UC Berkeley – Haas School of Business
International Business Development Program

In Collaboration with the United Nations Hunger Task Force

Analysis of Regional Scalability of School Feeding Programs Using Locally-produced Foods in Ghana

Final Report

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Abbreviations	
CBGP	Community-Based Growth Promotion
CRS	Catholic Relief Services
¢	Ghanaian cedis (¢ 9100 ≈ $1)
DA	District Assembly
DHC	District Health Committee
DFID	Department for International Development
ELP	(Beahrs) Environmental Leadership Program
FIFO	First in – first out (inventory principle)
GES	Ghana Education Services
GHS	Ghana Health Services
GPRS	Ghana Poverty Reduction Strategy
IBD	International Business Development
JJK	Janjori Kukuo (community near Tamale)
JSS	Junior Secondary School
MBA	Masters in Business Administration
MDG	Millennium Development Goal
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
RCC	Regional Coordinating Council
SFP	School Feeding Program
SMC	School Management Committee
UC Berkeley	University of California, Berkeley
UN	United Nations
UNHTF	United Nations Hunger Task Force
USAID	United States Agency for International Development
WFP	World Food Programme

1 Executive Summary

In 2000 the Governments of the world agreed the objective of halving the proportion of people suffering from hunger by year 2015. This commitment is one of the United Nations Millennium Development Goals (MDGs).[1] Five years later, the UN is now assessing progress towards meeting the MDGs. As part of this, The United Nations Hunger Task Force (UNHTF), consulting a range of experts, made recommendations on how this first goal could be achieved. The report identified strategies that had been implemented successfully which could be scaled up nationally and replicated in other countries. This report explores one of these suggested strategies, school feeding programs, as a means to address the first MDG. This report provides an implementation plan for scaling up a pilot school feeding program in the Ashanti Region of Ghana and identifies the costs associated with such a plan.

The pilot Ashanti school feeding program costs $0.28 per child, with an initial set-up cost of $0.14 per child. About three quarters of a million children could be reached in the Ashanti Region, for $23.5m a year, with one-off setup costs of $17.4m. As well as alleviating hunger, school feeding programs reduce malnutrition and stunted development, increase school enrolment and attendance, stimulate the local agricultural economy, and result in wider economic benefits.

There is no government or NGO funding set aside for school feeding programs in Ghana. The New Partnership for Africa Development (NEPAD) is working with the Ministry of Education to start five year school feeding programs targeting the most deprived schools in Ghana. Funding of $111,000 for 10 schools has been allocated by the Ministry of Finance and Economic Planning for a 65 day pilot starting in September 2005; but no money has been committed beyond the pilot.

This report provides background information, an overview of existing school feeding programs, and focuses specifically on the Ashanti Region Pilot Program. It distils best practices in the design and implementation of school feed programs. The report then outlines an implementation plan to scale up the Ashanti program to a regional, and ultimately national, level. This plan strives to balance the need for a large-scale program to include rigorous structure and oversight with the need for adaptation to local conditions. The implementation strategy builds on best practices in the areas of community engagement, facilities, and local food procurement. The two-phase approach of the proposal allows local districts to initiate the program on a small scale by building on existing programs. This approach allows time for capacity building and infrastructure development in preparation for large-scale expansion of the program in the second phase. The proposal includes a detailed costing of each phase of implementation and identifies both local and centralized sources of potential funding. Ultimately, successful scaling up of the Ashanti school feeding program will require extensive collaboration at the local, district, regional and national levels. In particular, the success of the program hinges on the availability of funding from the national Government or another outside source.

[1] http://www.un.org/millennium/declaration/ares552e.pdf - accessed June 23, 2005

2 Background

2.1 The International Business Development Program

The International Business Development (IBD) program is a global management consulting program operated by the Clausen Center at the Walter A. Haas School of Business, UC Berkeley. IBD has been assigning teams of MBA consultants to projects for 13 years. The program runs from January to December, with teams assigned to projects in January. From January to May, the teams prepare a work plan in consultation with their client and undertake background research and analysis. From mid-May to mid-June (May 22 – June 11, 2005) all teams spend three weeks performing field research in their assigned countries. Upon returning to Berkeley, the teams carry out any additional research to complete the assignment and deliver results to the project clients.

In recent years IBD teams have worked in collaboration with a number of Beahrs Environmental Leadership Program (ELP) Fellows who have participated in the ELP held on the Berkeley campus each summer. The program trains outstanding mid-career professionals on issues of sustainable environmental management. IBD teams have worked with ELP Fellows in countries ranging from Indonesia to South Africa and Cameroon. The resulting business plans have played a role in generating incremental resources to enhance innovative development activities.

The opportunity to work on this particular project was presented by Richard Beahrs and Abenaa Akuamoa-Boateng, both of whom are members of the United Nations Hunger Task Force. This report was developed in close collaboration with Ms. Boateng, who came to Berkeley from June 25th to July 16th as an ELP Fellow. It is hoped that her presence in Berkeley can help to ensure an ongoing collaboration building on the present work of the IBD team.

2.2 Health and Development in Ghana

In recent years, the international community has highlighted Ghana's recent successes in reducing poverty. The New York Times called Ghana a "good kid in a bad neighborhood".[2] Though Ghana has been successful relative to other countries in the region, including several affected by conflict, Ghana's population continues to suffer from many of the social, economic, and health challenges characteristic of a developing nation. The democratically elected Government faces a wide range of challenges, from water resource management to Government accountability, and from agricultural production to provision of social services.

The economic development of a nation depends heavily on the nutritional status of its people.[3] Hunger is often classified in two forms: acute and chronic. Acute hunger represents only a small proportion – roughly ten percent – of the world's hungry. Most of the world's hungry – approximately 90 percent – are chronically

[2] New York Times Editorial, April 25, 2005
[3] To Nourish a Nation - Investing in Nutrition with World Bank Assistance. http://www.worldbank.org/html/extdr/hnp/nutrition/tnan.htm - accessed June 23, 2005. Strauss, J. and Thomas, D. "Health, nutrition, and economic development," Journal of Economic Literature, 1998

undernourished. Chronic undernourishment is caused by a constant or recurring lack of access to food of sufficient quality and quantity, often coupled with poor health care and sanitation practices. It results in underweight and stunted children as well as high child mortality brought about by associated diseases. Chronic malnutrition, particularly among children, has been linked in numerous studies to reduced productivity, impaired cognitive development, increased mortality, and decreased overall health status. In the Ashanti Region of Ghana, protein energy malnutrition underlies 40 percent of all child mortalities, making it the single largest contributory cause of child mortality.[4] Nationwide, a quarter of all children under five are stunted, and a similar proportion are underweight.[5]

Children who are malnourished have significantly impaired opportunities to make an economic contribution to society in the long term. Adequate nutrition is critical to children's cognitive development, particularly during their younger years (5 and under). Between 1997 and 2002, stunting in children – a direct result of malnutrition – is estimated to have cost the Ashanti Region's economy $116.6 million through lost economic productivity.[6]

2.3 The United Nations Hunger Task Force

There are currently 850 million people suffering from hunger. The United Nations Hunger Task Force (UNHTF) has made seven recommendations on how to achieve the target in the first Millennium Development Goal of halving the proportion of the world's population suffering from hunger by 2015.

This report addresses the fourth UNHTF recommendation, "Improve nutrition for the chronically hungry and vulnerable," which focuses on malnutrition among children under five and school children. One of the Task Force's core recommendations for tackling hunger is rapidly to scale up school feeding programs, using locally-produced food rather than food aid where possible. However, when addressing hunger and the causes of hunger, it is necessary also to consider the factors that surround any single recommendation. In Section 5, Best Practices for School Feeding Programs, this report relates to some of the UNHTF report's additional recommendations, specifically:

- #1 - Move from political commitment to action;
- #2 - Reform policies and create an enabling environment; and
- #3 - Increase the agriculture productivity of food-insecure farmers.

The full set of UNHTF recommendations can be found in Appendix 1.

2.4 School Feeding As Nutritional Intervention

In areas where there is chronic malnutrition, school feeding programs at the preschool (ages 2-5) and primary (ages 6-12) levels have immense potential to improve the nutritional and educational status of young children.[7] By offering a

[4] Abenaa Akuamoa-Boateng , Ashanti Region Nutrition Unit Annual Report 2002
[5] Ghana 1998 Demographic and Health Survey. Stunting is defined as low height-for-age, below -2 standard deviations from medial value.
[6] Abenaa Akuamoa-Boateng , Ashanti Region Nutrition Unit Annual Report 2002
[7] Global Strategy for Infant and Young Child Feeding (UNICEF and WHO 2003)

dependable and nutritious meal for children every day, school feeding programs can provide children with the vitamins and nutrients they need physically to grow and develop. Additionally, children who have a nutritious meal during the school day are able to concentrate better, focus for longer, and retain more information than children who are hungry at school.

A secondary impact of school feeding programs is that they have been shown significantly to increase school attendance, particularly among girls. For each additional year of schooling, girls tend to delay pregnancy as well as reduce overall fertility, both indicators that are positively correlated with economic development. Finally, using locally-produced foods in school feeding programs offers the additional benefit of stimulating the local agricultural economy by creating a larger and more reliable market for agricultural goods.

This report examines a number of school feeding programs currently operating in Ghana, identifying best practices that can be replicated. The main focus of this report is a pilot preschool feeding program in the Ashanti Region that has been spearheaded by Abenaa Akuamoa-Boateng, Regional Nutrition Officer. The aim of this report is to provide an implementation plan and to identify costs of scaling up this pilot program to a regional level. Ultimately, this report identifies a method for replicating the program in other regions throughout Ghana.

3 School Feeding Initiatives in Ghana

The IBD team has made every effort to investigate every party involved in school feeding programs in Ghana. However, because of limited time and resources while the team was in Ghana, some programs may have been unintentionally excluded from the research. Below is a summary of the programs. See Appendix 2 for a full list of organizations consulted.

3.1 Government of Ghana Commitment to School Feeding

The Government of Ghana has expressed a commitment to school feeding programs on several occasions. First, Ghana's Poverty Reduction Strategy 2003-2005 proposes actions that civil society should concentrate on providing for Ghana. One of these actions suggested was providing school lunches in the most deprived communities in the North.[8] Since then the Government has made a wider commitment to school feeding programs. In a campaign speech in 2004 in the Volta Region, Ghanaian President Kufuor spoke about the importance of school feeding programs to the development of Ghana.[9] In the 2005 Budget Statement, the Minister of Finance and Economic Planning Mr Kwadwo Baah-Wiredu committed financing for 1.7 million pupils to benefit from school feeding programs on a national basis.[10] And on May 31, 2005, President Kufuor indicated that the Government would provide $60 million to the New Partnership for Africa's Development (NEPAD) proposal to provide at least one meal a day to all schoolchildren from 2006 to 2010 (Daily Graphic).[11] Indeed, the establishment of the NEPAD Initiative for School Feeding Programs at the national level is an indication of a strong Government interest in school feeding programs. But to date, no actual policy or guideline has been enacted to realize these commitments, nor has money actually been allocated to districts to fund school feeding programs.

3.2 World Food Program

Initiated in 1995, as part of the World Food Programme (WFP) – Ghanaian Ministry of Health Supplementary Feeding and Health and Nutrition Project, WFP food aid serves as a nutritional supplement to children under five, who receive two cooked meals a day, 260 days a year. Additionally, WFP provides take-home rations to girls at the Junior Secondary School (JSS) level who reach 90 percent attendance in a given month. This program operates across 17 districts in the three northern regions of Ghana (the Upper West, Upper East, and Northern Regions). The food basket provided to school feeding programs by WFP consists of rice, maize, sugar, and vegetable oil.

This program includes a five-year written agreement outlining the respective duties of the WFP and the community, and establishing a quarterly or semiannual feedback schedule, as well as a phase-out strategy when appropriate.

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[8] Ghana Poverty Reduction Strategy 2003-2005, page 208
[9] Meeting with Abenaa Akuamoa-Boateng June 10, 2005
[10] 2005 Budget Speech http://www.ghana.gov.gh/dexadd/Budget_2005.pdf Accessed June 24, 2005
[11] http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=82588
School feeding programs are part of NEPAD's agenda – President Kufuor

Although WFP's efforts are currently focused in the three northern regions, it is currently analyzing two additional regions (Ashanti & Western Regions). The aim is to extend coverage at the preschool level in collaboration with the Ghana Health Service programs currently running in Ashanti. While WFP has been involved in school feeding programs since 1995, it will be gradually withdrawing from school feeding programs over the next 5 years.

3.2.1 Preschool Feeding Programs

3.2.1.1 Janjori Kukuo Primary School

One example of the WFP preschool feeding program is the 117 pupil preschool in the Janjori Kukuo community in the Savelugu/Nanton District in the Northern Region of Ghana. This preschool is located in the old community primary school which was freed up after a new primary school was built nearby. It consists of 6 small rooms (roughly 12 feet by 15 feet), each with one window and one door. The roof of the structure is corrugated steel sheeting provided by WorldVision. The courtyard between the main structure and the kitchen is enclosed by a mud wall.

The school kitchen is a small structure (roughly 12 by 15 feet) with an opening for a door and a thatched roof that has been elevated 3 feet off the top of the walls. Although the WFP program requires a corrugated steel roof, the community has not yet been able to supply it. Food is cooked over a single fire located in the corner of the kitchen structure.

WFP food is stored in a classroom that has been converted for this use by the addition of pallets to elevate the sacks of rice and tins of oil off the ground. The structure only has one window so cross-ventilation is minimal. However, because there is no night watchman to ensure the security of the food, a single window is considered sufficient. No toilet is provided on the premises.[12]

The village sub-chief serves as school committee chair. The committee also includes two representatives from the community as well as the preschool attendants and teachers.

3.2.2 Primary School Feeding Programs

WFP has at least one primary school feeding program in Adognia in Upper East region, which began as a preschool program and has now been extended to the primary level. WPF also supports a junior secondary school in Adognia.

3.2.3 Junior Secondary School Feeding Program

At the JSS level, WFP uses food aid as an incentive to attract girls from poor families to school, targeting areas where female enrollment is lowest. This program is implemented by the Ghana Education Service (GES), which issues take-home rations to girls and their families as an incentive to increase enrollment and attendance. This program provides 10 kg of rice and 2 kg of vegetable oil to girls with at least 85% attendance in a given month. Maize is also provided as supplemental

[12] Meeting at school – June 6, 2005

food aid during the lean season, which occurs from January to July. Additionally, the quarterly collection of the ration by parents provides an opportunity for teachers to interact with them, providing performance feedback and increasing parents' awareness of the importance of their children's education. The GES distributes food to the district level; teachers retrieve it from the district store 3 times a year (roughly every three months during the school year). Food is stored for only 2-3 days, after which the families retrieve the rations from the school. As a result, no purpose-built storage facilities are required.

3.3 Catholic Relief Services

Catholic Relief Service (CRS) operates school feeding programs in every district within each of the 3 northern regions of Ghana. The program covers about one third of the primary schools in the three northern regions and operates during the lean season. CRS programs now include feeding a hot lunch to 225,000 boys and girls in 1236 schools (967 primary schools and 269 preschools). Additionally, in 400 of these primary schools girls with 90% attendance each month also get a take-home ration to further create incentives for enrollment, attendance, and retention. The program is implemented by GES and involves both teachers and the Parent Teacher Association.

The primary donor for CRS is the United States Agency for International Development (USAID), whose Title II[13] contributions account for roughly 90% of the budget. However, USAID does not favor school feeding programs and prefers to support health and agriculture projects for which it is easier to show results than with education.[14] As a result, USAID has requested that CRS scale back its school feeding programs to 75% of 2003 levels by the end of 2008. This reduction in coverage will target withdrawal from urban areas and non-performing schools. No plan now exists for the Ghanaian Government to take over feeding programs in these schools; but the WFP is identifying the schools that CRS will leave, in the hope of finding alternative funds when CRS ends support of these schools.

CRS food aid arrives in Tema from the USA where it is loaded into a 15,000 metric tonne warehouse supervised by CRS staff. Food arrives in the warehouse by November or December and two or three distributions can be made during the year. Distribution to the schools is achieved through 11 contracted transporters. According to the CRS Accra office, total losses are less than 1%. Losses are kept to a minimum by ensuring FIFO inventory management, waybill distribution tracking, and fumigation of CRS warehouses every 3 months.

Monthly reports are submitted by GES-employed circuit supervisors to partner supervisors and then on to CRS. These reports track indicators and progress against targets such as attendance, enrollment, and levels of food in stock at schools. These reports are verified by random spot checks and audits by CRS staff.

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[13]Defined as (non-emergency) food aid programs by Food and Nutrition Technical Assistance. http://www.dec.org/pdf_docs/PNACS927.pdf accessed June 23, 2005

[14]Program Graduation and Exit Strategies: A focus on Title II Food Aid Development Programs http://fantaproject.org/downloads/pdfs/TN9_EXITS.pdf accessed June 23, 2005

3.3.1 Preschool Feeding Programs

3.3.1.1 Gbanyomni Preschool

Gbanyomni is a community in the Northern Region of Ghana, roughly 10 minutes north of Tamale. From inspections of the school's records and food store, the food aid delivered by CRS appeared to be mainly sorghum, oil and porridge. However, their records indicated that the sorghum had run out between January 20 and May 15, 2005, and they had used locally procured gari (powdered cassava) to feed the children during this time. Furthermore, the preschool children normally receive two meals a day, but because only 4 bags of porridge had been received in the last shipment, the children were only receiving their mid-day meal.[15]

Community contribution to the program included the building of a single room kitchen, roofed with corrugated metal sheeting. This structure, ventilated only through a single window and open doorway (the door had been destroyed by termites), contained three open-fire cooking stoves and was staffed by two permanent volunteer cooks.

Additional funding for the program comes from the pupil contributions of ¢200 ($0.02) a day. These funds are used to purchase firewood and additional ingredients such as tomatoes, onions, peppers, fish, and dawadawa (a local bean paste). In the event of a funding shortfall, the chairman of the school management committee provides additional contributions to continue the program. Additionally, when required, community food contributions are solicited and collected by traditional leadership and brought to the school for storage and use.

Storage of food aid and community contributions occurs in a traditional mud-walled single-room structure in a nearby home. Security of this store appears to be good, with a locked door and no windows; however, the only ventilation is through the thatched roof. Food is being stored directly on the cement floor.

CRS had bought cups and a drinking bucket for the school; however, the availability and quantity of water is a real concern in this community. The well in town is nearly dry and water was being brought either on bicycle from a standpipe 5 kilometers away or from a standing open-air runoff collection dam nearby.

3.3.2 Primary School Feeding Programs

3.3.2.1 Janjori Kukuo Primary School

The previously discussed WFP Preschool and JSS feeding programs in the Janjori Kukuo community are complemented by a CRS primary school feeding program. CRS started this primary school feeding project seven years ago and it now serves one meal each day to roughly 200 pupils.[16]

The same meal is served each day as specified by CRS. The CRS-donated staples (sorghum, bulgur, maize, oil, and salt) are stored in a facility near the village sub-chief's residence. Additional perishable ingredients (e.g. tomatoes, peppers, and

[15] Meeting at school - June 7, 2005
[16] Meeting at school - June 6, 2005

fish) are bought by the school; this is financed by the collection of ¢5,000 ($0.55) every three months for a total of ¢15,000 (roughly $1.67) per child each school year. However, only about half of the pupils are able to pay the fee. The school asks non-paying pupils to pay ¢500 ($0.05) per week. However, shortages do occur (particularly in the lean season) and teachers usually volunteer to purchase the additional ingredients out of their own pocket.

3.3.2.2 Gbanyomni Primary School

The Gbanyomni Primary School feeding program operates in the same manner as the previously described Gbanyomni Preschool feeding program previously described, with two exceptions. Primary school children receive only a mid-day meal and they are expected to contribute ¢400 ($0.04) a day (as compared to the ¢200 a day expected of the preschool children).

3.4 Proposed Ghana – NEPAD School Feeding Program

The Ghana – NEPAD School Feeding Program is planned for the most deprived schools throughout the country, where "deprived" is defined by a number of factors including financial security, number of teachers, and food security. This program is overseen by the Ministry of Regional Cooperation, with significant leadership from Ministry of Education. District-level GHS nutritionists have worked with schools to develop a full week of menus, ensuring that they are nutritious as well as palatable. The program will cover all capital, operational, and administrative costs for schools at the preschool, primary, and junior secondary school levels.

Originally targeted to start in 2004, the Ghana-NEPAD School Feeding Program now looks to be on track for a pilot in September 2005. Following this one-term (64 school days) pilot, the program calls for scaling to cover 2,600 schools (500,000 pupils) by the end of the 2005-2006 school year and 30,378 schools (1.7 million pupils) by the fifth and final year of the program, at which time the program leadership intends to extend the program for an undecided duration. As well as addressing the issues of short term hunger, malnutrition, and attendance and retention, the program hopes to stimulate agricultural demand by buying locally-produced food.

About $111,000 has been allocated for this pilot, to cover one school in each of the 10 regions of Ghana (about 1840 children). This is intended to cover all costs including construction of a kitchen and eating area, cooking and dining materials, meal inputs, and salaried cooking staff. However, while the Finance Minister reiterated the Government's political commitment to the full 5 year program in his 2005 Budget, the remaining $474 million needed for the program has not yet been allocated.

3.5 Unilever

Unilever has been negotiating with the WFP about building a food processing facility in the Northern Region to provide at-cost fortified porridge over two to three years. They are also able to make a micronutrient pre-mix to add to cereals for a cost of $0.0003 per child per meal. While it appears that Unilever is not interested in producing Nutri-mix alone, there may be other opportunities for cooperation with Unilever.

Unilever provides school health and dental education in some locations, such as giving out free toothbrushes and toothpaste. This program is an important supplement to the health education often tied to school feeding programs in Ghana.

Abenaa Akuamoa-Boateng has also proposed to Unilever that they support the inclusion of fruit into the daily diet of pupils by providing fruit tree saplings and financing an annual award for the best performing trees in each region.

Unilever manufactures Anapurna brand nutritive biscuits called “Krunchy” that provide 25 percent of daily requirement of vitamin A and zinc. These biscuits cost about ¢250, which is too much for the currently proposed school feeding program; at-cost pricing by Unilever would increase access to these biscuits. Unilever has also discussed providing Anapurna iodated salt to school feeding programs at cost.

3.6 DSM Nutritional Products

One potential alternative to the Unilever Nutri-mix is the “DSM Sprinkles” produced by Roche in Switzerland and distributed for free by Sight and Life, a Swiss NGO. funded by Roche. DSM Sprinkles are available in packets from 5g to 100 kg. Abenaa Akuamoa-Boateng is discussing with Sight for Life the provision of DSM Sprinkles for the Ashanti Region preschool feeding expansion. A representative for DSM Nutritional Products is visiting Ghana in August to discuss providing free Sprinkles for the forty Community-Based Growth Promotion (CBGP) communities (see section 5.4.4 for a discussion of the CBGP program).

3.7 Other Organizations

Adventist Development and Relief Agency is supporting small scale feeding interventions in Ghana and there have been reports of other community-initiated programs. However, the team has been unable to establish contacts with any of these programs.

Furthermore, it appears that World Vision, is involved in school feeding in the Upper West Region. However, to date the team has had had no interaction with this NGO that generally concentrates on infrastructure projects.

4 Ashanti Region Pilot Program

4.1 Background

The Ashanti Region Pilot Program was initiated in sixteen communities by Abenaa Akuamoa-Boateng in 1993. In contrast to many of the school feeding programs run by NGOs in Ghana, this program is based on the use of locally-produced foods in school feeding programs, thus stimulating the local agricultural economy and providing nutritious meals for schoolchildren.

The specific objectives of the School Feeding Program according the original Executive Summary prepared by Abenaa Akuamoa-Boateng for NEPAD are to:

1) improve the nutritional status of children;
2) improve school attendance; and
3) reduce the number of school dropouts, especially among girls.

Secondary objectives include to:

1) improve early childhood health;
2) provide a forum for nutrition and health education for the community;
3) reduce community medical expenditures; and
4) improve children's cognitive development.

4.2 Sekyedumase Preschool Feeding Project

The team visited the Sekyedumase Preschool Feeding project on June 1, 2005 and met the school director, attendants (teachers), the local District Assemblyman, District Nutrition Officer, and several parents. This project has been noted among the success stories of the pilot program established by Abenaa Akuamoa-Boateng in the early 1990s. With a staff of a Director and two teacher/attendants, the preschool serves approximately 85 children, mostly aged two to five years.[17] Daily attendance averages about 71% of enrollment. With the help of volunteer mothers, the two cooks prepare and feed two meals a day to every child. Every child is required to contribute ¢500 ($0.05) a day to support the program's operations. The school operates year-round, except for a two week break at Christmas and a one week break at Easter.

4.2.1 Food Procurement and Storage

The school director manages the program and does the bookkeeping. Food procured on a regular basis is shown below. The weekly food cost for feeding 60 preschool children is approximately $32 as described in Table 1.

[17] As is the case with many preschool programs throughout the country, the actual age range is as low as eighteen months.

Table 1: Sekyedumase Preschool Food Procurement

Sekyedumase Preschool Food Procurement				
Food Item	**Qty Purchase**	**Frequency**	**Cost (cedis)**	**Weekly Cost**
Maize	50 kg	Every 2 months	500,000	57,692
Cassava/yam	variable	Every 2 weeks	100,000	50,000
Rice	36 cups	Weekly	108,000	108,000
Soya Beans	50 kg	Every 1.5 months	250,000	38,462
Groundnut Paste	variable	Every 2 weeks	30,000	15,000
Palm Nuts	variable	Every 2 weeks	30,000	15,000
Perishables	variable	Every 2 weeks	20,000	10,000
TOTAL				**294,154**

Note: The price of maize at the time of data collection was far above average. On average, maize during this season costs between ¢280,000 and ¢350,000 ($30.77 and $38.46).

All non-perishable foods are stored in two storerooms that were built by the Government when the school was built which are maintained by the parent volunteers and school attendants. One storeroom is used mainly for fuel (firewood), utensils, and food; the second room is used for longer-term storage of items such as less-perishable grains.

4.2.2 Food Preparation

All materials and labor for building the kitchen came from the community. Cooking implements, eating utensils, and aluminum plates were donated by the World Food Program in 1998. WFP phased out of this community in 2000. Because the on-site water source is currently out of service, the cooks carry water to the cooking area from a nearby borehole. The cooks are each paid ¢40,000 (approximately $4.40) per month from the children's contributions.

4.2.3 Monitoring and Oversight

The teachers weigh the children each month using the local health center scale because the school scale is broken. A School Management Committee (SMC) oversees the operation of the school and school feeding program. Members of the SMC include:

- The District Assemblyman
- A traditional leader nominated by local chief
- A literate community member selected to serve as Secretary
- A local community member
- The local Queen Mother (traditional leader)
- The Head Teacher
- A parent

In theory, the SMC meets monthly, but recently the committee has been meeting only as needed. The Director manages daily money collection, bookkeeping, payment of attendants, and bank deposits. However, the SMC retains sole authority to create policy and guidelines for the program, as well as to withdraw money from the school bank account, which currently holds a balance of ¢6,991,000.

4.2.4 Key Challenges

Current challenges identified by the Sekyedumase community for the School Feeding Program include:

- insufficient community involvement due to lack of community ownership;
- inactive SMC, primarily because of lack of tenure limits for traditional leader representatives;
- inadequate dining area (pupils eat in classrooms);
- sub-optimal kitchen facility;
- inability of some families to contribute ¢500 a day per child; and
- lack of policy flexibility – parents are not allowed to contribute food in lieu of money.

4.3 Comparison of the different school feeding programs

Sections 3 and 4 described school feeding initiatives in Ghana. Table 2 below summarizes the characteristics of the school feeding programs discussed. Please note that the Ghana – NEPAD Program has been evaluated on its planned practices whereas all other programs have been evaluated on their current practices.

Table 2: Feeding Program Best Practice Mapping

		WFP	CRS	GHS-Ashanti	Ghana - NEPAD*
Schools					
School Types	Pre-School	✓	✓	✓	✓
	Primary School		✓		✓
	Junior Secondary School	✓			
Community Participation					
Paid Staff	Teachers	✓	✓	✓	✓
	Cooks			✓	✓
Community	3-5 Community Volunteers	✓		✓	
	Active Women's Group	?	?	?	
	Active Town Committee	✓	✓	?	
	School Management Committee	✓	✓	?	✓
Traditional Leadership	No Chieftaincy Disputes	✓	✓	✓	
	Dynamic Chief	✓	✓	?	
	Collaboration with Assembly			✓	✓
Facilities					
School	Long Room				
Kitchen	Sanitary		✓		✓
	Ventilation	✓		✓	✓
	Metal Roof		✓		
	Fuel Efficient Stove			✓	
Storeroom	Reinforced	✓		✓	
	Ventilated	✓		✓	
	Palettes	✓		✓	
	Roof	✓	✓	✓	
	Ceiling				
Dining Hall	Suitable Non-Classroom Facilities				
Toilet	Suitable Facilities				
	Soap				
Garden	Fruit and/or Vegetable Garden				
Water	Potable	?		✓	?
	Close Proximity	?		?	?
Food Procurement					
Locally Produced Food	Staples			✓	✓
Kitchen	Oils			✓	✓
	Vegetables	✓	✓	✓	✓
	Meats/Proteins	✓	✓	✓	✓
Responsible Parties					
Community	School Director	✓	✓	✓	✓
	Teachers	✓		✓	
	Cooks	✓	✓	✓	✓
	Community Members/ Parents	✓		✓	
	School Management Committee	✓	✓	?	✓
District	Ghana Education Services	✓	✓		✓
	Ghana Health Services	✓	?	✓	
	Environmental Health	?	?	?	
	District Assembly	?		?	✓
	District Health Committee	?	?	✓	?
Regional	Ghana Education Services		✓		✓
	Ghana Health Services			✓	?
	Agriculture			?	
	Environmental Health			?	
	Regional Coordinating Committee				
National	Ministry of Education				✓
	Ministry of Health				
	Ministry of Agriculture				
Non- Governmental	Traditional Leaders	✓	✓	✓	?
	NGOs	✓	✓	✓	✓
Monitoring & Evaluation					
????					
Critical Success Factors					
Community	Commitment	✓	✓	✓	
	Sustainability of Commitment			✓	
Food Availability	Availability of Locally Produced Foods			✓	✓
Accountability	Internal Checks & Balances		✓		?
	Accountability of Leadership	✓	✓	✓	?
Funding	Funding Acquired	✓	✓		

5 Best Practices for School Feeding Programs

From the observations of the above programs, the report identified a number of best practices that should be considered when implementing or expanding school feeding programs in Ghana. These include best practices in the areas of community participation, school facilities, food procurement, responsible parties, and funding, which are described below and summarized in Table 2 above. Finally, the report identifies one critical success factor that should be considered alongside the best practices.

5.1 Best Practices in Community Participation

There was a consensus that School Feeding Programs (SFPs) will be most successful in communities that are actively interested and engaged in the program. Communities should have strong leadership, both in the formal and traditional sectors, who can mobilize community members to contribute time and resources to ensure the success of the SFP. It is important for communities to have active community groups, such as women's groups, parent-teacher associations, and school management committees, which can help with the organization and oversight of the SFP.

5.2 Best Practices for Facilities

Where possible:

- ***Kitchens or cooking areas*** should be safe for both cooks and pupils. Specifications on the size and safety characteristics should be established. "Improved" or fuel-efficient stoves offer safer, cleaner alternatives to open-fires. Schools also must have an accessible potable water source for cooking.
- ***Storage areas*** should be well-ventilated, reinforced, and adequately roofed and should offer protection against pests and vermin.
- ***Eating facilities*** should provide all pupils with a place to sit. If sufficiently large, eating facilities can also double as community education venues.
- ***Sanitary facilities*** should be provided for all children. At a minimum, pit toilets with toilet roll and hand washing facilities should be available before, during, and after feeding activities.

5.3 Food Procurement

Locally-produced foods provide the most sustainable and often most nutritious food source for school feeding programs. Using locally-produced food both provides an inexpensive and nourishing meal, and stimulates the local economy by creating reliable markets for agricultural products. Where possible, schools can plant and maintain small gardens or fruit trees on school grounds to provide children with additional nutritional supplements.

Currently, several NGOs operate school feeding programs that use food aid provided by USAID. During the "lean season" in northern Ghana (January – July), food aid can provide a beneficial source of nutrition when many families have little to no food

available. While food aid may provide an important source of food for such temporarily food-insecure areas, the use of food aid does not address many of the underlying causes of poverty and hunger in rural communities, such as agricultural production and local economic development. In the brief research, it was observed that food aid provisions could fluctuate significantly based on global political conditions and that the quality of food aid is not always ensured. While food aid addresses the symptoms, it does not tackle the causes of food insecurity, and may actually contribute to it. Therefore, this proposal (see Section 6 of this document) focuses on using locally-produced foods as a more sustainable food source for SFPs.

The report also recognizes that when SFPs are first initiated, it may be necessary for them to rely in part on non-local foods for the first six months to a year while local agricultural production responds to increased demand and output is sufficiently increased. Also, because food prices are lowest during the harvest season, it may be most cost-effective for SFPs to buy non-local foods (either bought in regional markets or provided by food aid) until the peak harvest season when prices of locally produced food are lowest.

For locally-produced food to be available in the quantities needed, significant governmental or NGO support to the farming communities may be required to increase production enough, especially during years of unfavorable rainfall.

5.4 Best Practices – Responsible Parties

A successful school feeding program that operates at a large scale (either regional or national) requires players at several levels to contribute resources, labor, and oversight. To be truly effective roles and responsibilities for each player must be clearly established and communicated. This section outlines the best practices of involvement at each level of government and community. This section describes only the general roles of each party involved in a SFP; the implementation plan in Section 6 provides a detailed proposal of responsibilities.

5.4.1 Community level

The teachers and directors must take an active role in the day-to-day management of the SFP. This involves both financial management, including collection of money and bookkeeping, and personnel management of cooks and parent volunteers. Finally, the school staff should play an active role in food procurement and inventory management.

The community needs to show commitment to and take ownership over all aspects of the SFP. It must be willing and able to participate actively in provision of time, resources and labor to support the program. Failure by the community to take full responsibility for managing a SFP will result in a failed program. This challenge can be addressed by asking the community take responsibility for:

- finding suitable buildings for the schools (and at least providing the labor for building the necessary structures);
- hiring of the cooks;
- establishing a SMC; and

- participation in a rotation of helping out at the school (particularly important at the preschool level).

It is critical to keep the community motivated and participative beyond the initial setup. Best practices to address this include:

- **Tenure limits:** Members of the SMC should adhere to tenure limits and that some of the SMC members have children currently benefiting from the SFP.
- **Frequent contributions:** Teachers should collect the children's monetary contribution to the program on a daily or weekly basis. Frequent payments make the burden appear smaller to parents, offer an alternative to pocket money for sweets, and offer an assurance to parents that their children get at least one nutritious meal a day.
- **Alternative payment methods:** For the children who are too poor to pay the daily contribution, communities may consider accepting payment in the form of labor or home-grown food products. The actual size of such payments should be determined by the SMC.

Finally, the SMC should work with local representatives from GHS and GES to ensure adequate staffing of the SFP (including cooks as well as teachers at all levels) and to monitor the program's operations and effectiveness. Collectively, the SMC and local community must lobby the District Assembly if additional funding is needed for the program.

5.4.2 District level

Each District Assembly has a functioning multi-sector Social Services Committee that oversees a District Health Committee (DHC), which is chaired by the District Chief Executive and comprised of representatives of GES, GHS, and Environmental Health. The DHC could take an active role in creating and managing school feeding programs within the district. Although the DHC is chaired by the District Chief Executive, the District Coordinating Director would be generally responsible for compliance with the responsibilities listed in Section 6 below.

District-level GES
Because it is ultimately responsible for schooling in general, GES would ideally take the ultimate responsibility for coordinating SFPs. GES could then provide general educational oversight as well as ensure that schools are using SFPs as a vehicle to teach health and nutrition to pupils and the broader community. Additionally, GES could ensure that feeding programs are established within both preschool and primary schools for a given community, in order to maximize impact. Once SFPs reach a large enough scale in the district, GES can procure and store food staples centrally, enabling SFPs to enjoy economies of scale in food procurement.

District-level GHS
At the district level, GHS would be responsible for the nutritional and health aspects of the SFP. This includes ensuring that teachers are adequately trained in monitoring the health and hygiene habits of pupils, providing guidelines for health monitoring at the school level, and providing de-worming medication on a biannual basis, and providing educational materials on health topics to schools.

5.4.3 Regional Level

At the regional level, the multi-sectoral Regional Coordinating Council (RCC) (including regional representatives from GES, GHS, and Environmental Health) should be responsible for auditing operations in the districts for which they are responsible. Because it sets guidelines for disbursement of district funds, the RCC should also be responsible for transmitting funding requests from the districts to the national ministries.

5.4.4 Traditional Leaders

The Ghanaian system of traditional leadership is an important influence on local and regional activities, particularly in the Ashanti region. Chiefs benefit from significant income from the land they lease to individuals and businesses. In areas where natural resources such as timber, minerals, and precious metals are abundant, traditional leaders have a regular source of income that can be used to support activities that benefit the community.

For school feeding programs, the support of traditional leaders will help to ensure full community support and participation in school feeding programs. Notably, the Ashanti King has expressed interest in incorporating school feeding programs into the 40 communities in which it currently operates the World Bank-funded CBGP program. Because of the strong influence of traditional leaders in communities throughout Ghana, all community-level school feeding programs could actively solicit support, including financial support, from local traditional leaders. Particularly in cases where traditional leaders receive significant amounts of income from natural resource royalties, they may be able to provide financial commitments to support school feeding activities, such as purchasing supplies to build kitchen areas.

5.4.5 National-level Ministries

The Ministries of Health, Education, Food and Agriculture, Local Government and Rural Development, Women and Children, Social Welfare and Community Development, and Finance and Economic Planning all play a key role in the oversight of SFPs, especially once such programs reach a national scale. It is critical that a single ministry assume responsibility for the program in order to avoid confusion at any level among the various ministries involved. This proposal requires cooperation across different ministries. The Ministry of Education is the best equipped to take the leadership role because of its existing infrastructure and staff in schools throughout the country. As the office primarily responsible for children's education, the Ministry of Education should bear ultimate responsibility for management of SFPs. The other ministries can provide additional oversight of school feeding programs, ensure that best practices are communicated across regional boundaries, and endeavor to extend school feeding programs to regions beyond Ashanti. Importantly, these national-level agencies also have authority to influence districts' allocation of Common Funds.

There is a significant amount of cooperation in some districts and in some regions. It should be noted, however, that pilots are often successful because of a single person driving the initiative. In order to reach large scale, it will be important to institutionalize processes and responsibilities. One way to increase the accountability

of leadership is to increase the authority of the districts over the transfer, recruitment, hiring, and firing of staff.

5.4.6 NGOs/Multilateral agencies

NGOs and multilaterals can fill in gaps where Government resources fall short. It is important to ensure that NGOs coordinate their efforts both with other NGOs and with governmental priorities.[18] NGOs can support school feeding programs in a variety of ways, for example:

- Expertise: Several NGOs have extensive knowledge and experience in operating of school feeding programs in Ghana. A government-sponsored program could explore the monitoring and evaluation systems of currently operating NGOs.
- Financing: NGOs can mobilize resources from outside of Ghana to finance the building of infrastructure related to school feeding programs. For example, NGOs can assist in the building of schools, storage structures, and kitchens, or they can provide the costly roofing materials needed to protect adequately community food storage areas. They can provide the initial capital investments necessary to start a school feeding program, such as cooking and utensils.
- Technical Assistance: NGOs could provide technical assistance in a number of areas. Perhaps the most pressing area is water resource development in food-insecure areas. Agricultural development services that introduce techniques to farmers in the areas of increased production, raising of small animals, and crop yield improvement are also critical to increasing the production of local foods. NGOs might particularly help farmers to market and process their products. NGOs may also have expertise in health and sanitation, or in building efficient stoves in school kitchens.

5.5 Monitoring and Evaluation

A successful monitoring and evaluation program lays out clear duties and responsibilities for each party involved, identifies the specific indicators to be measured, establishes the frequency of monitoring, and makes clear the structure of the reporting system. Also, it ensures that those parties who control resources are different from those parties who monitor and evaluate the program.

It is extremely important that monitoring, transparency and success criteria are clearly defined and understood by all parties in the beginning of the program and that these are openly communicated at all levels. The challenges of combining the formal Government administrative system with the traditional system of community chiefs require openness from all parties. The process should extend from the community level all the way to the regional and national levels. See Section 6.5.3 for a detailed overview of our proposed Monitoring and Evaluation Program.

5.6 Critical Success Factor – Funding

As demonstrated in the Costing Analysis in sections 6.4.4 and 6.5.5 below, our analysis suggests that ¢500 ($0.05) per child a day fee is not enough to provide a nutritious meal. The cost of an adequate meal is at least ¢2000 ($0.22) per child a day. The shortfall needs to be funded continuously. As discussed above, the national Government has expressed its commitment to school feeding program at many

[18] Ghana Poverty Reduction Strategy 2003-2005, page 200

official meetings and in many documents. It is now time to take action and allocate resources to such programs. A portion of the Common Fund could be earmarked for school feeding programs and distributed to the District Assemblies. It is critical that the use of these funds be considered less for constructing buildings than for overall funding of the programs on an ongoing basis.

6 Proposal for Regional Scaling of Ashanti Pilot Program

6.1 Approach to scaling up

Based on the best practices described above, what follows is a proposal for expanding the Ashanti Pilot Program to a regional scale. Scaling up the current project to a regional level for both preschool and primary schools requires a number of commitments at the community, district, regional, and national level. In what follows, the report first outlines the objectives for a region-wide school feeding program, followed by a listing of our assumptions. Next, it describes a two-phase approach for implementing the program. Finally, it summarizes the factors to be considered if this program is to be scaled up to a national level.

6.2 Objectives

The specific objectives of the School Feeding Program are to:

- improve the nutritional status of children;
- improve school attendance; and
- reduce the number of school dropouts, especially among girls.

Secondary objectives include to:

- improve early childhood health;
- provide a forum for nutrition and health education for the community;
- reduce community medical expenditures,
- improve children's cognitive development,
- stimulate the local economy through creation of additional demand for local farm produce, and
- improve food security.

6.3 Assumptions

6.3.1 External Assumptions

This proposal assumes that agricultural development projects will be carried out in parallel with the expansion of the school feeding program. Such projects can be carried out by both government bodies and NGOs and might address such issues as increased productivity, irrigation, and increased crop yields. The precise nature of these projects is outside of the scope of the current proposal.

6.3.2 Funding and Costing Assumptions

6.3.2.1 Funding

This SFP proposal assumes that there will continue to be a voluntary cash fee contributed by parents of attending pupils for the daily provision of school meals at around existing levels. However, this meal or canteen fee (¢500 ($0.05) for preschool and ¢1,000 ($0.11) for primary school) falls well short of ¢2,000 which is required to provide a nutritious cooked meal each day (example provided in Table 3). The funding shortfall will need to be addressed by the District Assembly (DA), which has the money available to support such programs and the executive power to make such allocations of public funds. It is assumed here that the DA provides a pre-

determined percentage of the Common Fund to cover any shortfalls in the program. This provision is only made in Phase II, when the district-wide SFP is brought into effect. In Phase I, schools and SFP coordinators will need to obtain funding elsewhere, either through their own agencies (GES or GHS for example) or from external donors.

Table 3: Example of Food Cost for One Meal (Primary School Child)

Food Cost		
Inputs per Meal		cedis
	Staple (100g rice)	600
	Protein (15g protein from dried anchovies)	400
	Oil (15g vegetable oil)	400
	Fresh Produce (local fruit and vegetables in season)	300
	Condiments (for sauce)	300
	"Ready Mix" Micronutrient Supplement	3
Subtotal Inputs per Meal		**2,003**

Source: Abenaa Akuamoa-Boateng, Regional Nutrition Officer, Kumasi. The costs are expected to be lower in urban areas.

6.3.2.2 Capital Costs

A key assumption is that there are few capital costs within the program. Most necessary infrastructure or equipment is provided by the communities and districts at no financial cost, and the local community can provide the materials and labor necessary for building the necessary facilities, such as kitchens, eating areas, storerooms and toilets. Where significant need exists, one-time Government assistance may be provided for expensive capital items such as galvanized iron roof sheeting, stove and cooking equipment. Voluntary community participation and collective contribution is one key driver to reduce financial costs,[19] with the result that the average cost per child (¢2,551 ($0.28) for the district see Appendix 5 - Phase II District School Feeding Program Cost Breakdown) is only marginally above the cost of the ingredients (here budgeted at ¢2,000 ($0.21)).

6.3.2.3 Operating Costs

Operating costs (consisting broadly of food procurement, capital infrastructure maintenance and labor) are kept to a minimum. As many of the human resource demands of the program are additional to the staff's existing responsibilities, there is no additional cost burden to the program from the hiring, training and management of new personnel. These existing responsibilities include:

- GES support of teachers and assistants: GES is responsible for paying the salaries of all teachers, teaching assistants, and preschool attendants on a regular basis. GES' role should continue to include teacher training in new educational techniques, attendance monitoring, and pupil academic achievement evaluations.
- GHS health and nutrition training for teachers and community: GHS district-level staff should use the SFP to provide regular health and nutrition training to teachers, pupils, and community members. Particular attention might be focused on providing the employed food preparers with nutritional and food preparation sanitation training. GHS staff might also train teachers to instill healthful eating

[19] Our costing only includes direct financial costs and not the value of voluntary contributions by the communities.

habits and sanitary personal habits (e.g. hand washing) in the pupils. GHS could undertake regular monitoring of the SFP's nutritional objectives.
- GHS annual hemoglobin tests for anemia: GHS is responsible for absorbing the cost of this annual test for each pupil.

6.4 Implementation Phase I

Phase I of the implementation plan would establish a school feeding program in at least one community of each district of the Ashanti Region. Ideally, the school feeding program could be integrated into both preschool and primary school levels.

Because school feeding programs using locally-produced foods do not exist on an appreciable scale nationwide, a region-wide pilot program should be initiated in one primary school per district. This will help to secure the commitment of the district leadership to the program. School feeding programs might initially be established in the communities implementing the CBGP program, which is currently being implemented in 40 communities, covering all 21 districts of Ashanti, as a result of the support of the Asanteman Council and the World Bank. There are plans to expand this program to additional communities within Ashanti.

Below is a description of the processes to be implemented to establish a school feeding program in a single school. This description is generally applicable to either a preschool-level or primary school-level program; specific differences in costing for each are outlined in the Program Costing section.

6.4.1 Community Selection Criteria

To implement a school feeding program, a community must ensure that the following community participation guidelines are met:
- active and effective School Management Committee;
- active town committee who meets regularly and is willing to participate actively in school feeding;
- dynamic chief who can mobilize his people;
- collaborative relationship between chief and District Assembly;
- active women's group;
- no chieftaincy disputes; and
- a number of teacher in both preschools and primary schools, according to GES guidelines, with at least primary education capable of managing daily accounting and bookkeeping for SFP.

6.4.2 Process Description

The SFPs in Phase I can be described in five process steps: procurement, storage, preparation, feeding, and monitoring & evaluation. Table 4 below shows the specific activities, specifications and costs at each step.

Table 4: Phase I - Process Activities, Specifications and Costs

Phase I Process Description

Process Step	Item or Activity	Specifications	Program Costs	
			Capital	Operation & Maintenance
1. Procurement	**Foodstuffs**	- Maize, rice, legumes, oil, sugar and perishables (fish, vegetables etc.) procured regularly from local market - GHS to provide information on meal nutrition and menu suggestions	N/A	Rural: ¢2000/meal Urban: Meals may be sourced from local vendor at lower price
	Firewood	- Procured locally	N/A	Preschool: ¢2,500/week Primary School: ¢5,000/week
	De-worming Medication	- Administered twice annually to all children	N/A	$0.25/dose
	Labor	- District procurement by an employed Procurement Officer - Local procurement by a volunteer member of school staff	N/A	Procurement Officer: ¢20,000/day Staff Volunteer: no additional payment
2. Storage	**Storeroom**	- On-site or off-site - Minimum 15 x 12 ft floor plan - Well ventilated with minimum two 3 ft windows - Galvanized sheet roofing - Rodent-proof ceiling and walls - Palettes placed on floor - Secure and locked at all times	Community to provide materials and labor for construction at no cost with exception of roofing	Room maintenance estimated at 10% cost value per year
3. Preparation	**Kitchen Area**	- Sanitary - Minimum 20 x 12 ft floor plan with 8 ft serving area - Well ventilated with minimum two 3 ft windows - Galvanized sheet roofing - Potable water available - School garden with fruit trees, vegetables	Community to provide materials and labor for construction at no cost with exception of roofing	Area maintenance estimated at 20% cost value per year. Which are assumed to be ¢100,000 for roofing.
	Stove	- Liquid or gas fuel stove preferred - Well ventilated or smokeless design	Communities to provide stove at no cost	Stove maintenance is the responsibility of the community at no cost
	Cooking Equipment and Utensils	- Pots - Frying pans - Spoons, stirrers and ladles - Washing bowls	Communities to provide 95% equipment at no cost, funding available for specific items	Equipment maintenance estimated at 20% cost value per year - ¢35,000.
	Labor	- One food preparer per 60 pupils - Minimum two volunteers/mothers	N/A	Food Preparers: ¢13,500/day minimum wage Volunteers/Mothers: unpaid
	Milling	- Maize milled at a local facility on a weekly basis	N/A	¢8,000/week

			Program Costs	
4. Feeding	**Eating Area**	- Food should be served in a purpose-built area outside classroom	Community to provide materials and labor for construction at no cost with exception of roofing	Area maintenance estimated at 20% cost value per year
	Sanitation Area	- Adequate and sanitary toilet - Personal hygiene area - Clean water - Soap	Community to provide materials and labor for construction at no cost, receive funding for specific items	Maintenance of facilities and re-supply of soap
	Eating Utensils	- 1 bowl per pupil - 1 cup per 10 pupils - 1 spoon per pupil - Aluminum preferred over plastic due to extended useable life (5 years)	Communities to provide 95% equipment at no cost, funding available for specific items	Equipment maintenance estimated at 20% cost value per year
	Labor	- Teacher to supervise feeding	N/A	Within existing GES role
5. Monitoring & Evaluation	**Equipment**	- Weighing scales - Height measurement device	GHS to provide at no cost	N/A
	Labor	- GES and GHS staff to monitor child health and school attendance - SMC responsible for inventory management	N/A	New tasks performed under existing roles at no additional cost to SFP

Note: “No cost” means that the Community will provide these items and their costs have been ignored in this report’s cost assumptions.

6.4.3 Roles and Responsibilities

As described earlier, a successful SFP requires extensive cooperation between people at several levels. By contributing resources, labor, or oversight, each party has a clearly defined role. In addition to roles, responsibilities for each player must be clearly established and communicated. Table 5 below lays out a detailed proposal for allocation of responsibilities.

Table 5: Summary of Roles and Responsibilities

Summary of Responsibilities				
Level		**Start-Up**	**Operations**	**Oversight**
Community	**School Director (or other appointed volunteer)**	- Provide leadership and vision for project	- Manage daily bookkeeping, tracking inflows and outflows of food - Collect daily contributions from pupils	- Submit monthly report to SMC detailing quantity of food purchased and consumed, pupil attendance, revenues and expenditures
	Teachers		- Cultivate good eating habits in children - Teach children basic nutrition - Measure and weigh children according to School Health Policy	- Monitor personal hygiene habits of pupils - Refer pupil health problems to Zone Health Officer
	Cooks	- Work with district nutritionist to develop nutritious menu of meals	- Procure semi-perishable foods (e.g. onions, tomatoes) weekly on market day - Procure perishable food (e.g., leafy greens) daily at local market - Communicate monthly with SMC regarding quantity of staples to be procured from district store	
	Community Members/ Parents	- Provide materials and labor to build kitchen and storage facility	- Pay daily fee (¢500 for preschool; ¢1000 for primary)	- Provide feedback as necessary to SMC regarding program functioning
	School Management Committee	- Mobilize local community to build kitchen and storage facility - Recruit cooks - Lobby District Assembly for program funding	- Procure staple foods monthly from district store - Recruit parent volunteers to assist with daily food preparation - Ensure payment of cooks at least minimum wage (¢13,500/day)	- Inventory management: oversee bookkeeping and monitoring of daily intake and outflow of food items - Review monthly reports from School Director - Oversee growth monitoring of children by teachers
District	**District Assembly**	- Ensure communities are actively engaged and participating in program	- Allocate funds from Common Fund to support school feeding program	

Summary of Responsibilities				
Level		**Start-Up**	**Operations**	**Oversight**
District (Cont.)	**Environmental Health**		- Certify schools that comply with environmental health guidelines - Provide basic water and sanitation education to communities	
	Social Services Committee - District Health Committee			- Provide general oversight for school feeding programs
	GES	- Build district-level storage facility for staple foods	- Procure and store locally-produced staple foods for monthly distribution to schools throughout district - Provide ongoing teacher training - Ensure payment of primary school teachers according to GES standards - Ensure payment of preschool teachers at least minimum wage (¢13,500/day)	- Assume ultimate responsibility for school feeding programs - Monitor pupil enrollment and attendance as reported by teachers - Provide teacher oversight in all areas described in Teacher Responsibilities above - Ensure that teachers are monitoring child health according to School Health Policy
	GHS	- Develop nutritious menus using local foods in collaboration with cooks	- Provide teachers and cooks with nutrition training - Ensure that teachers and health workers use SFP as vehicle for educating broader community (especially caregivers) about nutrition - Supply deworming medication twice a year - Provide health learning materials - Conduct annual hemoglobin tests for anemia	- Oversee health monitoring in schools - Ensure Zone Community Health Officers regularly analyze and provide feedback to community, SMC, and district on health data reported
	Agriculture		- Provide agricultural development and production assistance to farmers, including access to improved seeds, guidance on planting/harvesting, and water resource management	
Regional	**Regional Coordinating Council**		- Transmit funding requests from districts to national ministries - Approve development plan (have veto against DA)	- Audit district operations

Summary of Responsibilities				
Level		**Start-Up**	**Operations**	**Oversight**
	GHS			- Provide general oversight to District GHS
	GES			- Provide regional leadership for SFPs
	Environmental Health (unit of Ministry of Local Govt and Rural Dvpt)			- Provide general oversight to District Environmental Health officers
	Agriculture		- Provide agricultural development support to local farmers	
National	**Ministry of Education**	- Make available some initial funding to support building of kitchens, storage areas, etc.		- Provide ultimate oversight of program at national level
	Ministry of Health			- Support regional and district level activities
	Ministry of Local Government and Rural Development			- Support regional and district level activities
	Ministry of Agriculture	- Provide agricultural development support to local farmers		
Non- Govern-mental	**Traditional Leaders**	- May provide funds to buy materials for building infrastructure such as kitchens	- May provide funds for ongoing operation of program	
	NGOs	- May provide funds to buy materials for building infrastructure such as kitchens	- Mobilize financial and in-kind resources for infrastructure development - Provide expertise in technical areas, such as sanitation, improved stoves, etc.	- May provide expertise or consultancy on monitoring and evaluation practices

6.4.4 Program Costing Pre- and Primary School Feeding Programs

The following key assumptions were made within the costing model:

Table 6: Input Data for Phase I Cost Analysis

Preschool	
Number of Enrolled Children	60
Average Attendance Rate	75%
Average Attendance	45
Number of Preschool Meals a day	2 (breakfast and lunch)
Cost of Each Preschool Meal	¢1,000
School Year Duration (days)	246
Number of Preschool Meals Prepared per Year	22,140
Primary School	
Number of Enrolled Children	120
Average Attendance Rate	75%
Average Attendance	90
Number of Primary School Meals a day	1 (lunch only)
Cost of Each Primary Meal	¢2,000
School Year Duration (days)	200
Number of Primary Meals Prepared per Year	18,000

Phase I program costs for a Pre- and Primary SFP over five years are outlined in Appendix 3 and Appendix 4 respectively. As shown there and summarized in Table 7 below, the total cost of implementing a school feeding program is partially funded by the daily fees collected from pupils. The program will require additional resources to address the shortfall.

Table 7: Phase I Cost Summary for Five Years

Phase I	Per Preschool		Per Primary School	
	Cedis	US$	Cedis	US$
Total Revenues	¢27,675,000	$3,041	¢90,000,000	$9,890
Total Costs	¢182,717,520	$20,078	¢261,692,358	$28,757
Shortfall	(¢155,042,520)	($17,038)	(¢171,692,358)	($18,867)

Sources: Appendix 3 - Phase I Preschool Feeding Program Cost Breakdown, Appendix 4 - Phase I Primary School Feeding Program Cost Breakdown

6.5 Implementation Phase II

Following a year of implementation at the scale of Phase I, the Regional Coordinating Committee may hold an inter-district conference for evaluation of Phase I and sharing of best practices. Districts might add additional schools to the program as feasible. Because of its long-term regional expansion plans and focus on early childhood health, the continuing expansion of the CBGP provides an excellent foundation upon which to expand the school feeding program within each district.

6.5.1 Community Selection Criteria

To expand the program into additional communities, each community must meet the criteria outlined in Implementation Phase I described above.

6.5.2 Process Description

The SFP in Phase II can be described in seven process steps: procurement, district storage, distribution, local storage, preparation, feeding, and monitoring & evaluation. Table 8 below shows the specific activities, specifications and costs at each step.

Table 8: Phase II Process Activities, Specifications and Costs

Phase II Process Description				
Process Step	**Item or Activity**	**Specifications**	**Program Costs**	
			Capital	**Operation & Maintenance**
1. Procurement	**Foodstuffs**	- District procurement of maize, rice, legumes, oil and sugar locally in bulk quantities on fortnightly/ monthly/ quarterly basis - Perishables (fish, vegetables etc.) procured regularly from local market - GHS to provide information on meal nutrition and menu suggestions	N/A	Rural: ¢2000/meal Urban: Meals may be sourced by local vendor at lower price
	Firewood	- Procured locally	N/A	Preschool: ¢2,500/week Primary School: ¢5,000/week
	De-worming Medication	- Administered twice annually to all children	N/A	$0.25/dose
	Labor	- District procurement by an employed Procurement Officer - Local procurement by a volunteer member of school staff	N/A	Procurement Officer: ¢20,000/day Staff Volunteer: no additional payment
2. District Storage	**Warehouse**	- Use existing facilities available at district level	Space provided at no cost	Space provided at no cost
	Labor	- Two laborers - One manager	N/A	Laborer: ¢13,500/day minimum wage Manager: ¢20,000/day
3. Distribution	**Transport**	- Distribution to schools occurs on monthly basis - Contract local reputed transporters	N/A	¢100,000/day
4. Local Storage	**Storeroom**	- On-site or off-site - Minimum 15 x 12 ft floor plan - Well ventilated with minimum two 3 ft windows - Galvanized sheet roofing - Rodent-proof ceiling and walls - Palettes placed on floor - Secure and locked at all times	Community to provide materials and labor for construction at no cost with exception of roofing	Room maintenance estimated at 10% cost value per year

			Program Costs	
5. Preparation	**Kitchen Area**	- Sanitary - Minimum 20 x 12 ft floor plan with 8 ft serving area - Well ventilated with minimum two 3 ft windows - Galvanized sheet roofing - Potable water available - School garden with fruit trees, vegetables	Community to provide materials and labor for construction at no cost with exception of roofing	Area maintenance estimated at 20% cost value per year
	Stove	- Liquid or gas fuel stove preferred - Well ventilated or smokeless design	Communities to provide stove at no cost	Stove maintenance is the responsibility of the community at no cost
	Cooking Equipment and Utensils	- Pots - Frying pans - Spoons, stirrers and ladles - Washing bowls	Communities to provide 95% equipment at no cost, funding available for specific items	Equipment maintenance estimated at 20% cost value per year
	Labor	- One food preparer per 60 pupils - Minimum two volunteers/mothers	N/A	Food Preparers: ¢13,500/day minimum wage Volunteers/Mothers: unpaid
	Milling	- Maize milled at a local facility on a weekly basis	N/A	¢8,000/week
6. Feeding	**Eating Area**	- Food should be served in a purpose-built area outside classroom	Community to provide materials and labor for construction at no cost with exception of roofing	Area maintenance estimated at 20% cost value per year
	Sanitation Area	- Adequate and sanitary toilet - Personal hygiene area - Clean water - Soap	Community to provide materials and labor for construction at no cost, receive funding for specific items	Maintenance of facilities and re-supply of soap
	Eating Utensils	- 1 bowl per pupil - 1 cup per 10 pupils - 1 spoon per pupil - Aluminum preferred over plastic due to extended useable life (5 years)	Communities to provide 95% equipment at no cost, funding available for specific items	Equipment maintenance estimated at 20% cost value per year
	Labor	- Teacher to supervise feeding	N/A	Within existing GES role
7. Monitoring & Evaluation	**Equipment**	- Weighing scales - Height measurement device	GHS to provide at no cost	N/A
	Labor	- GES and GHS staff to monitor child health and school attendance - SMC responsible for inventory management	N/A	New tasks performed under existing roles at no additional cost to SFP program

6.5.3 Monitoring and Evaluation

Monitoring and evaluation can be incorporated within the responsibilities of existing personnel, and there is therefore no additional financial cost of labor. Local and district GES and GHS officials will continue to monitor the child's health and school attendance, and school management committees, or equivalent groups, are

responsible for managing and monitoring the SFP, for example management of inventory management.

Reporting and Auditing are critical aspects of school feeding programs because they are required to ensure proper governance of program operations as well as to evaluate the effectiveness of the program. Success requires interested parties to understand their responsibilities in these processes as well as the specific criteria against which they will be measured.

Areas of Monitoring

Reporting and monitoring of the school feeding programs should be structured clearly to show results against the major program objectives and should additionally address concerns regarding governance of the program operations. As a result, this report recommends that program reporting should be broken down into 3 sub-categories: health, education, & operations. The specific reporting data are outlined in the below.

Table 9: Monitoring Frequency & Responsibility

Student Health	**Physical**	Height	Quarterly	Teacher
		Weight	Monthly	Teacher
		Indicator Ratios	Quarterly	District GHS
	Age	Age	Ongoing	Teacher
	Illnesses	Blood Hemoglobin Levels[1]	Yearly	District GHS
		Malaria	Daily	Teacher
		Diahhrea	Daily	Teacher
Health Education	**Delivery**	Health Education Sessions - Community	Ongoing	District GHS
		Health Education Sessions - Pupils	Ongoing	Teacher
		Health Education Session Attendance	Ongoing	District GHS
	Effectiveness	Student Hygiene Habits[2]	Yearly	District GHS
Environmental Health	**Toilette Facilities**	Type	Yearly	District Env. Health
		Quality	Yearly	District Env. Health
	Water Source	Type	Yearly	District Env. Health
		Quality[3]	Yearly	District Env. Health
		Distance From School	Yearly	District Env. Health
Education Measures				
Student Presence	**Enrollment**	Total	Ongoing	Head Teacher
		Female	Ongoing	Head Teacher
		Male	Ongoing	Head Teacher
	Attendance[4]	Total	Ongoing	Head Teacher
		Female	Ongoing	Head Teacher
		Male	Ongoing	Head Teacher
	Retention	Total	Ongoing	Head Teacher
		Female	Ongoing	Head Teacher
		Male	Ongoing	Head Teacher
Student Performance	**Academic Performance[5]**	Total	Yearly	Head Teacher
		Female	Yearly	Head Teacher
		Male	Yearly	Head Teacher
Process Measures				
Inputs	**Government Contributions**	Monetary	Quarterly	Head Teacher
		Non-Monetary	Quarterly	Head Teacher
	NGO / Multilateral Contibutions	Monetary	Quarterly	Head Teacher
		Non-Monetary	Quarterly	Head Teacher
	Community Contributions	Monetary	Quarterly	Head Teacher
		Non-Monetary	Quarterly	Head Teacher
	Family Contributions	Monetary	Quarterly	Head Teacher
		Non-Monetary	Quarterly	Head Teacher
Sinks	**Spoilage**	Rotting/Rancid	Monthly	Head Teacher
		Infestation/Rodents	Monthly	Head Teacher
	Pilferage	Food	Monthly	Head Teacher
		Firewood	Monthly	Head Teacher
		Soap	Monthly	Head Teacher
		Cooking & Serving Equipment	Monthly	Head Teacher
	Breakage	Cooking & Serving Equipment	Monthly	Head Teacher
Inventory	**Food**	Food	Monthly	Head Teacher
	Equipment	Cooking & Serving Equipment	Monthly	Head Teacher
Outputs	**Number of Students Served**	Total	Monthly	Head Teacher
		Male	Monthly	Head Teacher
		Female	Monthly	Head Teacher
	Quantity of Food Served	Staple Quantities	Quarterly	District GHS
		Fruit/Vegetable Quantitites	Quarterly	District GHS
		Protein Quantities	Quarterly	District GHS

1 – This measure is a useful indicator of de-worming success. The roughly ¢5,000 cost of each test should be included as part of the GHS budget. Testing should be executed during the yearly District GHS audit including pupil hygiene habits

2 – Pupil Hygiene Habits should be reviewed during a yearly audit performed by District GHS. Specifically, the frequency of pupil hand washing after using the toilet and before meals should be observed.

3 – Ideally, water quality should be determined through annual testing of water samples. However, until this technology becomes readily available the following scale may be used as a proxy:
- 1 – Standpipe at School
- 2 – Ported water from distant standpipe
- 3 – Borehole with pump
- 4 – Well with bucket
- 5 – Open source

4 – Because poor attendance may be attributed to illness, it should also be considered a useful pupil health indicator.

5 – Academic performance should be measured through delivery of a standardized test, such as that used in the USAID grading program.

Reporting Responsibilities

Reporting at each level of the program (school level, district level, & region level) should be executed by the group holding primary responsibility for operations at that level and delivered to the group holding primary responsibility for operation of the program at the next level. Furthermore, reporting should be executed as frequently as practicable and useful in governance of the program. This report specifically recommendations regarding the responsible parties and frequency of program reporting at each level are summarized in Table 10 below.

Table 10: Program Reporting Responsibilities

Program Reporting Responsibilities			
Level	**Reporting Entity**	**Reviewing Entity**	**Reporting Frequency**
School	School Director	School Management Committee	Weekly
District	School Management Committee	District Health Committee	Monthly
Region	Regional Coordinating Council	District Health Committee	Quarterly

Auditing Responsibilities

The periodic auditing of program reports is needed so that adequate checks and balances are built into the system to validate reporting data and reduce the opportunities for misuse of program resources. Therefore it is the responsibility of the level above the reporting level to perform an audit on the reports they have received as frequently as practicable and useful by the program. The specific recommendations regarding responsibilities and audit frequency are outline in Table 11.

Table 11: Program Auditing Responsibilities

Program Auditing Responsibilities			
Level	**Responsible Entity**	**Auditing Entity**	**Auditing Frequency**
School	School Director	School Management Committee	Monthly
District	School Management Committee	District Health Committee	Quarterly
Region	Regional Coordinating Council	District Health Committee	Regional Level

6.5.4 Roles and Responsibilities

All roles and responsibilities are the same as in Phase I, except for the following:

6.5.4.1 School Management Committee

As described in Phase I above, with the additional responsibility of procuring staple foods monthly from the district store.

6.5.4.2 District GES

As described in Phase I above, with the additional responsibility of maintaining the district staple foods store.

6.5.4.3 National Ministries

Once the program has progressed to Phase II of implementation, the national ministries could begin to take increasing responsibility for management of the program, as well as considering how to expand it to a national scale. The Ministry of Education will continue to provide overall leadership, coordination, and oversight in Phase II. The Ministries of Health, Agriculture, and Local Government and Rural Development, which houses the Environmental Health unit, will also continue to play supporting roles. These ministries should provide overall oversight of school feeding programs, ensure that best practices are communicated across regional boundaries, and endeavor to extend school feeding programs to regions beyond Ashanti. The national-level agencies also have discretion to influence District allocation of Common Funds.

6.5.5 District School Feeding Program Costing

Expanding the program to a regional (or national) scale might be achieved by duplicating the program from district to district. As such, program costing will vary between districts. An example costing for district-wide SFPs was completed for the Ejura-Sekyedumase district in the Ashanti region. The following key assumptions were made within the costing model:

Table 12: Phase II Assumptions for Costing of School Feeding Programs

District	
Rural or Urban	Rural
District Population	97,000
Number of Communities in District	125
% Community Participation in SFP	65%
Number of Communities Participating in SFP	81
Preschool	
% Population Preschool Age (2 to 5 years)	10%
Preschool Age Children	6,305
Preschool Average Attendance Rate	75%
Number of Preschools in District	105
Preschool enrolment	60
Preschool Duration (school days per year)	246
Number of Preschool Meals a day	2
Cost of Each Preschool Meal (cedis)	¢1,000
Cost of Each Preschool Meal (US$)	$ 0.11
Primary School	
% Population Primary School Age (6 to 14 years)	14.5%
Primary School Age Children	9,142
Primary School Average Attendance Rate	75%
Number of Primary Schools in District	76
Primary Enrolment	120
Primary School Duration (school days per year)	200
Number of Primary School Meals a day	1
Cost of Each Preschool Meal (cedis)	¢2,000
Cost of Each Preschool Meal (US$)	$ 0.22
School Feeding Program	
Total Number of Children Participating in District SFP	15,447
Number of Prepared SFP Meals per Year	3,697,883

Above data is based on the population data of Ejura-Sekyedumase District

In this example, the District Common Fund was used as an additional and available source of revenue. 5% of the approximate ¢3 billion annual fund (~ ¢150 million) was assumed earmarked for the SFP.

Phase II program costs for the Ejura-Sekyedumase District SFP over five years are outlined in Appendix 5. As shown there and summarized in Table 13 below, the total cost of implementing a school feeding program is partially funded by the daily fees collected from pupils and the contribution from the District Common Fund. The program will require additional funding to address the shortfall.

Table 13: Phase II Cost Summary for Five Years

Phase II	Ejura-Sekyedumase District	
	Cedis (in millions)	US$
Total Revenues	¢10,514	$ 1,155,480
Total Costs	¢35,587	$ 3,910,710
Shortfall	(¢25,072)	$ (2,755,230)

Source: Appendix 5

6.6 Program Extension – Considerations for Scaling to a National Level

To scale up school feeding programs to a national level, Ghana faces three critical challenges. First, there will need to be a consensus among government agencies on the value of school feeding programs in reducing malnutrition. Second – a point raised by several interviewees – a single ministry will need to take responsibility for school feeding programs. Third, the necessary financing will need to be found. Below these topics will briefly be described and assessed.

First, various ministers, as well as the President, have emphasized the potential role of school feeding programs in reducing malnutrition. In consultations with officials and donors, it was not clear that this view is shared amongst all parties. It is not yet clear whether school feeding programs will be part of Ghana Poverty Reduction Strategy for 2006-2010.

Second, it appears that the Ministry of Education has now taken ownership of the NEPAD School Feeding Program. The Ministry of Education has secured a commitment of funding from the Ministry of Finance and Economic Planning for the NEPAD pilot (described in section 3.4) with a planned start in September 2005. The total cost for the pilot is ¢1 billion ($111,000) for one school in each of the 10 regions for a total of 1840 children.

This leads to the third challenge: funding school feeding programs. The total cost for the five year NEPAD initiative is estimated to be $474 million.[20] Even if the Ministry of Education has taken ownership of the initiative, this ministry alone cannot finance school feeding programs for the whole of Ghana. Other ministries, NGOs and donors will need to work together to finance the program.

Although the NEPAD initiative is very expensive and will have to fight to obtain the necessary resource commitments, it may represent a first step towards the establishment of a nationwide school feeding program. Additionally, the NEPAD program stands to benefit greatly from the current Ashanti Region Pilot Program. In principle, as the Ashanti pilot program extends its reach through grassroots expansion, the NEPAD program's top-down extension approach will begin to permeate the rest of the country, and at some point in the future the two will meet in the middle. This scenario represents possibly the best way for school feeding programs to reach children throughout the country.

[20] Ghana – NEPAD School Feeding Program. Revised Summary of Programme Cost over Five Years. This is an average full feeding cost per child a day $0.46.

Appendix 1 - Recommendation of the UN Task Force on Hunger

1. Move from political commitment to action
    a. Advocate political action to meet intergovernmental agreements to end hunger.
    b. Strengthen the contribution of donor countries and national governments to activities that combat hunger.
    c. Improve public awareness of hunger issues and strengthen advocacy organizations.
    d. Strengthen developing country organizations that deal with poverty reduction and hunger.
    e. Strengthen accurate data collection, monitoring, and evaluation.

2. Reform policies and create an enabling environment
    a. Promote an integrated policy approach to hunger reduction.
    b. Restore budgetary priority to the agricultural and rural sectors.
    c. Building developing country capacity to achieve the Hunger Goal.
    d. Link nutritional and agricultural interventions.
    e. Increase poor people's access to land and other productive resources.
    f. Empower women and girls.
    g. Strengthen agricultural and nutrition research.
    h. Remove internal and regional barriers to agricultural trade.
    i. Increase the effectiveness of donor agencies' hunger-related programming.
    j. Create a vibrant partnership to ensure effective policy implementation.

3. Increase the agricultural productivity of food-insecure farmers
    a. Improve soil health.
    b. Improve and expand small-scale water management.
    c. Improve access to better seeds and other planting material.
    d. Diversify on-farm enterprises with high-value products.
    e. Establish effective agricultural extension services.

4. Improve nutrition for the chronically hungry and vulnerable
    a. Promote mother and infant nutrition.
    b. Reduce malnutrition among children less than five years of age.
    c. Reduce malnutrition among school-age children and adolescents.
    d. Reduce vitamin and mineral deficiencies
    e. Reduce the prevalence of infectious diseases that contribute to malnutrition.

5. Reduce vulnerability of the acute hungry through productive safety nets
    a. Build and strengthen national and local early warning systems.
    b. Build and strengthen national and local capacity to respond to emergencies.
    c. Invest in productive safety nets to protect the poorest from short-term shocks and to reduce long-term food insecurity.

6. Increase incomes and make markets work for the poor

a. Invest in and maintain market-related infrastructure.
b. Develop networks of small rural input traders.
c. Improve access to financial services for the poor and food-insecure.
d. Provide and enforce a sound legal and regulatory framework.
e. Strengthen the bargaining power of the rural and urban poor in labor markets.
f. Ensure access to market information for the poor.
g. Promote and strengthen community and farmer associations.
h. Promote alternative sources of employment and income.

7. Restore and conserve the natural resources essential for food security
    a. Help communities and households restore or enhance natural resources.
    b. Secure local ownership, access, and management rights to forests, fisheries, and rangelands.
    c. Develop natural resource-based “green enterprises”.
    d. Pay poor rural communities for environmental services.

Appendix 2 - List of sources consulted

Government Organizations

Ministry of Health
- Dr. Edward Addai, Head, Monitoring and Evaluation

Ministry of Food and Agriculture
- Emmanuel Aggrey-Fynn, Director, Statistics, Research and Information Directorate

Ministry of Education
- Honorable Mrs. Angelina Baiden-Amissah, Deputy Minister of Education and Sports

Department for International Development (DFID)
- Emma Spicer, Deputy Head of Office, Ghana
- Ben Davies, Rural Livelihoods Advisor

Ejisu-Juaben District Assembly
- Y.A. Afrifa, District Chief Executive
- R.K. Sambu, District Coordinating Director
- Padmore Mensah, Deputy District Coordinating Director
- Ellen Ofosu, District Health Representative
- Ja Osuagima, District School Health Program Coordinator

Ejura- Sekyedumase District Assembly
- Fabian Bellieb, District Director of Education
- Sarpong Siaw, District Coordinating Director

Ejura- Sekyedumase District Health Management Team
- Ben Kusi, Disease Control Officer
- Eliizabeth Tidana, District Public Health Nurse
- Samuel Ofosu, Accountant
- Simon Mireku, District Nutritionist

Gbanyomni Community
- Food Management Committee
- School Management Committee
- Primary School Head Teacher
- Chief

Ghana Health Services, Ashanti Region
- Abenaa Akuamoa-Boateng, Regional Nutrition Officer
- Dr. Kyei Faried, Regional Senior Medical Officer, Public Health

Janjori-Kukuo Community
- Preschool Management Committee
- Primary School Management Committee
- Junior Secondary School Management Committee

Sekyedumase Preschool Management Committee

NGOs and Multilateral Organizations

Asanteman Council/Promoting Partnerships with Traditional Authorities Project
- Owusu Mensah Agyei, Finance Manager
- Johnson Osei Hwedieh, Chief of Staff
- Osei Tutu, Procurement Manager

Catholic Relief Services
- David Orth-Moore, Country Representative - Accra
- Daniel Ayugane, Head of Programs - Tamale
- Ubald Sabogu, Manager of School Feeding Programs - Tamale

The Longevity Project
- Anna Bannerman-Richter, Executive Director

Opportunities Industrialization Centres International (OICI)
- Carla Dominique Denizard, Country Representative, OICI-Ghana
- Dr. John Nene-Osom Azu, Program Technical Advisor and Assistant Country Representative
- Leticia Adu-Danso, Program Officer

World Food Programme
- Trudy Bower Pirinis, Director/Representative
- Frances Kumankuma, Director, Tamale Sub-Office

Technical Organizations

Food Research Institute
- Dr. Paa-Nii T. Johnson, Head of Processing and Engineering

Maternal and Child Health Hospital, Kumasi
- Dr. Ahmed Yacub, Medical Superintendent
- Diana Oduro Barnieh, Nutritionist in Charge

Nature Conservation Research Center
- John Mason, Director

Quality Protein Maize Working Group
- Wilburforce [[?]], Country Coordinator, Self Help
- B.D. Dzah, Sasakawa Global 2000, Ministry of Food and Agriculture

Technoserve
- Dr. Charles Nornoo, former head of Monitoring and Evaluation

Unilever

- Moses Cofie, Business Manager, Unilever Ghana Ltd.
- Dr. Herbert Smorenburg, Head, Unilever Health Institute Africa

University of Ghana, Legon; Trade and Investment Program for a Competitive Export Economy

- Dr. George T.M. Kwadzo, Agricultural Policy Specialist

Appendix 3 - Phase I Preschool Feeding Program Cost Breakdown

YEAR	Year 0	Year 1	Year 2	Year 3	Year 4	Total
REVENUES						
A. Parents	**5,535,000**	**5,535,000**	**5,535,000**	**5,535,000**	**5,535,000**	**27,675,000**
Meal Fees	*5,535,000*	*5,535,000*	*5,535,000*	*5,535,000*	*5,535,000*	*27,675,000*
B. Community	**-**	**-**	**-**	**-**	**-**	**-**
C. District	**-**	**-**	**-**	**-**	**-**	**-**
TOTAL REVENUES (A+B+C)	**5,535,000**	**5,535,000**	**5,535,000**	**5,535,000**	**5,535,000**	**27,675,000**
	$ 608	$ 608	$ 608	$ 608	$ 608	$ 3,041
COSTS						
D. Capital Costs						
1. Procurement	**-**	**-**	**-**	**-**	**-**	**-**
2. Storage	**10,000,000**	**-**	**-**	**-**	**-**	**10,000,000**
Storeroom Construction	*10,000,000*	-	-	-	-	*10,000,000*
3. Preparation	**10,034,750**	**-**	**-**	**-**	**-**	**10,034,750**
Kitchen Building	*10,000,000*	-	-	-	-	*10,000,000*
Stove	-	-	-	-	-	-
Cooking Equipment & Utensils	*34,750*	-	-	-	-	*34,750*
Clean Water Source	-	-	-	-	-	-
4. Feeding	**11,052,500**	**-**	**-**	**-**	**-**	**11,052,500**
Serving & Eating Area	*10,000,000*	-	-	-	-	*10,000,000*
Sanitation Area	*1,000,000*	-	-	-	-	*1,000,000*
Eating Utensils	*52,500*	-	-	-	-	*52,500*
5. Monitoring & Evaluation	**-**	**-**	**-**	**-**	**-**	**-**
Child Health Monitoring Equipment	-	-	-	-	-	-
Subtotal D	**31,087,250**	**-**	**-**	**-**	**-**	**31,087,250**
E. Operation & Maintenance Costs						
1. Procurement	**22,462,588**	**22,462,588**	**22,462,588**	**22,462,588**	**22,462,588**	**112,312,938**
Foodstuffs	*22,170,221*	*22,170,221*	*22,170,221*	*22,170,221*	*22,170,221*	*110,851,106*
Deworming Medication	*204,750*	*204,750*	*204,750*	*204,750*	*204,750*	*1,023,750*
Fuel	*87,616*	*87,616*	*87,616*	*87,616*	*87,616*	*438,082*
Labor	-	-	-	-	-	-
2. Storage	**1,000,000**	**1,000,000**	**1,000,000**	**1,000,000**	**1,000,000**	**5,000,000**
Storeroom Maintenance	*1,000,000*	*1,000,000*	*1,000,000*	*1,000,000*	*1,000,000*	*5,000,000*
Labor	-	-	-	-	-	-
3. Preparation	**4,652,966**	**4,652,966**	**4,652,966**	**4,652,966**	**4,652,966**	**23,264,832**
Kitchen Maintenance	*2,006,950*	*2,006,950*	*2,006,950*	*2,006,950*	*2,006,950*	*10,034,750*
Grain Processing	*280,373*	*280,373*	*280,373*	*280,373*	*280,373*	*1,401,863*
Labor	*2,365,644*	*2,365,644*	*2,365,644*	*2,365,644*	*2,365,644*	*11,828,219*
4. Feeding	**2,210,500**	**2,210,500**	**2,210,500**	**2,210,500**	**2,210,500**	**11,052,500**
Maintenance	*2,210,500*	*2,210,500*	*2,210,500*	*2,210,500*	*2,210,500*	*11,052,500*
Labor	-	-	-	-	-	-
5. Monitoring & Evaluation	**-**	**-**	**-**	**-**	**-**	**-**
Labor	-	-	-	-	-	-
Subtotal E	**30,326,054**	**30,326,054**	**30,326,054**	**30,326,054**	**30,326,054**	**151,630,270**
TOTAL COSTS (D+E)	**61,413,304**	**30,326,054**	**30,326,054**	**30,326,054**	**30,326,054**	**182,717,520**
	$ 6,749	$ 3,333	$ 3,333	$ 3,333	$ 3,333	$ 20,079
BALANCE	**(55,878,304)**	**(24,791,054)**	**(24,791,054)**	**(24,791,054)**	**(24,791,054)**	**(155,042,520)**
BALANCE IN USD	$ (6,140)	$ (2,724)	$ (2,724)	$ (2,724)	$ (2,724)	$ (17,038)
						Average
COST PER MEAL	**2,774**	**1,370**	**1,370**	**1,370**	**1,370**	**1,651**
COST PER MEAL IN USD	$ 0.30	$ 0.15	$ 0.15	$ 0.15	$ 0.15	$ 0.18
COST PER CHILD PER DAY	**5,548**	**2,739**	**2,739**	**2,739**	**2,739**	**3,301**
COST PER CHILD PER DAY IN USD	$ 0.61	$ 0.30	$ 0.30	$ 0.30	$ 0.30	$ 0.36

Assumptions are outlined in Table 6: Input Data for Phase I Cost Analysis

Appendix 4 - Phase I Primary School Feeding Program Cost Breakdown

YEAR	Year 0	Year 1	Year 2	Year 3	Year 4	Total
REVENUES						
A. Parents	**18,000,000**	**18,000,000**	**18,000,000**	**18,000,000**	**18,000,000**	**90,000,000**
Meal Fees	*18,000,000*	*18,000,000*	*18,000,000*	*18,000,000*	*18,000,000*	*90,000,000*
B. Community	**-**	**-**	**-**	**-**	**-**	**-**
C. District	**-**	**-**	**-**	**-**	**-**	**-**
TOTAL REVENUES (A+B+C)	**18,000,000**	**18,000,000**	**18,000,000**	**18,000,000**	**18,000,000**	**90,000,000**
	$ 1,978	$ 1,978	$ 1,978	$ 1,978	$ 1,978	$ 9,890
COSTS						
D. Capital Costs						
1. Procurement	**-**	**-**	**-**	**-**	**-**	**-**
2. Storage	**10,000,000**	**-**	**-**	**-**	**-**	**10,000,000**
Storeroom Construction	*10,000,000*	-	-	-	-	*10,000,000*
3. Preparation	**10,034,750**	**-**	**-**	**-**	**-**	**10,034,750**
Kitchen Building	*10,000,000*	-	-	-	-	*10,000,000*
Stove	-	-	-	-	-	-
Cooking Equipment & Utensils	*34,750*	-	-	-	-	*34,750*
Clean Water Source	-	-	-	-	-	-
4. Feeding	**11,052,500**	**-**	**-**	**-**	**-**	**11,052,500**
Serving & Eating Area	*10,000,000*	-	-	-	-	*10,000,000*
Sanitation Area	*1,000,000*	-	-	-	-	*1,000,000*
Eating Utensils	*52,500*	-	-	-	-	*52,500*
5. Monitoring & Evaluation	**-**	**-**	**-**	**-**	**-**	**-**
Child Health Monitoring Equipment	-	-	-	-	-	-
Subtotal D	**31,087,250**	**-**	**-**	**-**	**-**	**31,087,250**
E. Operation & Maintenance Costs						
1. Procurement	**36,601,106**	**36,601,106**	**36,601,106**	**36,601,106**	**36,601,106**	**183,005,529**
Foodstuffs	*36,049,140*	*36,049,140*	*36,049,140*	*36,049,140*	*36,049,140*	*180,245,700*
Deworming Medication	*409,500*	*409,500*	*409,500*	*409,500*	*409,500*	*2,047,500*
Fuel	*142,466*	*142,466*	*142,466*	*142,466*	*142,466*	*712,329*
Labor	-	-	-	-	-	-
2. Storage	**1,000,000**	**1,000,000**	**1,000,000**	**1,000,000**	**1,000,000**	**5,000,000**
Storeroom Maintenance	*1,000,000*	*1,000,000*	*1,000,000*	*1,000,000*	*1,000,000*	*5,000,000*
Labor	-	-	-	-	-	-
3. Preparation	**6,309,416**	**6,309,416**	**6,309,416**	**6,309,416**	**6,309,416**	**31,547,079**
Kitchen Maintenance	*2,006,950*	*2,006,950*	*2,006,950*	*2,006,950*	*2,006,950*	*10,034,750*
Grain Processing	*455,890*	*455,890*	*455,890*	*455,890*	*455,890*	*2,279,452*
Labor	*3,846,575*	*3,846,575*	*3,846,575*	*3,846,575*	*3,846,575*	*19,232,877*
4. Feeding	**2,210,500**	**2,210,500**	**2,210,500**	**2,210,500**	**2,210,500**	**11,052,500**
Maintenance	*2,210,500*	*2,210,500*	*2,210,500*	*2,210,500*	*2,210,500*	*11,052,500*
Labor	-	-	-	-	-	-
5. Monitoring & Evaluation	**-**	**-**	**-**	**-**	**-**	**-**
Labor	-	-	-	-	-	-
Subtotal E	**46,121,022**	**46,121,022**	**46,121,022**	**46,121,022**	**46,121,022**	**230,605,108**
TOTAL COSTS (D+E)	**77,208,272**	**46,121,022**	**46,121,022**	**46,121,022**	**46,121,022**	**261,692,358**
	$ 8,484	$ 5,068	$ 5,068	$ 5,068	$ 5,068	$ 28,757
BALANCE	**(59,208,272)**	**(28,121,022)**	**(28,121,022)**	**(28,121,022)**	**(28,121,022)**	**(171,692,358)**
BALANCE IN USD	$ (6,506)	$ (3,090)	$ (3,090)	$ (3,090)	$ (3,090)	$ (18,867)
						Average
COST PER MEAL	**4,289**	**2,562**	**2,562**	**2,562**	**2,562**	**2,908**
COST PER MEAL IN USD	$ 0.47	$ 0.28	$ 0.28	$ 0.28	$ 0.28	$ 0.32
COST PER CHILD PER DAY	**4,289**	**2,562**	**2,562**	**2,562**	**2,562**	**2,908**
COST PER CHILD PER DAY IN USD	$ 0.47	$ 0.28	$ 0.28	$ 0.28	$ 0.28	$ 0.32

Assumptions are outlined in Table 6: Input Data for Phase I Cost Analysis

Appendix 5 - Phase II District School Feeding Program Cost Breakdown

REGION: Ashanti
DISTRICT: Ejura-Sekyedumase

YEAR	Year 0	Year 1	Year 2	Year 3	Year 4	Total
REVENUES						
A. Parents	**1,952,973,750**	**1,952,973,750**	**1,952,973,750**	**1,952,973,750**	**1,952,973,750**	**9,764,868,750**
Pre-School Meal Fees	*581,636,250*	*581,636,250*	*581,636,250*	*581,636,250*	*581,636,250*	*2,908,181,250*
Primary School Meal Fees	*1,371,337,500*	*1,371,337,500*	*1,371,337,500*	*1,371,337,500*	*1,371,337,500*	*6,856,687,500*
B. Communities	**-**	**-**	**-**	**-**	**-**	**-**
C. District	**150,000,000**	**150,000,000**	**150,000,000**	**150,000,000**	**150,000,000**	**750,000,000**
Common Fund Allocation to SFP	*150,000,000*	*150,000,000*	*150,000,000*	*150,000,000*	*150,000,000*	*750,000,000*
TOTAL REVENUES (A+B+C)	**2,102,973,750**	**2,102,973,750**	**2,102,973,750**	**2,102,973,750**	**2,102,973,750**	**10,514,868,750**
	$ 231,096	$ 231,096	$ 231,096	$ 231,096	$ 231,096	$ 1,155,480
COSTS						
D. Capital Costs						
1. Procurement	**-**	**-**	**-**	**-**	**-**	**-**
2. District Storage	**-**	**-**	**-**	**-**	**-**	**-**
Warehouse	-	-	-	-	-	-
3. Distribution	**-**	**-**	**-**	**-**	**-**	**-**
4. Local Storage	**1,050,000,000**	**-**	**-**	**-**	**-**	**1,050,000,000**
Storeroom	*1,050,000,000*	-	-	-	-	*1,050,000,000*
5. Preparation	**1,053,648,750**	**-**	**-**	**-**	**-**	**1,053,648,750**
Kitchen Area	*1,050,000,000*	-	-	-	-	*1,050,000,000*
Cooking Stove	-	-	-	-	-	-
Cooking Equipment & Utensils	*3,648,750*	-	-	-	-	*3,648,750*
Clean Water	-	-	-	-	-	-
6. Feeding	**1,160,512,500**	**-**	**-**	**-**	**-**	**1,160,512,500**
Serving & Eating Area	*1,050,000,000*	-	-	-	-	*1,050,000,000*
Sanitation Area	*105,000,000*	-	-	-	-	*105,000,000*
Serving & Eating Utensils	*5,512,500*	-	-	-	-	*5,512,500*
7. Monitoring & Evaluation	**-**	**-**	**-**	**-**	**-**	**-**
Child Health Monitoring Equipment	-	-	-	-	-	-
Subtotal D	**3,264,161,250**	**-**	**-**	**-**	**-**	**3,264,161,250**
E. Operation & Maintenance Costs						
1. Procurement	**5,155,119,527**	**5,155,119,527**	**5,155,119,527**	**5,155,119,527**	**5,155,119,527**	**25,775,597,636**
Foodstuffs	*5,076,139,485*	*5,076,139,485*	*5,076,139,485*	*5,076,139,485*	*5,076,139,485*	*25,380,697,427*
Deworming Medication	*52,713,741*	*52,713,741*	*52,713,741*	*52,713,741*	*52,713,741*	*263,568,703*
Fuel	*25,786,301*	*25,786,301*	*25,786,301*	*25,786,301*	*25,786,301*	*128,931,507*
District Labor	*480,000*	*480,000*	*480,000*	*480,000*	*480,000*	*2,400,000*
Local Labor	-	-	-	-	-	-
2. District Storage	**12,220,000**	**12,220,000**	**12,220,000**	**12,220,000**	**12,220,000**	**61,100,000**
Warehouse Maintenance	-	-	-	-	-	-
Labor	*12,220,000*	*12,220,000*	*12,220,000*	*12,220,000*	*12,220,000*	*61,100,000*
3. Distribution	**12,000,000**	**12,000,000**	**12,000,000**	**12,000,000**	**12,000,000**	**60,000,000**
Transport (Vehicle + Labor)	*12,000,000*	*12,000,000*	*12,000,000*	*12,000,000*	*12,000,000*	*60,000,000*
4. Local Storage	**105,000,000**	**105,000,000**	**105,000,000**	**105,000,000**	**105,000,000**	**525,000,000**
Storeroom Maintenance	*105,000,000*	*105,000,000*	*105,000,000*	*105,000,000*	*105,000,000*	*525,000,000*
Labor	-	-	-	-	-	-
5. Preparation	**948,217,969**	**948,217,969**	**948,217,969**	**948,217,969**	**948,217,969**	**4,741,089,846**
Kitchen Maintenance	*210,729,750*	*210,729,750*	*210,729,750*	*210,729,750*	*210,729,750*	*1,053,648,750*
Grain Processing	*41,258,082*	*41,258,082*	*41,258,082*	*41,258,082*	*41,258,082*	*206,290,411*
Labor	*696,230,137*	*696,230,137*	*696,230,137*	*696,230,137*	*696,230,137*	*3,481,150,685*
6. Feeding	**232,102,500**	**232,102,500**	**232,102,500**	**232,102,500**	**232,102,500**	**1,160,512,500**
Maintenance	*232,102,500*	*232,102,500*	*232,102,500*	*232,102,500*	*232,102,500*	*1,160,512,500*
Labor	-	-	-	-	-	-
7. Monitoring & Evaluation	**-**	**-**	**-**	**-**	**-**	**-**
Labor	-	-	-	-	-	-
Subtotal E	**6,464,659,996**	**6,464,659,996**	**6,464,659,996**	**6,464,659,996**	**6,464,659,996**	**32,323,299,982**
TOTAL COSTS (D+E)	**9,728,821,246**	**6,464,659,996**	**6,464,659,996**	**6,464,659,996**	**6,464,659,996**	**35,587,461,232**
	$ 1,069,101	$ 710,402	$ 710,402	$ 710,402	$ 710,402	$ 3,910,710
BALANCE	**(7,625,847,496)**	**(4,361,686,246)**	**(4,361,686,246)**	**(4,361,686,246)**	**(4,361,686,246)**	**(25,072,592,482)**
BALANCE IN USD	$ (838,005)	$ (479,306)	$ (479,306)	$ (479,306)	$ (479,306)	**$ (2,755,230)**
						Average
COST PER MEAL	**2,631**	**1,748**	**1,748**	**1,748**	**1,748**	**1,925**
COST PER MEAL IN USD	$ 0.29	$ 0.19	$ 0.19	$ 0.19	$ 0.19	$ 0.21
COST PER CHILD PER DAY	**3,838**	**2,551**	**2,551**	**2,551**	**2,551**	**2,808**
COST PER CHILD PER DAY IN USD	$ 0.42	$ 0.28	$ 0.28	$ 0.28	$ 0.28	$ 0.31

Assumptions are outlined in:

- Table 12: Phase II Assumptions for Costing of School Feeding Programs
- Table 6: Input Data for Phase I Cost Analysis
- Cost are shared for storage, kitchen and eating area if the community has both a pre-and a primary schools
- Primary schools are only in communities that also have preschools.

Appendix 6 - Phase II Ashanti Region School Feeding Program Cost Breakdown

REGIONAL SCHOOL FEEDING PROGRAM COST BREAKDOWN

REGION: Ashanti

YEAR	Year 0	Year 1	Year 2	Year 3	Year 4	Total
REVENUES						
A. Parents	**94,427,287,500**	**94,427,287,500**	**94,427,287,500**	**94,427,287,500**	**94,427,287,500**	**472,136,437,500**
Pre-School Meal Fees	*28,122,412,500*	*28,122,412,500*	*28,122,412,500*	*28,122,412,500*	*28,122,412,500*	*140,612,062,500*
Primary School Meal Fees	*66,304,875,000*	*66,304,875,000*	*66,304,875,000*	*66,304,875,000*	*66,304,875,000*	*331,524,375,000*
B. Communities	-	-	-	-	-	-
C. District	**3,150,000,000**	**3,150,000,000**	**3,150,000,000**	**3,150,000,000**	**3,150,000,000**	**15,750,000,000**
Common Fund Allocation to SFP	*3,150,000,000*	*3,150,000,000*	*3,150,000,000*	*3,150,000,000*	*3,150,000,000*	*15,750,000,000*
D. Region	-	-	-	-	-	-
Annual Contribution to SFP	-	-	-	-	-	-
TOTAL REVENUES (A+B+C+D)	**97,577,287,500**	**97,577,287,500**	**97,577,287,500**	**97,577,287,500**	**97,577,287,500**	**487,886,437,500**
	$ 10,722,779	$ 10,722,779	$ 10,722,779	$ 10,722,779	$ 10,722,779	**$ 53,613,894**
COSTS						
E. Capital Costs						
1. Procurement	-	-	-	-	-	-
2. District Storage	-	-	-	-	-	-
Warehouse	-	-	-	-	-	-
3. Distribution	-	-	-	-	-	-
4. Local Storage	**50,808,333,333**	-	-	-	-	**50,808,333,333**
Storeroom	*50,808,333,333*	-	-	-	-	*50,808,333,333*
5. Preparation	**50,984,892,292**	-	-	-	-	**50,984,892,292**
Kitchen Area	*50,808,333,333*	-	-	-	-	*50,808,333,333*
Cooking Stove	-	-	-	-	-	-
Cooking Equipment & Utensils	*176,558,958*	-	-	-	-	*176,558,958*
Clean Water	-	-	-	-	-	-
6. Feeding	**56,155,910,417**	-	-	-	-	**56,155,910,417**
Serving & Eating Area	*50,808,333,333*	-	-	-	-	*50,808,333,333*
Sanitation Area	*5,080,833,333*	-	-	-	-	*5,080,833,333*
Serving & Eating Utensils	*266,743,750*	-	-	-	-	*266,743,750*
7. Monitoring & Evaluation	-	-	-	-	-	-
Child Health Monitoring Equipment	-	-	-	-	-	-
Subtotal E	**157,949,136,042**	-	-	-	-	**157,949,136,042**
F. Operation & Maintenance Costs						
1. Procurement	**248,716,621,961**	**248,716,621,961**	**248,716,621,961**	**248,716,621,961**	**248,716,621,961**	**1,243,583,109,806**
Foodstuffs	*245,433,960,681*	*245,433,960,681*	*245,433,960,681*	*245,433,960,681*	*245,433,960,681*	*1,227,169,803,405*
Deworming Medication	*2,548,736,531*	*2,548,736,531*	*2,548,736,531*	*2,548,736,531*	*2,548,736,531*	*12,743,682,656*
Fuel	*723,844,749*	*723,844,749*	*723,844,749*	*723,844,749*	*723,844,749*	*3,619,223,744*
District Labor	*10,080,000*	*10,080,000*	*10,080,000*	*10,080,000*	*10,080,000*	*50,400,000*
Local Labor	-	-	-	-	-	-
2. District Storage	**256,620,000**	**256,620,000**	**256,620,000**	**256,620,000**	**256,620,000**	**1,283,100,000**
Warehouse Maintenance	-	-	-	-	-	-
Labor	*256,620,000*	*256,620,000*	*256,620,000*	*256,620,000*	*256,620,000*	*1,283,100,000*
3. Distribution	**252,000,000**	**252,000,000**	**252,000,000**	**252,000,000**	**252,000,000**	**1,260,000,000**
Transport (Vehicle + Labor)	*252,000,000*	*252,000,000*	*252,000,000*	*252,000,000*	*252,000,000*	*1,260,000,000*
4. Local Storage	**5,080,833,333**	**5,080,833,333**	**5,080,833,333**	**5,080,833,333**	**5,080,833,333**	**25,404,166,667**
Storeroom Maintenance	*5,080,833,333*	*5,080,833,333*	*5,080,833,333*	*5,080,833,333*	*5,080,833,333*	*25,404,166,667*
Labor	-	-	-	-	-	-
5. Preparation	**45,907,859,143**	**45,907,859,143**	**45,907,859,143**	**45,907,859,143**	**45,907,859,143**	**229,539,295,716**
Kitchen Maintenance	*10,196,978,458*	*10,196,978,458*	*10,196,978,458*	*10,196,978,458*	*10,196,978,458*	*50,984,892,292*
Grain Processing	*1,997,811,507*	*1,997,811,507*	*1,997,811,507*	*1,997,811,507*	*1,997,811,507*	*9,989,057,534*
Labor	*33,713,069,178*	*33,713,069,178*	*33,713,069,178*	*33,713,069,178*	*33,713,069,178*	*168,565,345,890*
6. Feeding	**11,231,182,083**	**11,231,182,083**	**11,231,182,083**	**11,231,182,083**	**11,231,182,083**	**56,155,910,417**
Maintenance	*11,231,182,083*	*11,231,182,083*	*11,231,182,083*	*11,231,182,083*	*11,231,182,083*	*56,155,910,417*
Labor	-	-	-	-	-	-
7. Monitoring & Evaluation	-	-	-	-	-	-
Labor	-	-	-	-	-	-
Subtotal F	**311,445,116,521**	**311,445,116,521**	**311,445,116,521**	**311,445,116,521**	**311,445,116,521**	**1,557,225,582,605**
TOTAL COSTS (E+F)	**469,394,252,563**	**311,445,116,521**	**311,445,116,521**	**311,445,116,521**	**311,445,116,521**	**1,715,174,718,647**
	$ 51,581,786	$ 34,224,738	$ 34,224,738	$ 34,224,738	$ 34,224,738	**$ 188,480,738**
BALANCE	**(371,816,965,063)**	**(213,867,829,021)**	**(213,867,829,021)**	**(213,867,829,021)**	**(213,867,829,021)**	**(1,227,288,281,147)**
BALANCE IN USD	$ (40,859,007)	$ (23,501,959)	$ (23,501,959)	$ (23,501,959)	$ (23,501,959)	**$ (134,866,844)**
						Average
COST PER MEAL	**2,625**	**1,742**	**1,742**	**1,742**	**1,742**	**1,919**
COST PER MEAL IN USD	$ 0.29	$ 0.19	$ 0.19	$ 0.19	$ 0.19	$ 0.21
COST PER CHILD PER DAY	**3,830**	**2,541**	**2,541**	**2,541**	**2,541**	**2,799**
COST PER CHILD PER DAY IN USD	$ 0.42	$ 0.28	$ 0.28	$ 0.28	$ 0.28	$ 0.31

Appendix 7 - Bibliography

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Appendix 8 - One Page Summary of Costs and Benefits of SFPs

Benefits from school feeding programs:

Direct Health Benefits	Example	Source of information
Reduction in stunting	From 47% to 15%	WFP[1]
Increase in nourished children	From 55% to 80%	WFP[1]
Reduction in malnutrition	From 43% to 25% over two years	WFP[2]
Educational Benefits		
Increased enrolment in schools	From 68% to 83% in seven years	CRS[3]
Increased attendance by girls	From 67% to 78% over seven years	CRS[3]
Other Benefits		
Nutritional education amongst the communities	Integrated health programs decreases anemia in pregnant women by 30%	Ashanti[4]
Other Benefits from Using Locally Produced Foods		
Stimulates the local economy by creating demand for agriculture products		
Creates food security in Ghana		
Wider Economic Benefits		
Productivity gains in Ghana	Ghana looses every year $625 million in future productivity because of malnutrition. This number is equivalent to 1.3% of GDP	Profiles 2000[5]

What does it cost:

The cost is only $0.28 per day per child. So for the three quarter million vulnerable children in the Ashanti Region, Ghana it would only cost $23 million per year to ensure that every child has at least one nourishing meal per day.[6]

1 WFP: ..food aid to promote early childhood nutrition and education. Supplementary Feeding and Health and Nutrition. 2003 results
2 WFP: Brief of Janjori Kukuo Community 2005 by WFP, Tamale (under five malnutrition 43% 2003 to 25% Dec 2004)
3 Development Alternatives, Inc: Evaluation of the Impact of Three PL480 Title II Programs on Food Security in Ghana of CSR
4 Nutrition Unit annual Report 2002 by Abenaa Akuamoa-Boateng
5 Profiles 2000 (Investing in Nutrition: investing in the future. Ghana by Ms. Brouwer). Under five represent 14.5% of the total population in Ghana of 20.9m in 2003 (UNICEF). GDP $48bn in 2004.
6 One off setup costs are about 50% of annual running costs.