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# Focused Ethnographic Study – Gomoa East District, Ghana

## November 2016

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*This report presents primary findings and analysis. The information contained within has been analyzed and summarized further in the Optifood/Focused Ethnographic Study Summary report.*

**FEEDING INFANTS AND YOUNG CHILDREN IN GOMOA EAST  
DISTRICT, CENTRAL REGION:**

**A FOCUSED ETHNOGRAPHIC STUDY**

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## EXECUTIVE SUMMARY

This report presents the findings and discussion of a Focused Ethnographic Study (FES) in Gomoa East District, Central Region. The FES used research modules derived from a cultural-ecological framework to examine infant and young child feeding (IYCF) practices, behaviours and beliefs from a household perspective. The examination included exploration of the determinants of Infant and Young Child (IYC) nutrition (physical environment, social environment, social organization, technology and culture) in order to address the following main questions:

- What are infants and young children 6 – 23 months being fed?
- How are caregivers preparing these foods?
- Where and how are caregivers acquiring these foods?
- Why have caregivers selected these particular foods? i.e what are the facilitators and constraints for infant and young child food acquisition and consumption?

Gomoa district is one of 17 administrative districts in the Central Region of Ghana. Gomoa Afransi, the district capital is about 77.0 km from Accra, the national capital. The district is located in the south-eastern part of the Central Region and lies between latitudes 5014' North and 5035' North and longitudes 0022' West and 0054' West. With a total population of 207,071 and population density of 448.3 persons per Km<sup>2</sup> Gomoa East is uniquely situated among other districts, bordered on the north-east by Agona East District, south-west by Gomoa West, east by Awutu-Senya, south by Efutu Municipality and south-east by the Atlantic Ocean. The district lies in two vegetational zones: the coastal savannah and the moist semi-deciduous forest zones and is characterized by two rainy seasons: the major rainy season between March/April to June/July and the minor season between September and November. Gomoa east District is inhabited mainly by people of Gomoa origin who form over 92% of the population, most of whom are Christians. The language of the people is the Gomoa version of Fanti.

The study was conducted in selected communities in the Buduatta sub-district. An initial census to obtain the sample for the dietary study was carried out to identify households with children 6-23. A list of all households with children 6-23 months in the sub-district constituted the sampling frame. The sampling frames were divided into sub-frames to correspond with the four age groups of interest: 6-8 months, 9-11 months, 12-23 months (breast fed), and 12-23 months not breast fed. The FES sample was selected from the master list of eligible children who were not selected originally nor as replacement (for the dietary survey), making sure that the sample was fairly equally distributed among the three geographically clustered communities representing the north, central and southern locations within the sub-district.

Data were collected with specific modules that were designed to provide insights about a range of issues related to household behaviours, including demographic and socioeconomic status (SES) characteristics; a 24-hr dietary recall for the index child and a 7-day household food record; food acquisition and preparation; estimated food expenditure; perceptions

about value dimensions related to health, cost, child acceptance, ease of acquisition and ease of preparation and perceptions about factors that influence IYC feeding; food and feeding-related problems, challenges and solutions; and effects of seasonality on IYC and family food management. Data analysis was predominantly qualitative with some quantitative applications where appropriate.

The demographic analysis indicated that the majority (50%) of the 32 caregiver-respondents were aged between 20 – 29 years and all but 2 had any formal schooling with the majority (56%) having had junior high school education. About half of the respondents were self-employed (petty trading) and about a third were farmers. About 13% claimed to be unemployed. Household sizes ranged between 3-15 members with an average of 6 members. About 78% of households earned income from trading, 72% earned income from agricultural farm produce and more than a third relied on remittances. About 20% of households had incomes of GHC200.00 (\$75.00) or less per month whilst almost 50% had incomes between GHC200.00 and GHC500.00. Majority of households own some livestock. Public taps/stand pipes were the main source of drinking water for 78% of households. Similarly, 78% reported not having latrines within their premises. Majority (84%) of households had access to electricity in their dwellings and the main source of fuel was firewood (56%) and charcoal (38%).

In terms of IYC feeding, we discovered a definable “core IYC foods” for which there was strong consensus. The existence of the concept of “special IYC foods” is viewed as important for future intervention planning. The IYC core consists of porridges (mainly prepared from maize and millet), banku, rice and fish, with secondary core foods including fufu, milk and several vegetable-based soups and stews. Fruits were seldom reported to be consumed nor were considered as part of the cultural core. Concurrent with the use of special IYC foods, which continued to 23 months of age in some families, we found that children are generally integrated into the family diet at about one year onwards. The findings show that frequency of feeding of complementary foods was generally low across all age groups but especially in the 6 – 11 month age group. On the other hand dietary diversity was adequate for all children in the 9 – 23 month age group except 1. Of concern is the low dietary diversity of the diets of the 6 – 8 months old majority of whom consumed foods from just 1 – 2 food groups.

Some measure of food provisioning is realized through own production and this is by far the preferred source. Foods in the IYC and household diet however come from multiple sources and caregivers give consideration to several factors in their purchase decisions. Foods that are purchased either using cash or on credit are acquired from outdoor markets, small local shops, vendors, hawkers and neighbours. Several arrangements within the household exist for household food purchasing decisions with mothers emerging as primary decision makers on what is purchased for the IYC. Caregivers appear to be favourably inclined towards crediting food for their IYC and find this an acceptable strategy for meeting their IYC food needs. These findings suggest that a positive environment exists for the acquisition of special IYC foods by caregivers: they make the decisions on what to feed and actually do the buying of foods for their children.

Household economic organization places a premium responsibility on maternal caregivers for the acquisition of family and IYC foods through home production and purchase. This is in addition to obtaining water and fuel for cooking, as well as for other household needs. Thus, her responsibilities cover the full range from acquisition through preparation to feeding. Given these multiple sectors of responsibility, caregiver activities in relation to IYC diet create a situation in which income-earning activities to acquire money to purchase food affect the time and other resources she has available for food preparation and feeding of IYC. This conflicting situation of balancing child care and earning incomes to feed the household was often cited as a potential source of worry and stress as caregivers struggle to perform their roles.

An important finding is that caregivers' ideas about the attributes of healthy IYC foods and diets share some important commonalities with received wisdom on IYCF. These commonalities include a sense of the importance of balancing dietary components; a notion of the preventive power of certain foods; and the ability of certain foods to supply energy and support growth (in the view of caregivers by "building" or "making blood"). There is evidence that caregivers in Gomoa East not only understood the relationship of food quality to child survival and growth they were also strongly committed to providing their IYC with the best foods they could afford. A considerable concordance was documented between cultural constructs and dietary practices but there is a major gap between how women want to feed their children and what they were able to give them. The gap is due to several factors mainly to do with inadequate production to meet household needs, seasonal food insecurity due to inadequate economic resources to purchase foods during the periods of food scarcity as well as of vital ingredients that must necessarily be purchased. Preparing less complex dishes was one of the coping mechanisms in food insecure months and caregivers indicated that they buffered IYC from food insecurity by skipping meals or eating less themselves. However, in spite of these efforts, their buffering does not compensate for the loss of diet quality and quantity that is experienced during the lean season.

With respect to beliefs and knowledge that affect practices of caregivers the findings show that in addition to generally good knowledge about nutrition caregivers were strongly committed to their view that what children eat affects their health and growth. They also have well-developed ideas about food hygiene and the importance of protecting food from contaminants. Gomoa East caregivers appear to have absorbed much sound information about the health-giving properties of particular foods and most demonstrated considerable knowledge of technical nutritional concepts. The majority were familiar with the term "vitamins" and food fortification. Some gaps in knowledge and practice were also identified. The most significant weakness is the belief among a few that IYC should not be fed "solid" or "heavy" foods till they start walking or crawling lest this will actually prevent them from doing so. The impact of this belief is evident in the less than ideal feeding practices of younger IYC. Another significant weakness is the unsafe storage of food after initial preparation. Safe storage of left-overs without refrigeration is a serious challenge and preparing food just before feeding may not be feasible given caregivers' time constraints and the lack of access to stoves or other quick methods for preparing food. Thus the extent to which storage practices affect child health and nutritional status by increasing diarrhoeal disease needs to be examined through appropriate research.

In conclusion, the study has yielded important insights about current IYC feeding behaviours and practices and enabled the identification of appropriate interventions to address IYC diet inadequacies and malnutrition.

# CHAPTER 1: INTRODUCTION AND BACKGROUND

## Introduction

Optimal child feeding practices are essential to growth, health and development during infancy and early childhood. Under nutrition is an underlying factor in 53% of children's deaths globally accounting for more than a third of child deaths. The immediate consequences of poor nutrition during the early formative years include significant morbidity, mortality and delayed mental and motor development. In the long term, early nutritional deficits are linked to impairment in intellectual performance, work capacity, reproductive outcome and overall health during adolescence and adulthood. It is well documented that the period from conception to 23 months of age is a critical window for the promotion of optimal growth, health and behavioral development (WHO, 2010). Inappropriate feeding practices during this period can have profound consequences for the growth, development and survival of infants and children.

Statistics from the 2012 State of the World's Children report indicate that about 40% of children in Sub-Saharan Africa are moderately to severely stunted (UNICEF, 2012). Over the past two decades, the prevalence of childhood stunting has hovered around 30% in Ghana, leading to the country's inclusion, in 2008, in the list of 36 high-burden countries for malnutrition (GSS et al., 2009; Black et al., 2008). Ghana also has unacceptable rates of underweight and wasting as well as a high burden of micronutrient deficiencies among children with childhood anemia rate in excess of 70%.

Despite progress in economic growth and poverty reduction over the past decade, critical food security and nutrition problems still persist with the three northern regions having the greatest burden. As many as 1.2 million Ghanaians are considered food insecure and chronic under-nutrition, though decreasing in the past five years still affects about a quarter of Ghanaian children under 5 (GSS et al., 2012). The recent 2014 Ghana Demographic and Health Survey (GDHS), however shows that there are considerable gains in efforts to reduce the rates of malnutrition although regional and urban/rural disparities still remain (GSS et al., 2015). Prevalence of stunting, underweight and wasting are down from the 2008 GDHS estimates of 28%, 14% and 8% to 19%, 11% and 5% for stunting, underweight and wasting respectively. Significantly, of the four regions with the highest prevalence rates of stunting, the Central, Eastern and Upper East regions saw marked reductions from the 2008 estimates of 34%, 38% and 36% to 12%, 21% and 22% respectively. Estimates for the Northern region still remain high at 33%. Whilst anemia prevalence has also reduced from 78% to 66%, rates for the three northern regions and the Central Region remain unchanged at over 70%. The indications are that other micronutrient deficiencies are likely to be highly prevalent.

Child malnutrition and particularly stunting and micronutrient deficiencies, primarily result from diets which do not meet energy and nutrient requirements to support the rapid growth of infants and young children (IYC). The 2008 GDHS indicate that the majority of infants and young children aged 6 – 23 months in Ghana are not being fed appropriately. Overall only

36% of IYC meet the minimum IYCF standards. The 2014 GDHS paints a more dismal picture. Using the minimum acceptable diet indicator to assess adequacy of IYC feeding practices, only 13% of 6 – 23 month old children meet the criteria for being fed appropriately for their age. The breakdown by age group shows the most vulnerable to be infants 6 – 11 months i.e 6% for the 6 – 8 month group and 10% for the 9 – 11 month age group. The promoting, protecting and supporting of optimal breastfeeding together with appropriate complementary feeding are recognized as key public health strategies for child survival. Continued efforts are therefore needed to understand the myriad of social, cultural and economic influences on child feeding practices in order to develop promising and sustainable interventions to improve the feeding of infants and young children in Ghana and especially those living in rural communities.

## **Background**

USAID/Ghana aims to improve infant and young child (IYC) feeding through strengthening linkages between agriculture and nutrition. One of the first steps in this regard is to identify strategies to improve the nutritional quality of the diet based on locally available foods. USAID/Ghana requested GAIN (Global Alliance for Improved Nutrition) to conduct a Focused Ethnographic Study (FES) (Peltó and Armar-Klemesú, 2010; Peltó and Armar-Klemesú, 2014) and dietary analysis using the Optifood Linear Modelling Tool (Ferguson et al., 2006) to identify a set of evidence-based, population-specific, food-based recommendations (FBRs) that can be promoted to improve the nutritional status of young children in farming communities of Northern and Southern Ghana. The results can also inform behaviour change communication strategies and the need for alternative interventions to meet nutrient requirements, including delivery of home fortification and/or support for fortified complementary foods.

The FES and dietary/Optifoods analysis are two related, but separate activities. The first activity is the completion of a FES which is the formative/landscape analysis aimed at understanding the cultural, social and economic contexts of infant and young child feeding behaviours from the household and marketing perspectives. The second activity is a cross-sectional dietary survey aimed at determining the gap between actual nutrient intakes and physiological requirements as well as collection of other necessary the Optifood analysis. Each of these activities involves multiple sub-activities, which are described separately in Chapter 2 on the study methodology. This report is focused on the FES carried out in the Gomoa East District of the Central Region.

## **Aim and objectives of study**

The main aim of this study is to identify strategies, based on locally available foods, to improve the nutritional quality of the diet of infants and young children in Ghana. In order to address the above aim the FES specifically seeks to answer the following questions:

- What are infants and young children 6 – 23 months being fed?
- How are caregivers preparing these foods
- Where and how are caregivers acquiring these foods?

- Why have caregivers selected these particular foods? i.e what are the facilitators and constraints (barriers) for infant and young child food acquisition and consumption?

A focused ethnographic study (FES) as recommended by GAIN was implemented in households with children 6-23 months in selected communities of Gomoa East District to establish household food consumption behaviours and feeding profile of infants. The holistic and modular nature of the FES methodology made it suitable for the landscape/formative research as it provides in-depth insights into all aspects of IYC feeding behaviours and their related factors. The FES integrated survey type and classic ethnographic methods to generate both quantitative and qualitative data from the sampled population. The study utilized the GAIN FES protocols in data collection. The modules used were those adapted from the original generic modules used to address similar data needs of the landscape analysis in previous studies in Kenya (Pelto and Armar-Klemesu, 2013a, 2013b; Thuita and Pelto, 2014). The rationale and theoretical underpinnings of the FES methodology have been presented in detail in the previous FES reports and is summarized here in the context of this study.

### **The Focused Ethnography Study Approach: Rationale, methodological and theoretical underpinning**

A FES is a study that is designed to answer a set of questions that are required by an agency, policy-makers, program planners, or by project implementation teams in order to make decisions about future actions with respect to a social, public health or nutrition intervention. The Focused Ethnographic Study (FES) of Infant and Young Child Feeding (FES-IYCF) was explicitly developed by GAIN to meet the need for a tool that would provide in-depth information about household behaviors (and local marketing conditions) in a geographic area that could be used to guide planning and decision-making regarding interventions aimed at improving infant and young child nutrition.

Focused ethnography can be used for multiple purposes related to identifying nutrition interventions, identifying potential bottle-necks that are likely to affect the success of an intervention; and providing data to inform the design and development of communication strategies and content for behavior change communication (BCC). The FES methodology has the following key features:

1. It uses a mixed method approach to obtain and analyze quantitative and qualitative data on feeding patterns and practices in children 6-23 months of age, in the context of their households and communities.
2. It relies heavily on in-depth interviewing on a range of topics that affect household management of infant and young child feeding. It also uses structured, survey-type questions and techniques drawn from cognitive anthropology to round out the picture that emerges from in-depth interviews.
3. It is based on small samples, which are intensively interviewed. Representativeness is achieved first through careful sampling (based on local census data) and then on “saturation” – the situation in which no new information or insights are obtained with further interviews. In the examination of narrowly delimited topics in relatively

homogenous communities, saturation can occur with less than 25 respondents. Typically it is achieved in qualitative research with samples of 30-35 respondents (Pelto, 2013).

The theoretical underpinning of the FES-IYC is derived from cultural-ecological theory, which uses a holistic, systems-based framework to examine and interpret bio-cultural phenomena. In our case, the subject of concern is nutrition in infants and young children. The model places biological features of nutrition at the center. The status of these features in a given population or a given household are based, to a large extent, on diet, which is the primary source of the nutrients that are required to meet these needs.<sup>1</sup> In reality this is an over simplification because other factors, in addition to nutrient consumption, also affect nutritional status, most notably levels of enteric disease and individual differences in requirements.

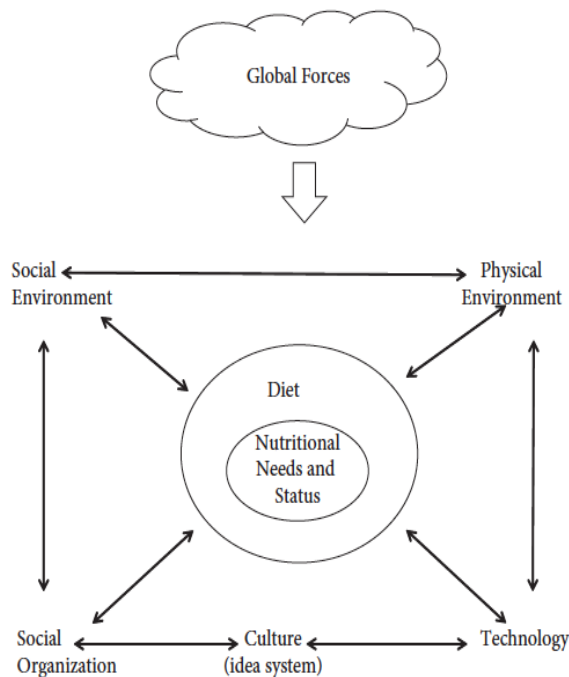


Figure 1 An ecological model of food and nutrition. Redrawn with modifications from Jerome, Kandel, and Pelto (1980).

<sup>1</sup> The Optifood studies determined the extent to which nutrient needs could be met within existing diets.



Surrounding the dietary core, the FES-IYC studies are organized to obtain critical data about each of the sectors of determinants of IYCF. In the scientific literature, the evidence for the contributions of these sectors to IYC feeding and nutrition have been amassed over decades through a large body of social and biological research. In the FES the determinants are classified into 5 main components that come together at the household level to affect infant and young child nutrition: i) physical environment (venues where IYC foods are potentially available to households and the means of access to these venues, ii) social environment (e.g. external markets, social programs, other sources of support outside the household), iii) technology (facilities available in the household for food preparation and storage, iv) social organization (e.g. economic conditions, household demographic features and composition, women's work and time allocation) and v) culture (e.g. beliefs, knowledge, values). These listed items are exemplary rather than exhaustive. For each of these areas we relied on exploratory, open-ended discussions with respondents to fill out the picture of relevant factors and to collect data about them. The interview modules are designed to elicit information about all of these sectors within the context of asking about infant and young child feeding practices and beliefs.

### **Study purpose and specific objectives**

In the study in Gomoa East District, we sought to understand IYC feeding within the context of rural farming households who are dependent mainly on subsistence farming for their livelihoods and food. The modifications we made to the generic modules of the FES were intended to capture some of the important dimensions of feeding and caring for infants in this challenging environment, including the influence of seasonality. With this in mind the overarching purpose of this FES was to undertake a landscape analysis with a view to profiling feeding practices of infants and young children and the cultural, behavioral and household factors that influence these practices in Gomoa East District. The following were the specific objectives for the FES.

1. Establish the feeding and dietary practices and patterns, among children 6-23 months
2. Assess the knowledge, attitudes and perceptions of mothers/caregivers on the nutrition and health value of complementary foods and the influence on food selection.
3. Establish sources and acquisition of the commonly consumed local foods and methods of processing, preparation and preservation.
4. Determine the challenges/constraints encountered by the mothers in feeding the children, including the effects of seasonality.
5. Establish the food and feeding-related problems/challenges experienced by the caregivers of children aged 6-23 months.

In answering these objectives, the FES will provide in depth insights into the factors affecting the feeding of infants and young children in Gomoa East. It is expected that the findings will inform the design of programs that will improve complementary feeding among infants and young children in Ghana in general and in southern Ghana in particular.

## CHAPTER 2: STUDY METHODOLOGY

### Study design

The study was designed to assess the knowledge and behavioral environment at the household level for purposes of improving the diets of infants and young children 6 to 23 months old in Gomoa East. The study followed the basic design features of the Focused Ethnographic Study: *Assessing the behavioral and local market environment for improving the diets of infants and young children 6 to 23 months old* (Pelto and Armar-Klemesu, 2010). We used two protocols that explore household behavior from the generic tool set designed under the auspices of GAIN. In Phase 1, a set of 7 modules was used to interview Caregiver Key Informants. In Phase 2, another 7 modules were employed in interviews with Caregiver-Respondents. These protocols are the modified versions applied in the latter Kenyan studies conducted in Marsabit, Isiolo and Turkana (Thuita and Pelto, 2014).

The Key Informant (KI) interviews were carried out in order to gain a broad overview of issues related to IYC feeding and care in Gomoa East. One of the modules, a “free listing” exercise, was used to identify culturally salient “Core IYC Foods” and “Secondary Core IYC Foods.” Other modules provided general information on food preparation and feeding practices; sources of food acquisition; effects of seasonality on IYC and family food management; types of problems faced by caregivers of IYC; food and nutrition problems of IYC; and health and food perceptions. Eight caregivers with children aged 6 – 23 months were interviewed.

The Caregiver-Respondent modules were applied in interviews with 32 caregiver-respondents, with children aged 6 to 23 months. These modules were designed to provide data and insights about a range of issues related to household behaviors, including demographic and SES characteristics; a 24-hour dietary recall for the index child and a 7-day household food consumption data; food acquisition and preparation; estimated weekly food expenditure; perceptions about value dimensions related to health and food; perceptions about factors that influence IYC feeding; food and feeding-related problems, challenges and solutions.

### Sample and sampling procedure

The sampling procedure entailed recruiting respondents to fill caregiver-respondent categories based on pre-defined sub-groups of the 6-23 month age range. The sample for the FES was drawn from the larger sample of respondents identified as eligible for the quantitative dietary survey but who were not selected for the survey. The procedure for the sample selection is described in detail in the companion report (Brouwer et al. 2015). The sampling procedure involved a number of steps, but basically this resulted in the selection of 1 sub-district within Gomoa East District and Gomoa Buduatta sub-district was randomly selected as the study location. A total of 40 caregivers (8 key informants and 32 respondents) were sampled for the study.

To obtain the sample for the dietary survey a census of Buduatta sub-district was carried out to identify households with children 6-23. A list of all households with children 6-23 months in the sub-district constituted the sampling frame. The sampling frames were divided into sub-frames to correspond with the four age groups of interest: 6-8 months, 9-11 months, 12-23 months (breast fed), and 12-23 months not breast fed. Within each sub-frame the required number of eligible children were randomly selected for the dietary survey. The FES sample was selected from the master list of eligible children who were not selected originally nor as replacement (for the dietary survey), making sure that sample was fairly equally distributed among the three geographically clustered communities representing the north, central and southern locations within the sub-district. Table 2.1 shows the sampling of caregiver respondents. This procedure was used for the sampling of the caregiver key informants.

**Table 2.1: Sampling frame for caregiver respondents**

Age group	6 – 8 months		9 – 11 months		12 – 23 months (Breast fed)		12 – 23 months (Not breast fed)		
Cluster	Community	No.	Community	No.	Community	No.	Community	No.	Total
1	Ekwamkrom	1	Ekwamkrom	1	Mangoase	2	Brofoyeduru	2	
	Brofoyeduru	1	Brofoyedru	1			Mangoase	2	
	Mangoase	1							
	<b>Sub total</b>	<b>3</b>		<b>2</b>		<b>2</b>		<b>4</b>	<b>11</b>
2	Odumase	3	Kristo Asafo	1	Odumase	3	Odambo	1	
			Odambo	1			Kwame Kwa	1	
							Esiwukwaa	1	
	<b>Sub Total</b>	<b>3</b>		<b>2</b>		<b>3</b>		<b>3</b>	<b>11</b>
3	Amoanda	1	Amoanda	1	Buduata	3	Amoanda	1	
	Buduata	1	Dominase	3					
	<b>Sub total</b>	<b>2</b>		<b>4</b>		<b>3</b>		<b>1</b>	<b>10</b>
<b>Total</b>		<b>8</b>		<b>8</b>		<b>8</b>		<b>8</b>	<b>32</b>

After confirming a woman's eligibility in relation to the sampling and recruitment criteria, she was asked if she would be willing to be interviewed. Trained research assistants explained to the potential respondents that the interview would involve a lengthy discussion, not just answering a few questions. None of the women who were approached refused to participate. At the initial contact interview, women were also asked whether they would be willing to have the session n recorded. All agreed. After a woman agreed informally to participate she was presented with a written consent form which she signed or thumb-printed. This was the procedure that was stipulated in ethical clearance granted by the Noguchi Memorial Institute for Medical Research Institutional Review Board. A date for the interview was then set.

## **Reconnaissance visit**

Prior to the actual field work, a reconnaissance mission was carried out in Gomoa East District in June 2015. The purpose of the visit was to meet and brief relevant stakeholders about the study and to facilitate the rapid census in target communities. Briefing meetings were held with Officials of the Gomoa East District Administration and the District Director of Health Services and his staff.

## **Training of study team and pretesting tools**

The field data collection teams comprised 4 interviewers and a supervisor. The researchers were recruited competitively mainly from the field of nutrition and were persons with considerable experience in qualitative data collection. Three are natives of the Central Region but all are fluent in Fante/Twi, the local language and English.

The research team received training for 5 days at the Noguchi Memorial Institute in Accra. The team was trained on the FES approach and methods of data collection, procedure of obtaining written informed consent from respondents and ethics in field data collection. Content of the data collection tools (Protocol 1 and 2) was reviewed and discussed thoroughly. Extensive in house practice and role plays were done to familiarize the team with the unique methods used in a FES. Training was followed by pretesting each of the protocols in a field setting. This gave the team opportunity to consolidate their skills of interviewing and recording

## **Data collection**

The FES was implemented in 2 phases. Phase one entailed interviewing 8 key informants. In-depth interviews were using protocol 1 which had 7 modules. The key informant Interviews were designed to provide an overview of issues related to IYC feeding and care in Gomoa East. In the first module of this protocol, a “free listing” exercise was used to identify culturally salient “Core IYC Foods” and “Secondary Core IYC Foods” (refer to discussion in Chapter 3). Other modules provided general information on food preparation and feeding practices; sources of food acquisition; seasonal differences in food availability; types of problems faced by parents of IYC; food and nutrition problems of IYC; and health and food perceptions. Findings from preliminary analysis of these interviews were also used to fine-tune the interview schedule for caregiver-respondents for phase 2.

Phase 2 of the FES involved interviewing caregiver respondents using protocol 2 which had 7 modules. These modules were designed to provide data and insights about a range of issues related to household behaviors including demographic and social-economic characteristics; a 24-hour recall on foods eaten for the index child; food acquisition and preparation; estimated weekly food expenditure; perceptions about value dimensions related to health and food; perceptions about factors that influence IYC feeding; food and feeding-related problems, challenges and solutions; and perceptions about vitamins, fortified foods and micro-nutrient supplements.

Preliminary analysis of the data collected for Phase 1 was undertaken and the results used to modify and fine tune the Phase 2 protocol, provide the list of foods to be used in the food rating exercise as well as additional training for the fieldworkers. The second phase of data collection was devoted to interviews with 32 respondents. All interviews were conducted and recorded in Fante/Twi. Collecting qualitative data depends on establishing and maintaining rapport; working directly, without the aid of a translator, is much better from a methodological perspective. In addition to improving rapport, it also supports a more uniform presentation of the questions that are used to generate the discussion with respondents. With some of the respondents, the interview sessions were very lengthy, requiring as much as four (and in some cases five) hours to complete the full protocol. The average interview, however, lasted about three to four hours. Occasionally the interviewer suggested returning at a later date to complete the discussion, however in every case respondents preferred to continue. The respondents were almost invariably patient and gracious throughout the interview process. The fact that respondents were willing to devote time to the completion of the protocol is a tribute to the skills of the interviewers, the graciousness of the women in the communities, and the advantages of the method over survey approaches to data collection. Because it provides a forum for discussion in which respondents are encouraged to share their opinions and knowledge freely, ethnographic interview techniques are much more pleasant and interesting for both interviewees and interviewers.

The interviewers filled in information on data recording forms that accompany the modules as well as recording the entire interview. They also made notes on the forms of key points to direct their attention to specific parts of the recording during the translation and preparation of transcripts for analysis.

### **Data analysis**

Each of the interviewers was responsible for creating clean data forms and transcripts for her own interviews. As the recordings were in Fanti/Twi and the notes were mainly in English, the preparation of the transcripts involved a combination of translation and transcription. The completed record for each respondent was provided by the interviewers first to the supervisor who thoroughly reviewed and checked for data quality and then to the PI for a second round of data quality assurance.

For the analysis of variables that are amenable to quantitative analysis (including demographic, economic and cognitive mapping data) the data were entered into Excel sheets and/or transported into Statistical Package for Social Sciences (SPSS) for analysis. For the qualitative analyses the transcripts provided the corpus of data for text analysis. In the text analysis, we decided to manually code the variables rather than use a software program. Even though the data base of 40 respondents was relatively large it was feasible to work directly with the transcripts, creating files of statements on specific topics. The analysis began with a review of the transcripts and identification of emerging themes. With this general template, the process of detailed analysis of specific modules was undertaken.

## **Ethical considerations**

Permission was applied for and authorization to carry out the research was granted by the Noguchi Memorial Institute for Medical Research Institutional Review Board (Ethical Clearance Certificate No. NMIMR-IRB CPN 087/13-14). Written consent was obtained from all study participants and thumb prints used for those who were not literate. Consent forms were administered after careful explanation of the purpose of the study, approximate time interviews would take and answering any questions caregivers had. Those who consented signed on the consent form which was also counter-signed by the interviewer. None of the caregivers who were approached refused to participate. Interviewers also sought consent for audio recording of the interviews upfront.

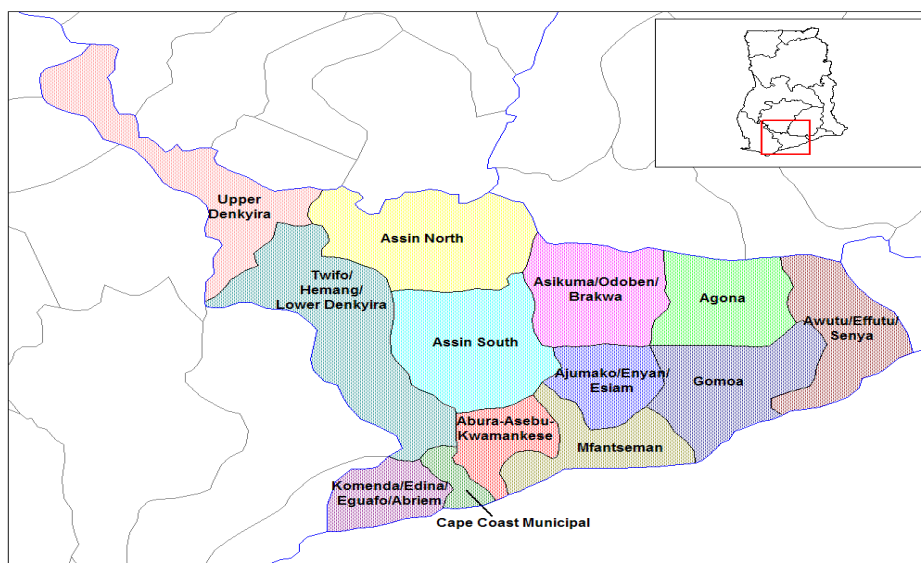
# CHAPTER 3: LIFE IN GOMOA EAST DISTRICT

## PART 1: CHARACTERISTICS OF GOMOA EAST DISTRICT

### Location and size

The Gomoa East district is one of 17 administrative districts of the Central Region of Ghana, with its capital located at Gomoa Afransi, about 77.0 Km from Accra, the national capital. Covering an area of 449.63 square kilometers, Gomoa East district is located in the south-eastern part of the Central Region and situated between latitudes 5014' North and 5035' North and longitudes 0022 West and 0054' West. The district is uniquely situated among other districts, bordered on the North East by Agona East district, on the South-West by Gomoa West, on the East by Awutu-Senya District, and on the South by Efutu Municipality whilst the Atlantic Ocean is found to the south eastern part of the district.

**Figure 3.1: Location of Gomoa district in Northern region**



### Population size and density

The Gomoa East district has a total population of 207,071, representing 6.4% of the regional population according to 2010 Ghana Housing and Population Census. The district's population density has increased from 100.5 persons per km<sup>2</sup> in 2000 to an estimated density of 448.3 persons per km<sup>2</sup> in 2010. About 52.0% of the population live in urban areas while 47.6% are in rural communities. Females account for 52% of the total population. The district has an inter-censal growth rate of 2.5% compared to the national rate of 2.7%.

## **Demographic and socio-cultural characteristics**

The Gomoa East district has an average size household size of 3.8 compared to the regional average of 4.0 and a national average of 4.4 (2010 Population and Housing Census). Major communities in the district include Dampase, Nyanyano, Budumburam, Afransi, Gomoa Fetteh, Gomoa Potsin, Gomoa Dominase and Pomadze. Gomoa East district is inhabited mainly by people of Gomoa origin who forms over 92% of the population with the remaining 8% being the minority tribes and includes people from the Northern and Volta regions and other Akan ethnic groups because of the fishing and cocoa farming activities in the area. The main language spoken in the district is the Gomoa version of the Fanti language though there are other languages including Ga-Dangme, Ewe, Twi and Hausa. Christianity is the main religion of the people. Other religions practiced include Islam and Traditional worshipping.

## **Climate and environmental conditions**

Like other parts of southern Ghana, the Gomoa East district experiences two rainfall seasons. The major rainy season is between March/April to June/July. The minor season is between September and November. The rainfall is generally low along the coast and gradually increases northwards. The rainfall pattern is highly variable with the mean annual rainfall ranging between 70cm and 90cm in the southern coastal plains, which is mainly a coastal savannah and between 90cm and 110cm to the north-western belt with semi-deciduous forest cover (Gomoa District Assembly, 2010). Gomoa East has the benefit of experiencing two wind systems; the south-western monsoon winds, whose direction influence the rainfall pattern and the north-eastern trade winds which herald the dry harmattan season. The effects of the harmattan winds are severely felt between January and February.

Two main vegetational zones - the dry coastal savannah and the moist semi-deciduous forest characterize the district. The coastal savannah consisting of grassland with scattered patches of thickets of shrubs stretches from Gomoa Fetteh in the south eastern part of the district to Langma (Dampase) at the eastern edge bordering the Ga South district. The moist semi-deciduous forest characterised by tall trees, interspersed with grass cover, shrubs and soft woody species is mainly found in the northern parts of the district around Afransi, Amoanda, and Lome areas. At the extreme northern and north-western parts near Gomoa Eshiem and Gomoa Takyiman, parts of the vegetation have the semblance of a tropical rain forest. In this part of the district are found most of the cocoa and coffee farms.

Two prominent forest vegetation belts exist in the district, namely, the Yenku forest reserve and the Yenku afforestation belt. Both are characterised by tall trees which are mostly evergreen throughout the year. These two belts/reserves are located between the Brushing and Pretu rivers which together form a potential agriculture zone of the district. The district is drained by a few rivers and several streams. The major rivers include the Ayensu and Brushing rivers which flow southwards into the Oyibi lagoon in Winneba and the Apan lagoon in Apam respectively. The relief of the land is highly undulated with a number of hills with a maximum height of 215 m at the Yenku hills.

## **Infrastructure**



### ***Electricity***

According to the 2010 Ghana Population and Housing census, 75.1% of the population of the district have access to electricity from the national grid. This is higher than the regional coverage of 66.1%.

### ***Water and sanitation***

The major sources of water in the district include rivers and streams, hand dug wells, ponds/dams, spring water, bore holes and stand pipes. Generally, access to potable drinking water in the district seems better than the regional average (2010 Population and Housing Census; Regional report). For instance, the proportion of the population with access to pipe-borne water and water from bore-holes, pumps and tube well was 52.5% and 18.2% for Gomoa East district compared to 44.2% and 3.5% for Central region. Similarly 16.8% of Gomoa East residents use sachet water as their main source of drinking water compared to the regional average of 8.1 percent. Only 1.7% of the population in the district drink from rivers/streams.

On sanitation, the majority of the population of the district have access to some form of toilet facility (Flushing toilet; water closet (WC)/Kumasi Ventilated Improved Pit Latrine (KVIP)/Pit/Pan, etc). About 18% use the bush or beach as places of convenience. This figure is higher than the regional figure of 15.4%.

### ***Roads and transport***

The district has 42.2 km of feeder roads. The only first class road is the main Accra – Cape Coast highway which passes through the district from Budumburam through Fetteh Kakraba, Akotsi and ending at Gomoa Mpoti. This portion of the road forms part of the Trans-West Africa highway which is asphalted and motorable all year round. It is however, one of the most accident prone roads in Ghana. As one of the beneficiaries of the Millennium Challenge Account (MCA) programme, greater portions of the feeder roads network within the Southern Horticultural belt are bitumen-surfaced, in relatively good condition and motorable for the greater part of the year to facilitate the production and export of crops like pineapple and vegetables (Gomoa East District Assembly, 2010)

### ***Market Infrastructure***

The Gomoa East district has no market centres where major trading and commercial activities are carried out. Farmers and other producers therefore trade in near-by markets in other neighbouring districts such as the Kosoia and Bawjiase markets in Awutu-Senya district or the Agona-Swedru market in the Agona West Municipal assembly. These large markets attract traders from the district. Most communities in the district however have small daily markets.

### ***Economy of the district***

Agriculture is the main economic activity in the district employing about 62.7 percent of the active population. The remaining active population are in the manufacturing sector (13.5%), commerce (11.6%) and the Service sector (12.2%) (Gomoa East District Assembly, 2014). The district has a total agricultural land size of 169.25 m<sup>2</sup> and is noted for the cultivation of crops such as cassava, maize, sugar cane, pineapple, rice, pawpaw, vegetables (tomatoes, pepper, garden eggs, okra), citrus, yam and plantain for domestic use and export (e.g. pineapple, pawpaw and Asian vegetables). The district can boast of a number of large scale farms mainly producing pineapple for export and processed fruit for the local market (Gomoa District Assembly, 2010).

Livestock production (eg. chicken, pigs, cattle) is also practiced in the district mainly on subsistence level. However, there are about 8 commercial farmers employing about 100 people, producing live birds, poultry meat and eggs for local consumption. These include VIMS farms and MORGAN farms located at Gomoa Manso; CEBAS farms at Ojobi, cattle ranches at Pomadze, Kojo-Oku and Bewadze; Piggery at Bewadze and Nsuaem. This sub-sector has great potential in transforming the local economy if the farmers could observe good husbandry practices and are also encouraged to use improved breeds for better stock quality.

Fishing forms the main economic activity of the coastal communities. It employs about 8000 fishermen and 3000 fishmongers. The main fishing communities are Nyanyano, Dampase and Fetteh. The fishermen normally use canoes with either outboard motors or paddles. All kinds of fish are landed depending on the season. The main catch includes herrings, mackerel, lobsters, tuna, shrimps, sole and octopus. Catches made during the season from the district are meant for market centres at Accra, Mankessim, Kasoa, Kumasi and Techiman. In the off-season, most of the fishermen migrate elsewhere both within and outside the country for fishing. Unfortunately, these fishing communities do not have cold stores for storage.

Gold deposits have been found around Oguaakrom leading to small-scale mining activities which employs some of the youth of the district.

### **Food security**

The Gomoa East district produces large quantities of food crops including maize, cassava, plantain and yam. The abundance of fruit crops such as pineapple and pawpaw and vegetable is evidence in the district to serve the nutritional needs of the population. The production of animal products such as meat and eggs also adds to the food stock. Fish is also an important food source in the district especially along the coast. However, the poor and vulnerable in the district face chronic food insecurity due to limited production, and access to financial capital to support farming activities.

Unfavourable weather conditions affect food production and distribution in the district leading to high food prices especially during the lean season. The inability of farmers to store their produce during the periods of glut poses a significant challenge to food security. Measures being put in place to alleviate the problem include provision of small-scale

irrigation schemes and silos to store excess farm produce.

### **Health and nutrition**

Gomoa East district has no district hospital. It however has five (5) health centres at Ojobi, Nyanyano, Obuasi, Buduatta and Okyereko) and five (5) functional Community-based Health and Planning Services (CHP) zones at Potsin, Abasa, Fetteh, Ekwamkrom and Dasum out of twenty (20) demarcated. These health facilities are providing general treatment and preventive health services. Referrals are made to the nearby hospitals at Agona Swedru and Apam. There are also two private orthodox clinics (Saint Gregory Clinic at Budumburam and Andrea Browning Clinic at Fetteh) and two private Maternity homes (N'adom Maternity home and Margo Maternity home) complementing health care delivery in the district. Together, these provide the health infrastructure resources that serve the people of Gomoa East.

In terms of child nutrition, the district routinely records anemia and stunting cases among children under 5 years. The following are some indicators/statistics reported for 10 selected communities in the 2013 Gomoa East Health Directorate report:

- Of 3037 children under 2 years registered 58% attended growth promotion (GP) sessions
- 14% of children less than 2 years attending GP sessions were underweight
- Exclusive breastfeeding rates were generally satisfactory but ranged from as low as 32% in Gomoa Obuasi to 80% in Gomoa Potsin. Whilst all communities except 2 (Obuasi and Ekwamkrom) recorded EBF rates above 50% only 2 (Okyereko and Potsin) achieved the target of 80%. Eighty percent vitamin A coverage was achieved by only 2 communities (Potsin and Dasum) whilst 3 communities had less than 50% coverage.

Measures being taken by the Gomoa East District Health Directorate to improve child nutrition include training workshops to orient Community Health Nurses (CHNs) and volunteers on the use of new functional flip charts developed to enhance Behaviour Change Communication and to equip CHNs with technical knowledge on the recommended breastfeeding and complementary feeding practices for children 0 – 24 months and 2 – 5 years, enhance problem solving and reaching agreement with caregivers on how to optimally feed their children.

### **Education**

Gomoa East district had about 44,768 pupils and students as at 2009. Enrolment at the basic level of education is impressive with female enrolment being quite encouraging. Out of the 33,757 pupils at the basic level females constitute 49% closely nearing a gender parity level. Enrolment at the senior high school level is however very low and can be attributed to the high failure rates at the Basic Education Certificate Examination (BECE). Indeed

performance at the BECE has declined over the period 2009 to 2011, with percentage passes decreasing from 43% in 2009 to 40% in 2011.

Currently, Gomoa East has about 194 basic schools. Most of these are primary and closely matched with their junior high schools. Despite this dismal picture, literacy rate of the population 11 years and older is 81.5% (male=89.9%, female=74.4%, Urban=86.6% Rural=75.9%)

## **PART 2: DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS OF THE SAMPLE**

### **Demographic characteristics**

Table 3.1 presents the demographic characteristics of the 32 women interviewed in the Gomoa East district of the Central region. Majority (50%) of the respondents were aged between 20 – 29 years, while about 31.3% were aged between 30 – 39 years. Two (6.3%) and 4 (12.5%) were aged 40 years or older and less than 20 years, respectively. More than half (56.3%) of the respondents had Junior High School education and a quarter (25%) had primary education. Only 2 respondents had no schooling. For their main occupation, majority (53.1%) of the respondents were self-employed. About 28.0% were farmers while about 13.0% were unemployed. Only one respondent was employed in the formal sector. Majority of the respondents were married while 25.0% were single and had never married. The remaining three respondents were single but cohabiting (6.3%) and separated/divorced (3.1%).

Household sizes ranged between 3 – 15 members with an average of 6 members and 50% of the households reporting between 6 and 10 members. About 25% of households had between 4 – 5 household members and only 6.3% had more than 10 members. Majority of households had 1 or 2 children below six years. Majority (65.6%) of the respondents had one child below six years while 31.3% had two children. Only one respondent had three children below six years.

**Table 3.1: Demographic characteristics of respondents**

<b>Characteristics</b>	<b>Number</b>	<b>Percent</b>
<b>Age of respondents (years)</b>		
<20	4	12.5
20-29	16	50.0
30-39	10	31.3
≥40	2	6.3
<b>Educational level of respondents</b>		
None	2	6.3
Primary	8	25.0
Junior High School	18	56.3
Secondary incomplete	1	3.1
Secondary complete	1	3.1
Missing	2	6.3
<b>Main occupation of respondents</b>		
Formal employment	1	3.1
Self-employed	17	53.1
Farmer	9	28.1
Unemployed	5	15.6
<b>Marital status of respondents</b>		
Married	21	65.6
Single cohabiting	2	6.3
Single-never married	8	25.0
Separated/divorced	1	3.1
<b>Total household size</b>		
4-5	8	25.0
5	6	18.8
6-10	16	50.0
>10	2	6.3
<b>Number of respondents children</b>		
1	9	28.1
2	10	31.3
3	5	15.6
4	6	18.7
5	1	3.1
6	1	3.1
<b>Number of children under 6 in household</b>		
1	15	46.9
2	15	46.9
3	1	3.3
7	1	3.1
<b>Number of Respondents children under 6</b>		

1	21	65.6
2	10	31.3
3	1	3.1
<b>Age of index child (months)</b>		
6-8	8	25
9-11	8	25
12-23 (Breast feeding)	8	25
12-23 (Not breast feeding)	8	25
<b>Sex of index child</b>		
Male	15	46.9
Female	17	53.1

### Caregivers' occupation and hours worked per week

Table 3.2 presents the occupational distribution of respondents and hours worked per week. On the average, respondents who reported being self-employed and who were in the majority, spent between 21-72 hours per week (mean = 40.2 hours). The eight respondents who were farmers spent 34.1 hours per week working on the farm. The only formal sector employee worked for 50 hours per week.

**Table 3.2: Caregivers' occupation and hours worked per week**

Occupation	No. of respondents	Hours worked/week		
		(mean)	Min	Max
Housewife	0	-	-	-
Formal employment	1	50.0	50	50
Self-employed	14	40.2	21	72
Farmer	8	34.1	8	60
Total	23	38.5	8	72

### Socioeconomic profiles of the households

#### *Household economic activities and income*

Results on the sources of income showed that about 72.0% of the households made income from the sale of agricultural produce as shown in Table 3.3. About 78.0% also earned income from business activities in the form of petty trading. Other sources of income mentioned included the sale of livestock (15.6%), formal employment (12.5%), casual labour (21.9%) and donations (37.5%). The mean income of GhC290.0<sup>2</sup> from formal employment was the

<sup>2</sup> GhC1.00 = USD0.36 at time of the study

highest. This was followed by income from business activities (GhC282.0) and sale of livestock (GhC226.25).

**Table 3.3: Mean household monthly income from different economic activities**

Source of income	No. (%)	Mean income (GHC)	Std. Dev
Agricultural farm produce	23 (71.9)	198.00	200.08
Sale of livestock	5 (15.6)	226.25	321.23
Business	25 (78.1)	282.04	307.53
Formal employment	4 (12.5)	290.00	197.65
Casual labour	7 (21.9)	95.71	112.71
Donations	12 (37.5)	69.23	82.23

### ***Income from agriculture***

Close to 72.0% of households engaged in agricultural activities (Table 3.4). Household members involved in agriculture included the caregiver and spouse (8), other household members (8), caregiver, spouse and other household members (4) and husband only (2). The mean monthly income from agricultural farm produce was GhC198.0. The caregiver and husband had a mean income of GhC280.0, followed by the husband only (GhC256.0) and both spouses and other household members (GhC218.0). In reference to the last month preceding the interviews, the agricultural households reported a mean income of GhC172.0. The previous month's reported incomes from agriculture were lower than the monthly figures.

**Table 3.4: Household members involved in agriculture and their earned incomes**

Household member	No.	Monthly (GHC)		Previous month (GHC)	
		Mean	Std. Dev.	Mean	Std. Dev.
Husband	2	265.0	332.0	250.0	354.0
Caregiver + spouse	8	280.0	274.0	272.0	274.0
Caregiver + spouse + other household members	4	218.0	146.0	188.0	149.0
Other household members	8	98.0	67.0	55.0	56.0
<b>Total</b>	<b>23</b>	<b>198.0</b>	<b>200.0</b>	<b>172.0</b>	<b>207.0</b>

Table 3.5 presents the general income levels of respondents' households. Twenty-eight percent of the households reported a monthly income of between GhC201-300. This was followed by about 19.0% who earned between GhC401-500 in a month and 12.5% reporting less than GhC100 in a month; only three households reported a monthly income of more than

GhC1000. With respect to household earnings in the month preceding the interviews, majority (21.9%) of the households reported income levels of GhC401-500. While about 16.0% reported less than GhC100, one household did not earn any income and two reported more than GhC1000.

**Table 3.5: Income levels of households**

<b>Characteristics</b>	<b>No.</b>	<b>Percent</b>
<b>Household income (monthly, GHC)</b>		
Less than 100	4	12.5
101-200	3	9.4
201-300	9	28.1
401-500	6	18.7
601-800	4	12.5
801-1000	3	9.4
1001-1500	2	6.3
1801-1900	1	3.1
<b>Household income (Previous month, GHC)</b>		
Less than 100	5	15.6
101-200	5	15.6
201-300	6	18.7
401-500	7	21.9
601-800	4	12.5
801-1000	2	6.3
1001-1500	1	3.1
1601-1700	1	3.1
No income	1	3.1

### **Ownership of selected material assets by households**

Table 3.6 presents the percentage distribution of ownership of material assets by the surveyed households. The mobile phone is the commonest item owned by the majority (93.8%) of households. This was followed by television (68.9%), radio (50.0%), sewing machine (40.6%) and electric iron (40.6%). Few households owned a car (9.4%), motorbike (3.1%) and a boat with motor (3.1%).

On land ownership, about 81.0 percent (26) of the respondents indicated that their households had access to agricultural lands. About 39.0 percent reported self-owning the land they had access to. Majority (53.8%) reported hiring the land for their agricultural activities. Two (7.7%) households had access to the land on a shared-cropping agreement. The reported land sizes ranged between less than one acre to 20 acres with a mean of 3.0



acres (sd = 3.8). Most (30.8%) had 3 acres while close to 27.0% had access to 1 acre or less. Only about 12.0 percent of the households had access to 5 or more acres of agricultural land.

**Table 3.6: Ownership of assets by households**

<b>Asset</b>	<b>No.</b>	<b>Percent</b>
Mobile phone	30	93.8
Television	22	68.9
Radio	16	50.0
Sewing machine	13	40.6
Electric iron	13	40.6
Box iron	11	34.5
Fridge	6	18.8
Bicycle	5	15.6
Car	3	9.4
Motor	1	3.1
Boat with motor	1	3.1
<b>Land ownership status</b>		
Self-owned	10	38.5
Hired	14	53.9
Other (share cropping)	2	7.7
<b>Size of the land</b>		
≤ 1 acre	7	26.9
2 acres	8	30.8
3 acres	7	26.9
4 acres	1	3.9
≥ 5 acres	3	11.5

### **Ownership of livestock by households**

Twenty-three (72%) households reported owning livestock. Chicken was the most common livestock, owned by 43.8% of households. This was followed by goats (21.9%) and sheep (6.3%)(Table 3.7).

**Table 3.7: Percentage distribution of livestock owned by households**

<b>Livestock</b>	<b>No.</b>	<b>Percent</b>	<b>Mean</b>	<b>Min</b>	<b>Max</b>
Chicken	14	43.8	7	2	20

Goat	7	21.9	5	1	10
Sheep	2	6.3	4	1	7

### Housing condition and access to utilities

Table 3.8 presents the main construction materials used for the walls, floors and roof of dwellings of respondents. Majority (53.1%) of the dwelling structures had concrete walls while 34.4 percent had sandcrete walls. The remaining 12.5 percent had mud walls. Almost all (93.8%) of the structures were roofed with iron sheets, except 2 which had slate. Cement was the main material used for the floor of 93.8% of the dwellings. A few others (6.2%) had mud floors.

Public tap/standpipe was the main source of drinking water for the majority (78.1%) of households. This was followed by 12.5 percent of households with water piped into their dwellings, tube well/borehole (6.2%) and surface water (3.1%). About 84.0 percent of the households had access to electricity for their lighting. More than three-quarters (78.0%) of the households did not have toilet facilities within their premises. Only 5 households (15.6%) had a traditional pit latrine within their dwellings.

Firewood was the most common source of fuel for cooking by majority (56.2%) of the households. About 38.0 percent of the households used charcoal for cooking. Only two households used liquefied petroleum gas (LPG).

**Table 3.8: Housing material conditions and access to utilities**

Housing condition	No.	Percent
<b>Main material for wall</b>		
Concrete	17	53.1
Mud	4	12.5
Sandcrete	11	34.4
<b>Main material for roof</b>		
Iron sheet	30	93.8
Other (slate)	2	6.2
<b>Main material for floor</b>		
Mud/dung	2	6.2
Cement	30	93.8
<b>Main source of drinking water</b>		
Piped into dwelling/yard	4	12.5
Public tap/standpipe	25	78.1
Tube well/borehole	2	6.2
Stream	1	3.1

<b>Source of fuel</b>		
Charcoal	12	37.5
Firewood	18	56.2
LPG/Natural gas	2	6.2
<b>Access to electricity</b>		
% yes	27	84.4
<b>Type of toilet facility within premises</b>		
Flush toilet	1	3.1
VIP toilet	1	3.1
Traditional/pit latrine	5	15.6
None	25	78.1

## Summary and conclusions

This chapter is in two parts. The first part provides an overview of the physical, social and economic context of Gomoa East District. The district lies in two vegetational zones: the Coastal Savannah zone and the moist semi-deciduous zone. Like other parts of southern Ghana, Gomoa East experiences two rainfall seasons. The major rainy season is between March/April to June/July. The minor season is between September and November. The rainfall is generally low along the coast and gradually increases northwards. The rainfall pattern is highly variable with the mean annual rainfall ranging between 70cm and 90cm in the southern coastal plains and between 90cm and 110cm to the north-western belt with semi-deciduous forest cover. The Gomoa are the dominant ethnic group and the majority are Christians. Infrastructure in Gomoa East is relatively satisfactory with majority of inhabitants having access to electricity and potable water. Transportation network is also relatively satisfactory with a trans-national highway running through the district and greater portions of the feeder road network being in relatively good condition and motorable for the greater part of the year. Though the district is classified as a food basket chronic food insecurity is prevalent among the poor and vulnerable. Gomoa East has no district hospital but is served by 5 health centers, 5 functional CHPs zones and 2 private clinics. Health and child welfare indicators are generally satisfactory. Literacy is also satisfactory with 82% of the population 11 years and older being literate.

In the second part of the chapter we present the demographic and socio-economic characteristics of the 32 caregiver-respondents who participated in the FES study. Majority of the women (50%) were aged between 20 – 29 years and the majority had formal schooling up to junior high school. Most of the respondents were self-employed engaging in trading and about less than a third were farmers. Household sizes ranged between 3-15 members with an average of 6 members. Respondents had between 1 and 6 children with an average of 3 children and the most having 1 child below six years. About 78% of households earned income from business activities (mainly trading) and 72% also earned income from agricultural farm produce. About 22% of households had incomes of GHC200.00 (\$75.00) or less per month whilst most (47%) had incomes between GHC200.00 and GHC500.00. The majority (81%) of households reported having access to agricultural land with only 38%

self-owning the said land. Most (72%) households own some livestock: these were mostly chicken (44%), goat (22%) and sheep (6%). The main source of water for most households (78%) was pipe-borne water from public taps and stand pipes. Only 5 (16%) households reported having traditional pit latrine within their premises. Majority of households (84%) had access to electricity in their dwellings and firewood (56%) and charcoal (37%) were the main sources of fuel.

## **CHAPTER 4: INFANT AND YOUNG CHILD FEEDING PRACTICES IN GOMOA EAST**

The purpose of this chapter is to provide a picture of infant and young child feeding practices in the study sites in Gomoa East from both cultural and behavioral perspectives. The section is organized in 3 parts as follows:

- a) Complementary foods in the community: results of the “Free Listing” exercise
- b) Feeding practices of infants and young children
- c) IYC feeding in the context of usual household food consumption

### **PART 1: COMPLEMENTARY FOODS IN THE COMMUNITY – FREE LISTING**

In Phase 1 of the study, we interviewed caregiver key informants to get an inventory of the foods that are considered appropriate for infants and young children from an ‘insiders’ perspective. We sought to know what foods have the highest salience for caregivers as foods for children aged 6 through 23 months. Questions asked helped us generate lists of foods for specific age sub-groups within the range of 6-23 months. Follow-up questions probed for foods the respondent doesn’t give but that other mothers with children the same age as her child in the community might give. The list of foods generated was also used in cognitive mapping exercises with caregiver-respondents in Phase 2 of the study. This involved rating of specific foods in relation to various value dimensions such as healthiness, cost, acceptability etc. To derive the inventory, we used an ethnographic technique known as “free listing” (Romney and Weller, 1988).

Results of the free listing exercise, which was conducted with 8 key informants in the first phase of the study, are presented in Tables 4.1 and 4.2. Results of the food items and the frequency per age group as reported by key informants are shown in Table 4.1. Table 4.2 provides a description of each of these foods.

**Table 4.1: Key informant free listing: Foods For infants and young children (N= 8)**

Name of Food item	Frequency				Total
	6-8	9-11	12-23 (BF)	12-23 (Non-BF)	
Instant milk formula (Nan 1, Nido, Lactogen)	2	1	0	0	3
Cerelac	2	0	0	0	2
Koko (Maize or millet (porridge))	2	1	1	2	6
Wheat porridge	0	0	1	0	1
Oats porridge	0	0	1	0	1
Rice porridge	0	1	0	0	1
Weanimix	1	0	0	0	1
Tombrown	1	1	0	0	2
Mashed kenkey	0	0	0	1	1
Milo	0	0	1	0	1
Rice	1	2	2	2	7
Banku	0	2	2	2	6
Ampesi (Boiled yam, plantain, cocoyam cassava)	0	2	2	1	5
Mpotompoto	0	0	1	0	1
Fufu	0	2	1	2	5
Kokonte (Cassava flour dumpling)	0	0	0	1	1
Light soup	0	2	1	2	5
Palm nut soup	0	2	2	2	6
Groundnut soup	0	0	0	1	1
Tomato stew	0	2	2	2	6
Egg stew	1	1	0	0	2
Agushie stew	0	1	1	0	2
Kontomire stew	0	1	2	1	4
Garden egg stew	0	1	0	1	2
Bean stew	0	0	0	1	1
Beans and gari	0	0	0	2	2
Rice and beans (Waakye)	0	0	0	1	1
Fresh pepper sauce	0	1	0	0	1
Pear	0	0	1	1	2
Pineapple	0	0	0	1	1
Orange	0	0	1	1	2
Banana	0	0	1	0	1
Bread	0	0	1	0	1
Meat pie	0	0	1	0	1
Rock buns	0	0	1	0	1

## Discovering the cultural core foods

The concept of “Cultural Core Foods” has been used for many decades to capture the idea that there are differences from one society to another in the foods that form the basis of local diets, and that these differences have implications for nutrition programme planning and nutrition interventions. In this study we sought to determine whether there are “core foods” for infants and young children. The first set of questions with key informants was intended to yield a picture of their cultural core foods.

The free listing exercise is a cognitive mapping ethnographic research tool, the results of which reveal the “insiders” views about what children eat. The assumptions on which it is based is that the structure of the question will elicit the most central foods – i.e. those that constitute the cultural core. We rely on both salience (the first foods mentioned are assumed to be the most salient) and frequency (the number of key informants who mention them). This combination enables us to distinguish a primary group of foods (the “culture core foods”) and a secondary set of foods, which are also important, which we refer to as the secondary core foods.

Some of the foods elicited in the key informant interviews were mentioned by most of the respondents, suggesting a high level of cultural consensus. Porridges, banku (maize-based dumpling) and rice were universally mentioned, indicating a high salience and therefore a high level of cultural consensus for these foods. A second set of foods elicited through the free listing exercise consists of foods that can be regarded as the secondary core. Foods qualifying as secondary core are fufu (pounded boiled cassava and plantain dumpling), ampesi (boiled sliced yam, plantain, cocoyam or cassava), palm nut and light soups and tomato and kontomire stew. A closer scrutiny of the data also shows that with the exception of rice, porridges were the only foods mentioned by mothers across all the age cohorts. All the other foods were mentioned by mothers of children in the 9 – 11 and 12 – 23 months cohorts. The finding that these foods had the highest salience for caregivers and were also elicited from the key informants indicates that culturally, they are the foundation of diets for infants and young children within the study area. However, the findings also suggest that the feeding of porridges as start-up foods is continued throughout infancy and as children grow older whilst other foods that can be classified as family foods are fed to older infants and young children.

The records of what children are being fed, which were obtained from the sample of caregiver-respondents using a module based on the 24-hour recall method, are shown in Table 4.3 and Table 4.6. A comparison of these behavioral data with the free listing permits us to examine the relationship between one aspect of the cognitive (ideational) component and caregiver IYC behaviors.

**Table 4.2: Description of IYC foods in key informant “free listing” exercise**

<b>Name of Food item</b>	<b>Description</b>
Instant milk formula (Nan 1, Nido, Lactogen)	Instant milk formula prepared by adding warm water.
Cerelac	Branded instant infant cereal porridge made from maize or wheat or millet. Prepared by adding water and if desired, milk to taste.
Koko (Maize or millet porridge)	Porridge made from sieved maize (Koko) or millet (Hausa Koko) dough: sugar and milk (optional) is added; usually eaten on its own or with bread, doughnuts or koose (fried bean cake).
Wheat porridge	
Oats porridge	
Rice porridge	Rice cooked to the consistency of rice pudding with sugar and salt added and sometimes milk; usually eaten with bread.
Weanimix	Porridge made from a mixture of roasted cereals and grains such as maize, soya beans and groundnut milled together; sugar or milk added as optional; usually eaten as breakfast and sometimes with bread.
Tombrown	Roasted maize meal porridge; sugar or milk added as optional; usually eaten as breakfast and sometimes with bread .
Mashed kenkey	Kenkey mashed into watery consistency, with sugar and or milk added to taste; could be eaten chilled (ice kenkey) or at ambient temperature.
Milo	Branded cocoa-based beverage reconstituted with water and added sugar and milk; usually consumed with bread
Rice	Boiled rice consumed with stews (tomato/beans/kontomire) and /fish/ meat/eggs.
Banku	Fermented corn dough (sometimes plus cassava dough) cooked into dumplings and rolled into balls; usually served with stews/soups with fish/meat/eggs or fresh/fried pepper sauce with fish (fried or grilled).
Ampesi (Boiled yam, plantain, cocoyam cassava)	Sliced and boiled in water (with salt) and usually served with kontomire/garden eggs/tomato stew, or thickened soups (palm or groundnut); may also be served with fresh pepper sauce
Mpotompoto	Thick porridge/pottage prepared from cocoyam, yam or potatoes with onions, tomatoes, fish and sometimes added palm oil
Fufu	Pounded boiled yam/plantain/cocoyam/cassava (usually cassava and any of the other staples are pounded together); served with light soup/palm nut soup/groundnut soup with fish, meat and occasionally crabs/cow hide (wele).
Kokonte	Hot very thick porridge-like staple, made from cassava flour and usually consumed with green leafy vegetable (ayoyo), okro, groundnut or palm nut soup
Light soup	Soup prepared from tomatoes, garden eggs, onions and pepper together with fish or meat as the main ingredients; much easier and quicker to prepare and has a more watery consistency hence the name light soup.
Palm nut soup	Loose palm fruits are boiled and pounded in wooden mortar; then palm juice is extracted by adding water and sieving off the palm husks. The juice is added to steamed meat or fish (may be fried, smoked, dried or fresh) and cooked with tomatoes, onions and pepper; the cooked vegetables are ground and added back to the pot till cooked. Cooking of this soup could



	take an average of 2 hours depending on the amount prepared and type of fish/meat used.
Groundnut soup	This soup is the equivalent of palm nut soup, with the palm paste being replaced by ground nut paste.
Tomato stew	Tomato based stew prepared by cooking blended/chopped/ground tomatoes in oil/palm oil with onions and pepper to a thick texture with added fish/meat/eggs; canned pureed tomatoes sometimes replaces fresh tomatoes;
Egg stew	Prepared as in tomato stew but with beaten eggs
Agushie stew	Prepared as in tomato stew but with blended/ground dried melon seeds.
Kontomire stew	Prepared as in tomato stew but with kontomire (cocoyam leaves) usually cut fresh and steamed and cooked in palm oil with salted fermented fish ("koobi"/ "momone"). Other optional ingredients include groundnut paste, "abeduro" (egg pea plant), or "agushi"; usually eaten with staples such as boiled yam, plantains, cocoyam, rice etc. Protein such as fish, meat or eggs may be added.
Garden egg stew	Prepared as in tomato stew but with boiled ground garden eggs; usually cooked in palm oil with added fish or eggs.
Bean stew	As in tomato stew but with cooked beans and usually cooked in palm oil with added fish or eggs; usually served with fried ripe plantain, rice etc.
Beans and gari	Soft boiled beans sometimes enhanced with spiced palm oil/oil (with pepper, onion, tomatoes) and eaten with gari or fried ripe plantain s
Rice and beans (Waakye)	Rice and beans cooked together and normally eaten with tomato stew or shito (fried pepper sauce with powdered fish/shrimps)
Fresh pepper sauce	Pepper, onions and tomatoes are usually ground together in an earthenware pot; this is usually be eaten fresh, however a bit of palm oil may be added to enhance the flavor.
Pear	Fresh fruit
Pineapple	Fresh fruit
Orange	Fresh fruit
Banana	Fresh fruit
Bread	Sometimes eaten with either maize or millet porridge/ mashed kenkey/tom brown/milo/tea
Meat pie	Wheat Floor based pastry with some meat/fish and vegetables sometimes baked or fried
Rock buns	Wheat Floor based pastry

## **PART 2: IYC FEEDING PRACTICES: FOODS CONSUMED IN THE PREVIOUS 24-HOUR PERIOD**

We sought to generate a picture of household food intake patterns with an emphasis on IYC using a qualitative 24-hour recall that included information on what the index child had eaten. An initial question determined if the previous day was a usual day. If it wasn't a usual day, questions focused on the day before since the purpose was to get a picture of typical or usual child dietary patterns.

Caregiver-respondents were asked to describe everything that had been fed to their child in the previous 24 hours. Table 4.3 presents the results for 32 children, aged 6 months to 23 months. Caregivers were asked to report each feeding event separately and sequentially. To qualify as "a feed" at least one hour between events was required. Caregivers were also asked the number of times they breastfed their child and whether the child was being given any supplements

**Table 4.3: Twenty-four hour record of food intake prior to the day of the interview**

<b>ID No.</b>	<b>Age in mths</b>	<b>Meal 1</b>	<b>Meal 2</b>	<b>Meal 3</b>	<b>Meal 4</b>	<b>Meal 5</b>	<b>Meal 6</b>	<b>Meal 7</b>	<b>Breast feeds</b>	<b>Supplement</b>
1	6	<b>Millet porridge + sugar</b>	<b>Millet porridge + sugar</b>	Fufu + palm soup + fish	<b>Millet porridge + sugar</b>				10	No
2	7	<b>Biscuit</b>							15	No
3	7	<i>Mashed kenkey + sugar + Nido milk powder</i>	Banku and kontomire stew + fish						15	Multivitamin syrup, Macrofolin <sup>R</sup> blood tonic
4	8	<i>Rice + kontomire + ground melon seed stew + fish</i>							6	No
5	7	<b>Millet porridge + sugar + Nido milk powder</b>	<b>Millet porridge + sugar + Nido milk powder</b>	<b>Millet porridge + sugar + Nido milk powder</b>					4	B complex, MGP
6	7	<i>Cerelac + Nido milk powder</i>	<i>Mashed kenkey + sugar + Nido milk powder</i>						10	Multivitamin syrup
7	8	<i>Maize porridge + sugar</i>	<i>Maize porridge + sugar</i>						15	No
8	8	<b>Millet porridge + sugar + Cowbell milk powder</b>							6	No
9	11	<b>Millet porridge + sugar</b>	<i>Banku + okro stew + chicken</i>	Banku + fresh pepper + fried fish					12+	No
10	11	Rice + tomato stew + fish	Rice + tomato stew + fish	Rice + tomato stew + fish	Fufu + groundnut soup + fish				7	No
11	10	<i>This way<sup>R</sup> Chocolate drink + Bread</i>	<b>Fried yam</b>	Rice + fish + eggs stew					15	Donewell <sup>R</sup> blood tonic
12	11	<b>Biscuit</b>	<i>Rice + kontomire stew + eggs</i>	Yam + kontomire stew + fish	<i>This way<sup>R</sup> chocolate drink + bread</i>				14	Yes*

13	11	<b>Biscuit</b>	Banku + okro stew + smoked fish	Banku + okro stew + smoked fish					15	Letavit <sup>R</sup> vitamin syrup
14	11	<b>Millet porridge + sugar + koose (fried bean cake)</b>	<b>Rice + macaroni + stew</b>	<i>Banku + okro stew + fish</i>	Fufu + light soup + fish				15	B complex + multivitamin syrup
15	11	<b>Millet porridge + sugar + Cowbell milk powder</b>	<b>Waakye + tomato stew</b>						10	Vitamin B complex syrup
16	10	<b>Millet porridge + sugar</b>	Banku + okro soup + chicken	Banku + okro soup + chicken	<b>Biscuit</b>	<b>Fried egg + vegetable</b>			10	No
17	19	<b>Millet porridge + sugar</b>	Banku + palmtree soup + fish	Fufu + light soup + fish					10	Kidivite <sup>R</sup> vitamin syrup
18	15	<i>Maize porridge + sugar + milk</i>	Jollof rice + smoked mackerel	<i>Chocolate drink</i>	<i>Gari soakings + sugar + Cowbell milk powder</i>				5	Corange <sup>R</sup> blood tonic
19	18	Maize porridge + sugar + Nido milk powder	<i>Banku + kontomire + ground melon seed stew + fish + eggs</i>	Fufu + palm soup + fish					6	Blood tonic
20	19	<b>Millet porridge + sugar</b>	<i>Banku + kontomire stew + fish</i>						12	Supavita <sup>R</sup> multivitamin syrup
21	20	Maize porridge + sugar	Akple (corn flour dumpling) + okro soup + fish	Banku + palmtree soup + fish	<b>Orange</b>	Waakye + fried pepper sauce + fish, shrimp	Fresh cow milk		10	No
22	14	<i>Maize porridge + sugar</i>	<b>Beans + gari</b>	<b>Meat pie</b>					10	Letapex- B Vitamin B complex syrup
23	17	<b>Rice + tomato stew</b>	Fante kenkey + palm nut soup + fish						12	No
24	21	<b>Millet porridge + sugar</b>	Rice balls + groundnut soup + fish	<b>Sugar cane</b>	Rice + Kontomire + melon seeds stew + fish				10	No

25	21	<b>Waakye (Rice + beans) + tomato stew</b>	Banku + kontomire stew + fish						No	No
26	23	<b>Rice + tomato stew</b>	<i>Fresh orange</i>	<b>Polo biscuit</b>	Banku + okro stew + fish	Fufu + palm nut soup + fish			No	Kiddicare <sup>R</sup> vitamin syrup
27	17	<b>Millet porridge + sugar + bread</b>	Banku + kontomire + melon seed stew + fish	Fufu + palm nut soup + fish	<i>Gari soaking + sugar + milo + Cowbell milk powder + biscuits</i>				No	
28	20	<b>Biscuit</b>	<b>Millet porridge + sugar</b>	Rice + tomatoes stew + eggs + fish	Rice + tomatoes stew + eggs + fish	<b>Biscuit</b>	Maize porridge + sugar	<b>Orange</b>	No	Letavit <sup>R</sup> vitamin syrup
29	19	<b>Millet porridge + sugar + bread + koose + doughnuts</b>	<b>Rice + tomato stew</b>	Banku + okro stew + fish					No	No
30	12	<b>Millet porridge + sugar + doughnut</b>	<i>Rice + tomato stew + eggs</i>	<i>Gari soakings + milo + sugar</i>	<b>Millet porridge + sugar + bread</b>	Biscuit			No	Letavit <sup>R</sup> vitamin syrup, Polyfer <sup>R</sup> syrup
31	20	<b>Millet porridge + sugar + biscuits</b>	<b>Rice + tomato stew</b>	Gari soaking + sugar + groundnuts + cowbell powered milk	Fufu + palm soup + fish				No	Vitamin B complex, Blood tonic
32	20	<i>Milo + sugar + + Cowbell milk powered + bread</i>	<i>Waakye (Rice + beans) + tomato stew + fish + shrimp</i>	<b>Biscuit</b>	Gari soaking +sugar + cowbell powdered milk	Fufu + ground nut /kontomire soup + fish			No	No

**Note:**

Age cohorts:

6 – 8 months: ID Nos. 1 – 8

9 – 11 : 9 – 16

12 – 23 BF : 17 – 24

12 – 23 NBF : 25 – 32

Foods in italics are foods specially prepared for the IYC

Foods in bold are foods purchased for the IYC

## Breastfeeding

Due to the selection criteria used 24 of the 32 children were breastfed at the time of data collection. Table 4.4 gives a breakdown of number of times children were breastfed during the previous 24 hours by age cohorts. Overall, most of the children (12 out of 32) were breastfed between 6 – 10 times, ten children were breastfed more than 10 times (majority were in the 9 – 11 month age cohort) and two were breastfed less than 6 times. It must be noted that these are caregivers' recall of breastfeeding contacts made by the infant and these reported frequencies can only be accepted as such. The frequencies are only indicative and do not account for the amount of milk consumed.

**Table 4.4: Breastfeeding times by age cohort**

Age cohorts	Breastfeeding times		
	<i>Less than 6</i> N	<i>6 – 10</i> N	<i>More than 10</i> N
6 – 8	1	4	3
9 – 11	-	3	5
12 – 23 BF	1	5	2
Total	2	12	10

Fifty percent of caregivers (16 out of 32) were giving their children nutritional supplements at the time of the interview. Of those being given supplements, 3 were in the 6- 8 month age cohorts, 5 each were in the 9 - 11 and 12 – 23 (non-breastfed) month age cohorts while 4 were in the 12 – 23 (breastfed) month age cohort. The supplements were mostly various brands of multivitamin syrups and blood tonics.

## Number of feeding events

The term “feeding event” is used to refer to discreet, planned provision of food. The WHO “Guiding Principles for Complementary Feeding of the Breastfed Child” (2003) recommends the following with respect to number of feeding events for breastfed infants and young children: “*For the average healthy breastfed infant, meals of complementary foods should be provided 2-3 times per day at 6-8 months of age and 3-4 times per day at 9-11 and 12-24 months of age, with additional nutritious snacks offered 1-2 times per day, as desired.*”

The data on number of times children in the Gomoa East sample were fed complementary foods in the previous 24 hours is presented in Table 4.5. Fourteen of the feeding events comprised snacks mostly of biscuits/pastry (10), orange (3), sugar cane (1).

**Table 4.5: Number of feeding events by category**

Age cohorts	No. of eating events/Number of children			
	1 N	2 N	3 N	4 N
6 – 8	3	3	1	1
9 – 11	-	1	3	4
12 – 23 BF	-	2	4	2
12 – 23 NBF	-	1	1	6
Total	3	7	9	13

The number of times complementary foods were fed to IYC ranged from a minimum of one for three children in the 6 – 8 month age cohort to a maximum of seven for a child in the 12 – 23 month (non-breastfed) age cohort. The findings show that feeding frequency was generally low across all age groups but more especially for IYC in the 6 – 8 month cohort.

Thus, from a nutritional perspective, caregiver behaviors with respect to breastfeeding is generally favorable. However, the findings also suggest that frequency of feeding of complementary foods may be less than satisfactory and a considerable number of IYC generally appear not to be adequately fed.

### **Dietary composition**

In Table 4.6 we present summaries of the 24-hour food records. The summaries are of the foods consumed (categorized by specific groups), the number of eating events by age cohort and the number of children in each cohort consuming the particular food. Table 4.6 shows that the diet is equally dominated by cereals (millet, maize and rice) and roots and tuber based foods. Porridges, banku (usually with okro stew/soup) and rice (with tomato or Kontomire stew) are consumed as the main staples and are therefore the cultural core IYC foods. Fufu (usually with palmtree soup), Gari (soaked in water with sugar and milk) and cocoa drink (sometimes eaten with bread) make up the secondary core IYC foods. Fruits (consumed by only 4 children) were almost absent from the 24 hour records.



**Table 4.6: Foods consumed by IYC**

Foods consumed	No of eating events/Category				
	Total	6 – 8	9 – 11	12 – 23BF	12 – 23NBF
	N	N	N	N	N
<b>Porridges</b>	<b>30(24)</b>	<b>12(7)</b>	<b>4(4)</b>	<b>7(7)</b>	<b>7(6)</b>
Millet	20(15)	7(3)	4(4)	3(3)	6(5)
Maize	7 (6)	2(1)	-	4(4)	1(1)
Mashed kenkey	2(2)	2(2)	-	-	-
Cerelac	1(1)	1(1)	-	-	-
Banku	18(14)	1(1)	7(4)	6(5)	4(4)
Rice	17(13)	1(1)	6(4)	4(3)	6(5)
Fufu	7(7)	1(1)	2(2)	-	4(4)
Gari	6(6)	-	-	2(2)	4(4)
Rice + beans	4(4)	-	1(1)	1(1)	2(2)
Yam ampesi	1(1)	-	1(1)	-	-
Beans	1(1)	-	-	1(1)	-
Biscuits	10(9)	1(1)	3(3)	-	6(5)
Bread	6(6)	-	2(2)	-	4(4)
Other pastry	3(3)	-	-	1(1)	2(2)
Koose	1(1)	-	-	-	1(1)
Cocoa drinks	5 (5)	-	2(2)	1(1)	2(2)
Orange	3(3)	-	-	1(1)	2(2)
<b>Soups/stews</b>					
Kontomire stew	11(10)	2(2)	2(1)	3(3)	4(4)
Okro soup/stew	14(10)	-	6(4)	6(4)	2(2)
Palmnut soup	8(8)	1(1)	-	4(4)	3(3)
Light soup	2(2)	-	1(1)	1(1)	-
Groundnut soup	3(3)	-	1(1)	1(1)	1(1)
Tomato stew	16(13)	-	6(4)	2(2)	8(7)
Fish	37(23)	3(3)	11(6)	12(7)	11(7)
Egg	5(5)	-	3(3)	-	3(2)
Chicken	3(2)	-	3(2)	-	-
Milk	16(10)	7(3)	1(1)	4(3)	4(3)

Note:

N = No of eating events food was consumed;

Figures in parenthesis ( ) = No. of IYC consuming food

A description of the soups and stews provides a better understanding of the extent to which these accompaniments to the staple foods ensure the dietary adequacy of a meal. Information on food preparation obtained during the Phase 1 interviews together with the listing of ingredients from the 24 hour recall data as well as investigators' local knowledge is used to describe the stews and soups. In Ghanaian cuisine, the basic ingredients for the accompaniments are pepper, onions and tomatoes with an animal source protein, which is usually fish for low-income households. Gomoa East has access to a variety of fish and those commonly used are smoked herrings, mackerel and tuna. There is also copious use of seasonings and spices in addition to salt, the basic seasoning. Dry seasonings, such as Maggi bouillon cubes, were used in almost all stews and soups.

In terms of preparation, vegetables (chopped or ground) are cooked in oil (vegetable or palm oil) for stews. For soups, they are cooked in water and pureed. Stew prepared from only the basic ingredients is tomato stew and soup prepared from the basic ingredients is "light soup". Other stews or soups derive their names from food items that are additional to the basic ingredients. Thus kontomire stew has kontomire leaves added; okro stew has okro and palmtree soup is prepared from the pulp of the palm fruit. Vegetables may be seriously over-cooked during the cooking process resulting in possible loss of nutrients.

In terms of actual consumption patterns, Table 4.6 shows that most of the children (24 out of 32) consumed porridges prepared from maize or millet dough. About half of the children ate banku or rice (14 and 13 out of 32 respectively) with stew. Fufu (prepared from boiled cassava and plantain) with soup was consumed by 7 whilst 6 children ate gari (dry-fried grated cassava), soaked in water with sugar and milk. Other foods consumed included rice and beans (4 children), biscuits (9), bread (6), meat pies and other pastry (3), cocoa drinks (5) and orange (3). It is noteworthy that, ampesi (boiled staple) was eaten by only one IYC.

The most commonly consumed accompaniments to the staples were tomato stew (13), kontomire stew (10), okro stew/soup (10) and palmtree soup (8). For animal source foods, almost all the children consumed fish (23 out of 32), five children had eggs, two had chicken and ten consumed milk (in porridge and soaked gari). We have further summarized the information in Table 4.6 to better clarify IYC consumption of the core foods. As shown in Table 4.7, these core foods are generally consumed at least once by the children consuming them.

**Table 4.7: Mean daily consumption of core foods by IYC**

Foods consumed	% of IYC consuming food and mean daily consumption/age category				
	Total	6 – 8	9 – 11	12 – 23BF	12 – 23NBF
Porridges	75(1.3)	88(1.7)	50(1.0)	88(1.0)	63(1.2)
Banku	44(1.3)	13(1.0)	50(1.4)	63(2.1)	50(2.1)
Rice	41(1.3)	13(1.0)	50(1.5)	38(1.3)	63(1.2)
Fufu	22(1.0)	13(1.0)	25(1.0)	-	50(1.0)
Kontomire stew	31(1.1)	25(1.0)	13(2.0)	38(1.0)	50(1.0)
Okro stew/soup	31(1.4)	-	50(1.5)	50(1.5)	25(1.0)
Tomato stew	41(1.2)	-	50(1.5)	25(1.0)	88(1.1)
Palm nut soup	25(1.0)	13(1.0)	-	50(1.0)	38(1.0)
Fish	72(1.6)	38(1.0)	63(1.8)	88(1.7)	88(1.8)
Milk	31(1.6)	38(2.3)	13(1.0)	38(1.3)	38(1.3)

Note: Figures in parenthesis are average number of time IYC consumed food on recall day

In addition to the content of IYC diets, and the frequency of feeding, it is also instructive to examine IYC meal patterns from the perspective of the amount of diversity in the diet over the course of the day. Are IYC receiving the same foods at every meal or is there some variety from meal to meal? To examine this question, the 24 hour records were further analysed (Table 4.8a) and summarized (Table 4.8b) to allow for assessment of the content and quality of the children’s diets using the Ministry of Health/Ghana Health Service Community Infant and Young Child Feeding Counselling Package (UNICEF, 2013).

Table 4.8a clearly shows that only 3 of the children in the 6 – 8 months cohort consumed foods from at least 4 food groups. The diets of the rest are either monotonous, with the children consuming the same food throughout the day. In contrast, all the children in the 9 – 11 month and 12 – 23 month cohort consumed foods from 4 or more food groups.

Table 4.8b showing children’s consumption from different food groups confirms the inadequacy of the diets of the 6 – 8 months old children with only 3 out of the 8 consuming foods from more than 4 food groups.

**Table 4.8a: Dietary diversity of complementary foods**

ID No	No of meals	No of food grps	Staple foods		Legumes		Vegetables and fruits		Animal/flesh		Fats/oils		Milk/dairy	Cocoa
			What	freq	What	freq	what	freq	what	freq	What	freq	freq	freq
1	4	4	Millet Cassava plantain	3 1 1			Tomato	1	Fish	1	Palm nut	1		
2	1	1	Wheat	1										
3	2	4	Maize	2			Tomato Kontomire	1	Fish	1	Palm oil	1		
4	1	5	Rice	1	Melon seed	1	Tomato Kontomire	1 1	Fish	1	Palm oil	1		
5	3	2	Millet	3						3			3	
6	2	2	Maize	2						2			2	
7	2	1	Maize	2										
8	1	2	Millet	1						1			1	
9	3	4	Millet Maize	1 2			Tomato Okro	2 1	Fish Chicken	1 1	Palm oil	1		
10	4	5	Rice Cassava plantain	3 1 1	Ground nut	1	Tomato	4	Fish	4	Oil	1		
11	3	5	Rice Yam Wheat	1 1 1			Tomato	1	Fish Egg	1 1	Oil	1		1
12	4	5	Rice Yam Wheat	1 1 2			Tomato Kontomire	2 2	Egg Fish	1 1	Palm oil	2		1
13	3	4	Maize Wheat	2 1			Tomato Okro	2 2	Fish	2	Palm oil	2		
14	4	5	Millet Maize Rice Macaroni Cassava plantain	1 1 1 1 1 1	Beans	1	Tomato Okro	3 1	Fish	2	Oil Palm oil	1 1		
15	2	5	Millet Rice	1 1	Beans	1	Tomato	1			Oil	1	1	
16	5	5	Millet Maize Wheat	1 2 1			Tomato Okro	2 2	Chicken Egg	2 1	Palm oil	2		

17	3	4	Millet Maize Cassava Plantain	1 1 1 1			Tomato	2	Fish	2	Palm nut	2		
18	4	5	Maize Rice Cassava	1 1 1			Tomato	1	Fish	1	Oil	1	2	1
19	3	5	Maize Cassava Plantain	2 1 1	Melon seeds	1	Tomato Kontomire	2 1	Fish Egg	2 1	Palm oil		1	
20	2	4	Millet Maize	1 1			Tomato Kontomire	1 1	Fish	1	Pam oil	1		
21	6	4	Maize Rice	3 1	Beans	1	Tomato Orange	2 1	Fish	2	Palm nut	1	1	
22	3	3	Maize Cassava Wheat	1 1 1	Beans	1					Palm oil	1		
23	2	4	Rice Maize	1 1			Tomato	2	Fish	1	Palm nut	1		
24	3	5	Millet Rice	1 2	Melon seeds Ground nut	1 1	Tomato Kontomire	2 1	Fish	2	Palm oil	1		
25	2	5	Maize Rice	1 1	Beans	1	Tomato Kontomire	1 1	Fish	1	Oil Palm oil	1 1		
26	5	4	Maize Rice Cassava Plantain Wheat	1 1 2 1 1			Tomato Okro Orange	3 1 1	Fish	2	Palm nut Palm oil	1 1		
27	4	6	Millet Maize Wheat Cassava Plantain	1 1 2 2 1	Melon seeds	1	Tomato Kontomire	1 1	Fish	2	Palm oil Palm nut	1 1	1	1
28	6	4	Millet Maize Rice Wheat	1 1 2 2			Tomato Orange	1 1	Fish Egg	2 2	Oil Palm nut	2 1		

29	3	5	Millet Maize Rice Wheat	1 1 1 1	Beans	1	Tomato Okro	1 1	Fish	1	Oil Palm oil	1 1		
30	5	5	Millet Rice Wheat Cassava	2 1 3 1			Tomato	1	Egg	1	Oil	1		1
31	4	4	Millet Rice Wheat Cassava Plantain	1 1 1 2 1			Tomato	2	Fish	1	Oil Palm nut	1 1		
32	5	6	Rice Wheat Cassava Plantain	1 2 2 1	Beans Ground nut	1 1	Tomato Kontomire	2 1	Fish	2 2	Oil Palm nut	1 1	2	1

**Table 4.8b: Consumption from different food groups**

Number of food groups	Age cohorts/Number of children			
	6 – 8	9 – 11	12 – 23 BF	12 – 23 NBF
1	2	-	-	-
2	3	-	-	-
3	-	-	1	-
≥ 4	3	8	7	8
<b>Total</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>

### **Core foods in IYC daily diets**

The first part of this section outlines findings of the free listing exercise with key informants in which “Core IYC foods” were identified from a cultural perspective. The results of our examination of “Core IYC Foods” from a behavioral perspective, using the 24-hour dietary recall records to show the number of times that each core food was actually given to children of the 32 caregiver-respondents is tabulated in Table 4.6. Although the sample is small, the results are highly suggestive with respect to the relationship of core IYC foods, as a cultural construct, and caregivers’ behaviors in feeding their children. As alluded to in Part 1 of this chapter, “cultural core foods” reflects more of the general beliefs, traditions and ideals that define local diets in any society. ‘Behavioral core foods’ on the other hand refers to actual practice, which may be determined by several factors, including seasonality in food availability, affordability or even individual preferences. Thus there may be differences between the two when what is considered to be “culturally ideal” for IYC is not affordable or cannot be accessed.

Our findings indicate that the foods that comprise the “core” from a cultural perspective are to a large extent also the “core” foods from a behavioral perspective. This reflects some consonance between the cultural construct and dietary practice. On the day preceding the interview, the majority of the children (75%) ate porridge, about half each ate banku (14 out of 32) or rice (13 out of 32) and a few (7 out of 32) ate fufu . On the other hand, ampesi (boiled yam, plantain etc.), which was classified as a cultural core was consumed by only one child whilst gari, which was not mentioned at all was eaten by 6 children, all in the 12 – 23 months age group. Again wheat-based foods such as bread, biscuits were hardly mentioned as foods for IYC but were consumed by quite a number. It is also noteworthy that rice meals were more often than not specially prepared only for the IYC.

### **PART 3: IYC FEEDING IN THE CONTEXT OF USUAL HOUSEHOLD FOOD CONSUMPTION**

Findings on IYC feeding in relation to foods consumed by the household are presented in this section. To examine this issue, a module that was modified from the typical seven day food frequency recall method was used. A three-part question guide was designed to elicit information from which we could derive further insights about the relationship of family and IYC food use. This question followed immediately after collecting information on the index child’s diet in the previous 24-hours, so the respondent was already primed to structure her response in relation to the child’s diet. The first part



of the question was *“I would like to ask about other foods that your family eats that you have not yet mentioned. I’m going to ask you first to tell me what other foods you eat and then I’ll ask you some other questions about them. Please tell me other foods your family eats.”* The second part of the question was asking the respondent to indicate which household members consumed the food, with a special interest in the IYC. Finally, for each of the foods named through this procedure, the respondent was asked whether those specific foods had been consumed during the past 7-day period and how frequently. Findings are presented in Table 4.9.

**Table 4.9: Foods consumed by family including IYC**

FOODS	No. of households consuming food in past 7 days		
	1 - 2 days	3 - 4 days	≥ 5 days
Maize porridge	2	-	1
Millet porridge	-	-	1
Rice porridge	-	1	-
Banku/akple	4	3	12
Kenkey	4	2	-
Rice	12	6	3
Fufu	5	1	9
Yam	5	3	-
Plantain (unripe)	5	-	-
Plantain (ripe)	2	-	-
Cassava	3	-	-
Gari	5	-	1
Waakye (rice + beans)	3	-	2
Beans	1	-	-
Sweet potato	1	-	-
Tomato stew	10	4	-
Kontomire stew	5	9	2
Okro stew/soup	4	1	2
Garden egg stew	4	-	-
Cabbage stew	-	1	1
Agushie (melon seed) stew	1	-	-
Fresh pepper sauce	2	7	1
Fried pepper sauce	5	1	2
Palm nut soup	8	8	1
Groundnut soup	4	4	-
Light soup	4	3	1
Fish	1	4	20
Chicken	2	-	1
Eggs	3	3	--
Beef	2	-	-
Bush meat (grass cutter)	1	-	-
Bread	1	-	2
Biscuits	-	-	1
Chocolate drink	1	-	1
Fresh groundnut	-	1	-
Boiled fresh corn	2	-	-
Boiled groundnuts	1	-	-
Orange	1	-	3
Coca cola	1	-	-

There are several features of family foods in relation to IYC foods to highlight:

Collectively a total of 38 foods were elicited by the food frequency question. These are the foods that were listed by caregivers as having been prepared for the household but also consumed by the IYC. It is noteworthy that women did not list many different foods (over and above what they had already listed in connection with IYC intake). This indicates that foods for IYC are generally integrated into household diets.

Findings show that overall, consumption of banku and fufu is central in family diets in Gomoa East. These foods together are consumed by more than two thirds of households almost every day of the week. Rice follows banku and fufu, being consumed by nine households 3 or more times a week and twelve households once or twice a week. Ampesi (boiled yam etc.) on the other hand is consumed only once or twice in a week, when the IYC is included. It is noteworthy that porridges hardly feature as family food in the household diet. In terms of accompaniments to the staples, palm nut soup and kontomire stew are the most frequently consumed followed by tomato stew, fresh pepper sauce, groundnut soup and light soup in that order. A comparison of the IYC 24-hour recall and the family foods data confirms our earlier observations regarding the core IYC foods. Most households consume fish on a daily basis in the soups or stews whilst a few had eggs. Fruits hardly feature in the household diet as was also seen in the 24 hour recall. However notably, 3 households ate oranges almost every day of the week in question.

## **Summary and conclusions**

The purpose of this chapter is to provide a picture of infant and young child feeding practices in Gomoa East District from both cultural and behavioral perspectives. This chapter is organized in 3 parts:

Part 1: Identifying complementary foods in the community: Results of the “Free Listing” exercise

Part 2: Feeding practices of IYC: Foods consumed in the previous 24-hour period

Part 3: IYC feeding in the context of usual household food consumption

The data presented in this section demonstrates that caregivers have well-developed constructs about IYC feeding. The findings on feeding behaviors show that IYC are generally integrated into family diets, generally during late infancy. This is evident from both the 24 hour recall and family food consumption records. The concept of special IYC foods, especially for the younger age group (6 – 11 months) is also evident. Thus, the two dynamics of core IYC foods and family foods exist side-by-side in the management of infant and young child feeding in Gomoa East. The data further show that the diets of all but one of the children in the 6 – 8 month old cohort are inadequate in both quantity and quality: they are either monotonous, with the children consuming the same food throughout the day, low in frequency (i.e 1 – 2 meals) or both. The diets of the 12 – 23 month old breastfed children, is generally adequate in diversity but rather low in frequency. In contrast, children in the 9 – 11 month and non breastfed 12 – 23 month cohort generally seemed to be doing well in both frequency and diversity. The findings suggest that the diets of children in the 6 – 8 month age group may be inadequate.

# CHAPTER 5: PREPARING AND STORING FOODS FOR INFANTS AND YOUNG CHILDREN

## PART 1: FOOD PREPARATION

Obtaining information on how IYC foods are being prepared in Gomoa East was a primary purpose of the landscape analysis. To acquire information on how IYC foods are prepared, caregivers were systematically asked about the specific preparation and storage procedures they used for the foods they reported in the 24-hour recall module. To provide a comprehensive framework for the understanding of household food preparation procedures, information on conditions in which food preparation occurs and access to important inputs to food preparation such as access to water and fuel are described. In Gomoa East, sourcing of water and firewood are sole responsibilities of women in addition to general household chores including care of infants and young children. The caregiver-respondents provided simple, clear narratives on how they prepare food.

### How food is prepared and who prepares food

Typically, mothers as primary caregivers prepare food for IYC and are particularly keen on cooking and feeding infants and young children themselves. In their absence, mothers also prepare and leave food to be fed to their children or entrust that responsibility to close relatives who live in the household or nearby. Grandmothers, sisters or older female children in the family were mentioned as close family members who assist in food preparation when the mother is absent or busy and unable to do so herself.

We asked mothers to describe how they prepare some of the foods that were fed to IYC a day prior to the interview. Mothers provided detailed accounts of how the core foods for IYC including porridge, banku and stew, rice and stew and fufu and soup are prepared. We were particularly interested in capturing all aspects of the preparation process and the reasons mothers gave for their actions. In the case of porridges, we sought to find out whether mothers milled/prepared the dough/flour themselves. Their responses are quite revealing. We found that millet porridge (popularly called hausa koko) was always bought ready prepared and was often specially purchased for the IYC. Rice and tomato stew was another meal bought ready prepared and specially purchased for the IYC. Because of the structure of the module, information on ingredients was not obtained for foods that were not home prepared. Mothers' main reasons for feeding their IYC purchased ready prepared foods were 1) for convenience and 2) to prevent wastage when the child does not eat much. The following discourses/quotes illustrate these points:

#### **Millet porridge (hausa koko)**

*R: Yes this is specially purchased for J.*

*I: Why don't you prepare it yourself?*

*R: Oh it is convenient to buy and less costly.*

*I: Why do you say so?*

*R: I can't go and get firewood and buy 50 pesewas worth of corn dough to prepare her koko alone in the morning when I am not ready to cook the family meal, when I can use just 30 pesewas to buy what will be sufficient for her.*

*R: Hausa koko is ready prepared and bought in the mornings so it is more convenient to give him in the morning. I am able to finish my morning chores and take time later in the afternoon to prepare the mashed kenkey porridge.*

### **Rice and tomato stew**

*R: I don't prepare it; I buy it for him.*

*I: Why?*

*R: Because I don't want to waste my money to prepare it for him to waste it, so I rather buy a little for him. When he eats it, then I would start preparing some for him.*

The mother quoted above explained that the child does not eat much citing the previous day as an example when the child did not eat the rice and stew she prepared and she had to give it to another child in the household to eat.

### **Maize porridge (specially prepared for IYC)**

#### **Ingredients used**

Maize dough, salt, sugar, evaporated milk

#### **Preparation**

*R: "Put water in a saucepan on fire to boil; mix corn dough with water in a bowl and sieve. Add sieved corn dough mixture to the boiling water on the fire to cook. Cooking time is about 15 minutes*

*I: "Did you mill the flour for the porridge yourself or did you buy the flour ready milled?"*

*R: "The corn dough is bought ready prepared.*

### **Maize porridge (specially prepared for IYC)**

#### **Ingredients used**

Maize dough, salt, sugar

#### **Preparation**

*R: "I put water in a saucepan on fire and add a little salt after which I mix the maize dough with water, strain it and add it to the boiling water on the fire and allow it to boil for about 10 minutes; I then add sugar to it and allow it to boil for another 2 minutes and it is done.*

*I: "Please I would like to know whether the maize dough was made by you?"*

*R: "Yes we make the corn dough ourselves."*

## **Mashed kenkey porridge (Specially prepared for IYC)**

### **Ingredients used**

Fante kenkey (purchased ready prepared), sugar, water, Nido milk powder

### **Preparation**

*I: How is mashed kenkey usually prepared?*

*R: Wash fante kenkey after removing husk. Put kenkey in a light piece of fabric, put in water and mash till the kenkey dissolves into the water to leave the chaff in fabric. Put the dissolved kenkey on fire to boil. Take off fire to cool and add sugar and milk.*

*I: Wonderful, but please is this the usual way of preparing mashed kenkey in this community?*

*R: Yes, especially when the child is still a baby you need to do it this way to take away the chaff which might be too harsh on his stomach at that age.*

*I: Otherwise, how do others prepare it?*

*R: Some people just mash directly with their hands, add water, sugar and milk.*

*I: C (23 months NBF) is relatively old now but you still go through the method of preparation you attribute to younger infants?*

*R: Yes, I still go by this method because in case there is more than enough of the preparation, storing it becomes easy. I just have to put it into a flask for the next time he demands.*

*I: What about taking out the chaff?*

*R: Yes, I still do it this way because it makes it smoother for Clifford to feed.*

The use of mashed kenkey as an alternative for maize/corn dough porridge is noteworthy as this is a departure from the usual practice. Unfortunately the interviewers did not probe to find the reasons why mothers are now resorting to this method of preparing porridge for their IYC.

Below are other foods specifically prepared for the IYC.

## **Rice and tomato stew (specially prepared for IYC)**

### **Ingredients**

Rice, salt, tomatoes, onions, little pepper, Royco cube, palm oil, egg

### **Preparation**

*R: I first put water in a small sauce pan and put it on fire and add some salt. Then, I wash the rice and put it into the boiling water. Because she is a child, I boil the rice very soft. After the rice is cooked, I proceed to prepare the stew. For the stew, I place a sauce pan with the oil on fire and add the sliced onion. Then, I add a little pepper and tomatoes. I fry it for a while, then I season it with Royco and salt. After that, I add the eggs. Once I add the eggs, I do not keep it on the fire for too long.*

*I: Why is that so?*

*R: Because if the egg stays long on fire, it will lose its nutrients. After it is well cooked, I dish out a portion for her*

## **Rice and kontomire stew (specially prepared for IYC)**

### **Ingredients**

Palm oil, onions, tin tomato puree, powdered pepper, agushie (ground melon seeds), kontomire, salt, powdered fish, rice, oil

### **Preparation**

Kontomire

- 1. Put a pan containing palm oil on fire.*
- 2. Add chopped onions, tin tomatoes, powdered pepper and simmer*
- 3. Add agushie (ground melon seeds) and stir.*
- 4. Add boiled ground kontomire, powdered fish and salt to taste. Allow to simmer till done.*

Rice

- 1. Boil some water and add rice and a bit of cooking oil.*
- 2. Cover and allow to cook till done.*

*Time: 1 hour Fuel: charcoal*

*I: Why did you add oil to the rice?*

*R: In case there's no stew, you can afford to eat the rice alone with the oil in it. It's much easier to eat it this way.*

## **Banku and kontomire stew (specially prepared for IYC)**

### **Ingredients**

Corn dough, grated cassava, palm oil, kontomire, abeduru (pea egg plant), tomatoes, onions, pepper, tinned tomato puree, powdered smoked herrings, salt, onga cube

### **Preparation**

Banku

- 1. I mix some corn dough with water and add some grated cassava.*
- 2. Then I add some salt and stir till it's cooked.*

Kontomire stew

- 1. I cook kontomire with abeduru and ground them together.*
- 2. I fry some chopped tomatoes with grounded pepper and onions in palm oil.*
- 3. I add some tin tomatoes and also the ground kontomire and abeduru.*
- 4. Add the powdered smoked herrings, then some salt and onga cube to taste and allow to simmer for a while.*

*I: Why is the cassava grated and not in a dough form?*

*R: When it's made into dough, it easily smells after a while, but when it's grated and used straight away, it doesn't.*

Older children are mostly fed foods prepared for the family. The methods of preparation are basically the same as when the food is except for some modifications. Banku prepared for the whole family is preferably cooked stiffer as it is more filling. When IYC are included in the meal it is cooked softer. Powdered fish is usually used for stews specially prepared for the IYC. The following examples of caregivers' narratives for foods prepared for the whole family including the IYC are illustrative.

### **Banku and kontomire stew (prepared for the whole family including IYC)**

#### **Ingredients**

Corn dough, kontomire, pepper, onions, tomatoes, palm oil, eggs, small herrings, salt

#### **Preparation**

Banku

*"When I am preparing the banku, I use corn dough alone. I mix the corn dough with a little water and put it on fire. After sometime it starts boiling so I start stirring. When it becomes firm, I keep adding water and stirring till it gets cooked. When it is cooked I take them in bits and roll them into balls and keep in a bowl."*

Kontomire stew

*"Then with the kontomire stew, I boil the kontomire a little, and then grind it together with the pepper onions and tomatoes. Then I fry a little onion in palm oil and then pour the grinded kontomire in. As it simmers I break some eggs into it and then add some little herrings to it. When it is cooked, we eat it with the banku."*

### **Feeding IYC - How food is given to IYC**

Infants and young children are fed using a variety of methods and utensils. Most mothers reported using bowl (plastic or metallic) and spoon or cup and spoon, cup only (i.e child drinks directly from cup) and hands to feed IYC. Five mothers, four of whom had children in the 6 – 8 month age cohort reported using feeding bottles whilst three children were fed by sucking directly from the polythene bags the purchased porridge was served in. Foods fed using cup and spoon include porridges and milo and chocolate drinks and those with hand include banku, rice and fufu. Reasons given by mothers for using a particular method to feed young children include: convenience and ease of feeding, children wanting to feed themselves and opportunity to mash food and make it softer. The following are some reasons mothers gave:

*R: "I put it in a feeding bottle to make feeding easier." I: "Why is it easier?"*

*R: "Because he is used to the feeding bottle. To him it is similar to the breast."*

*R: "I prepare it (Cerelac) in a cup. I make it a bit watery so I put the cup to her mouth and she feeds directly from the cup."*

*"I give it (millet porridge) to him from the polythene bag it is served in." I: "Why?" R: "Because I am in town I don't have a cup with me."*



R: *"I use cup and spoon because the nurses always advise mothers to use cup and spoon in feeding their children."*

*"I mash the rice with my fingers, mix it with the stew and feed it to him."*

R: *The food is dished out into child's bowl, I make sure I wash my hands and I feed child with my fingers.*

I: *Why did you say you make sure you wash your hands?*

R: *I wash my hands because of germs, to kill germs. If i don't do so, the child would be ill.*

Interestingly only the above caregiver specifically made a point about hand washing before feeding her IYC with her hands. It is not clear whether this is a practice mothers do not usually engage in or whether they perceive this as something done as a matter of course and therefore and therefore not worth making an issue off. Nevertheless, given the number of times that children are being fed or feeding themselves with hands, it is a grave omission that hand washing before eating was not thoroughly investigated.

### **Cooking multiple portions**

In this section we discuss post preparation food handling and storage. Caregivers' main reason for cooking multiple portions was to make it easy for the children to be fed when they are hungry. Even though not explicitly stated cooking multiple portions is also a fuel and time saving strategy as inferred from the fact that more often than not the stews and soups that accompany the staples are cooked in bulk and consumed for periods up to three days.

*"It is easier to quickly feed the child when he is hungry."*

*"Sometimes when she is hungry she won't be patient enough to wait for me to prepare it but when it is already prepared immediately she cries for food I give it to her."*

*"I prepare a lot and then put it down to be given later. This is because by the time I come from the farm it will be late so that it can be quickly available when he is hungry."*

*"I prepare it (kontomire stew) so that it can last for some days."*

*"The stew is meant to last about three days but banku is meant to be eaten in one day."*

Mothers store the remaining food which the IYC takes throughout the day. The following quotes are illustrative:

Mother – 8 months child: *"How much koko do you usually purchase?"* R: *"I usually purchase enough to last the whole day."*

Mother - 11 months: *"How much do you usually prepare when you make the rice and stew?"*  
R: *"As for the rice I just prepare it for one meal but as for the stew I prepare it to last for some time. I keep it in an aluminium saucepan and store it in the bedroom for three days."*

Mother - 8 months infant: How much do you usually prepare when you make the "Tom brown".  
R: *"I prepare enough to be eaten 3 times a day."*

### **Handling leftover food**

It is worth noting that food that remains when children are fed (if any remains at all) is not perceived as 'left over' but is kept and given to the IYC later, given to other children or consumed by the mother herself or even disposed off as illustrated by the responses below:

*"He eats some and I leave some for later. But if he doesn't finish the one I serve him at a time his siblings would finish it."*

## **PART 2: ADDITIONS TO FOOD AFTER COOKING AND FOOD STORAGE**

### **Additions to food after cooking**

In addition to obtaining information on cooking procedures, we used the discussion on food preparation of the individual dishes to identify ingredients that are added to food but might not be reported because conceptually, they fall into the category of "condiments." Condiments are often left out when people report about foods. For each food preparation we asked the caregiver-respondent: *"I'd like to know whether anything was added to (name of item) when you gave it to \_\_\_ (child name)."*

For the most part, the answers were negative. However three items were reported as additions to served or ready to serve foods. These are sugar, Nido or Cowbell milk powder and evaporated milk. Sugar was always added to the porridges, gari soaking and milo (cocoa) drink. Milk was also added to almost all the porridges, all the gari soaking and cocoa drinks. When asked why sugar and milk were added to the porridges and other foods, caregivers' responses indicate that this was done to make the food tasty to enable the child to eat. Milk, was added both for taste and enrichment/nutritional value. The following are some of the responses from caregivers:

*"The sugar is to make it sweet and the Nido milk will give it a rich taste."*

*"Sugar and milk make it tasty..."*

*"It (powdered milk) makes his bones strong so that he can walk."*

*"Sugar is to give the desired taste and milk is to enrich the porridge."*

*"For taste and enrichment..."*

*"Milk is added for strength and growth, also for weight gain."*

*"I added the sugar to the koko for it to be tasty so that the child can eat."*

### **Modifications to family foods fed IYC**

Enquiry was made about any modifications caregivers make to family foods when they are intended for IYC. Interviews with caregivers revealed that special modifications are made to family foods to

make them suitable for IYC. The following are some of the modifications caregivers reportedly make to facilitate easy feeding.

Modification to the main family food, banku involves cooking it softer (as opposed to stiffer and more filling) to make it easier for the IYC to eat. Ways of making the IYC banku softer include addition of cassava (grated fresh or dough) or addition of extra water after the banku cooked for the family has been served. As one caregiver explained:

*"I purposely scoop L's banku last because I add more water to make it softer for her."*

Mothers are usually advised to use fish powder when preparing food for their young children to enable them get the full nutritional benefit of consuming the fish especially if they cannot chew. Mothers in our sample appear to take this advice seriously as fish powder is used for all the stews specially prepared for the IYC.

*I: You mentioned that for his kontomire stew you use powdered herrings; why? R: It makes his food healthier; we are advised by the doctors to add this to their foods to make it healthier for them.*

*I: So why the powdered form? R: So that he can eat it better; he can't chew it if it's hard.*

Rice prepared for young children is cooked very soft to allow easy mashing. Mothers also reported using their hands to feed their young children because they can further mash these foods during the feeding process.

Soups/stews fed to the younger children are made less spicy by adding little or no pepper and less onions

*R: Yes with the IYC's food I don't add pepper and agushie.*

*I: We have already talked about the agushie; what about the pepper, why don't you add it?*

*R: If there is pepper she cannot eat it because it is peppery.*

*I: What if there is just a little pepper*

*R: IF even I add pepper it should be very small, so because of her I add just a little to our family foods that she'll be eating.*

*I: Is it modified in any way for the child? R: Yes. The rice is mashed and softened. The stew does not contain too many spices because the child would also eat.*

*"It (banku) is made for the family but it is also made soft without too much pepper so he can eat some.*

## **Food safety and child health**

The food safety theme was rather silent in the narratives of the Gomoa East caregiver-respondents – issues of food safety were only spontaneously mentioned by a couple of mothers. Mothers reported discarding food that had not been consumed at the end of the day because the food would have gone

bad by the end of the day. They also reported reheating stews/soups cooked in bulk to be consumed over several days daily to prevent spoilage. However mothers did not relate their actions to safeguarding their children's health. Unfortunately further probing around food safety issues was not carried out even though there was ample opportunity to do so. Caregivers' narratives of their handling of served left-over food and soups and stews cooked in bulk and consumed over periods of up to three days without refrigeration should be a cause for concern. That this was not sufficiently explored is a missed opportunity to ascertain caregiver knowledge and attitude to food safety and child health. This notwithstanding, scrutiny of the caregiver key informant narratives does provide some useful information

*R: I sometimes purchase extra to be stored and given later.*

*I: In what kind of container is it kept?*

*R: Stored in flask (thermos). It keeps food warm.*

*I: Why is it important to keep it warm?*

*R: It is not good to eat cold foods*

*I: Why is it not good?*

*R: It can make children especially fall sick.*

## **Food storage**

Storage of foods, particularly after they are prepared, is an essential part of IYC feeding management as it has implications for the safety of the foods children are receiving and, ultimately, for their health. We therefore included questions about storage of foods especially after cooking. It is particularly relevant in communities where refrigeration is rare.

Cooked food is stored in various types of containers. Porridges are stored in cups, feeding bottles, flasks and even polythene bags, when purchased. Stews and soups are stored in the saucepans in which they are cooked. Mothers indicated that the food was stored covered and placed in the bedroom to prevent it from spilling or being spilt by the children. The period of storage is usually from morning till evening and could be up to 12 hours, especially for porridges. The long period of storage may not ensure the safety (from health perspective) of the foods given the containers used. When asked how they handled stored foods before feeding them to their children caregivers gave various responses – they either did nothing or warmed the porridges as evidenced from the following quotes:

*I: So when it is time to give the stored porridge to the child, what do you do?*

*R: I heat it and give it to him.*

*I: Do you always heat it before giving it to him?*

*R: No, sometimes it is still warm so if it is still warm I give it to him.*

*R: Sometimes there is some left which I heat and give it to her during the next mealtime otherwise I give it to my siblings to eat if she does not eat all.*

*I: How long does it last?*

*R: It lasts a day*

*I: So when he's ready to eat what do you do to it?*

*R: If it's not too cold, I give it to him like that, if so then I warm it up before he eats it.*

*I: How do you warm it?*

*R: I put it in a pan and heat it for a few minutes.*

*I: For how long do you keep it?*

*R: I keep it for a day.*

*I: What happens when you have to give it to her later in the day?*

*R: I just pour it and give it to her to eat.*

*I: Doesn't it go cold?*

*R: If it goes cold I usually put it in warm water to make it hot a bit.*

*I: You don't mind lighting the firewood again to warm it for her?*

*R: I might not necessarily light firewood. Sometimes after cooking, I just put water on it to boil so that the firewood does not waste away, so that is what I use to warm it whether she is ready to eat or not.*

Stews and soups, even those specially prepared for the IYC, are usually prepared in bulk to be consumed over a number of days. These are preserved by heating in the morning and evening for as long as they last. Obviously this practice has serious food safety and health implications and is worth investigating further. The following narratives show how widespread the practice is,

*R: Stew was prepared to last for 3 days. Banku however is made as single portion for one day.*

*I: How was the stew stored?*

*R: The stew was usually stored in the same pot that the food is made in and reheated every morning and evening.*

*I: For how long is it kept?*

*R: The stew could last for 3 days*

*R: A large portion is prepared. Banku is able to last for 2days and the soup for 4 days.*

*R: I usually prepare a large portion of stew for about 3 days. Banku is a single portion for the household, eaten at once.*

*I: For how long is it (stew) kept?*

*R: It is reheated every morning and evening to last for 3 days.*

### **PART 3: ACCESS TO WATER AND SAFETY**

Access to water and safety are paramount issues in relation to food preparation because of the potential for contamination especially in set ups where there is no piped water. Gomoa East residents are however fortunate with almost 100% access to potable water. Main sources of water in the study areas in Gomoa East included stand pipes/taps (29), communal boreholes (2), streams and rivers (1). Of the stand pipes, 15 are community based and 14 are individual vendors within the communities. Households pay GHC0.10 – GHC0.50 per buckets of water (about X litres) fetched from the community stand pipes and GHC0.50 – GHC1.50 per aluminum basin or plastic containers (about X litres) when bought from vendors in the neighbourhood. Sachet water used by some respondents is usually purchased for between GHC1.10 – GHC1.20. In total, more than 90% (29 out of 32 caregivers)

indicated that their households buy water. However, only 3 out of 32 (9.4%) caregivers reported having ever acquired water on credit.

Treatment of water (both for drinking and cooking) is not a practice in Gomoa East and this is not even the case for the one respondent whose access to water is from the stream. Caregivers perceive the water as clean and not needing any treatment even for drinking by the IYC.

### **Summary and conclusions**

This chapter examined food preparation and food storage practices and provides information on the following:

- a) Ways in which foods are prepared and fed to IYC including additions made to food after preparation and modifications made to family food for IYC.
- b) Food storage including handling of left over foods, food safety and child health and water used in the home

It is evident that besides preparation and feeding of IYC, caregivers in Gomoa East are also involved in farming and other income earning activities in addition to other general household chores including care of infants and young children. Caregivers go to great lengths to make provision for the feeding of their IYC and only delegate responsibilities of food preparation and feeding of IYC to other trusted caregivers when they are absent from home or busy engaged in other household chores. Women make the effort to give their children both nutritious and safe food. However, preparation and storage practices may put children at risk of food-borne diseases. This is more so given their apparent failure to sufficiently demonstrate awareness and concerns about food safety and hygiene. These issues are worth investigating further.

## **CHAPTER 6: ACQUIRING FOODS FOR INFANTS AND YOUNG CHILDREN**

Understanding the opportunities and barriers for improving infant and young child feeding requires information not only on what children are being fed now, but also where the foods are coming from and how they are being prepared. In the previous chapter we described how foods fed to IYC are prepared and stored. In this chapter, we examine the sources of the foods fed to children.

The module on food sources uses the caregiver's reports from the 24-hour recall and family food use record to gather more details about these important aspects of IYC food management. Thus, the questions are based on the behavioral reports of her recent experiences rather than asking about her perceptions of general patterns. For the acquisition component, we listed all the foods and ingredients recorded for the IYC 24-hour recall and the family food consumption and asked respondents to indicate how and where the listed food items were obtained.

## **PART 1: SOURCES OF IYC FOODS**

Our analysis of the food acquisition data shows two major food sources in Gomoa East as follows:

1. Foods that are produced by households for their own consumption and
2. Purchased foods from within and outside the area

A more in-depth analysis amplifies the picture, revealing multiple aspects of food acquisition sources:

- i) Households produce food for their own immediate consumption
- ii) Households produce and store food for their own consumption later
- iii) Households buy, credit/borrow or are given locally-produced food
- iv) Households buy/credit produce and products that come from outside the local area as well as other areas of the country.

Items i through iii can be subsumed under a general heading of **locally sourced foods**. Items iv are **externally sourced foods**. Under the heading of locally sourced foods, we can identify further differentiations, as follows:

- Household farms and backyard gardens
- Purchased from relatives' production
- Purchased from neighbors' production
- Purchased from neighborhood stores
- Purchased from the market
- Gifts from relatives' production
- Gifts from neighbors' production

Table 6.1 below presents information on sources of foods based on caregivers' records of the foods that were fed in the 24 hours prior to the interview and foods eaten by the household over the past seven days. A description of where they acquired the individual foods is provided.

Food items that are sourced from own production by the majority of households include:

- Maize
- Maize dough
- Maize flour
- Cassava
- Cassava dough
- Cassava flour (kokonte)
- Plantain

- Palm fruits
- Kontomire
- Garden eggs
- Pea egg plant (abedru)
- Pepper
- Okro
- Orange

The items that are both externally and locally sourced and are purchased by the majority of households (more than 50 % of households) include:

- Rice
- Yam
- Tomatoes
- Pepper
- Okro
- Orange

Pepper, okro and oranges are equally produced and purchased.



**Table 6.1: Food sources**

<b>Ingredients</b>	<b>Produced</b>	<b>Purchased</b>	<b>Donation</b>	<b>Total</b>
<b><i>Staples</i></b>				
Maize	6	3	0	9
Maize dough/flour	14	11	0	25
Cassava	20	5	0	25
Cassava dough	12	7	0	19
Konkonte (cassava) flour	2	0	0	2
Gari	1	14	0	15
Rice	3	19	0	22
Yam	2	10	1	13
Plantain	13	9	0	22
Cocoyam	0	2	0	2
Bread	0	7	0	7
Millet	0	1	0	1
Potato	0	1	0	1
<b><i>Vegetables</i></b>				
Tomatoes	8	18	0	26
Pepper	15	17	0	32
Onions	1	28	0	29
Abedru	11	3	0	14
Kontomire	15	8	0	23
Garden eggs	13	5	0	18
Palm fruit	12	9	0	21
Okro	4	5	0	9
Beans	0	6	0	6
Agushie	0	10	0	10
Green pepper	0	1	0	1
Cabbage	0	4	0	4
<b><i>Fish/Meat/Egg</i></b>				
Beef (salted)	0	4	0	4
Smoked herrings	0	18	0	18
Smoked mackerel	0	25	0	25
Fried fish	0	12	0	12
Fresh/frozen fish	0	6	0	6
Salt dried tilapia (koobi)	0	5	0	5
Meat (goat/grass cutter)	2	1	0	3
Salt dried shark (kako)	0	6	0	6
Smoked tuna	0	3	0	3

Salted fermented fish	0	5	0	5
Chicken	0	6	0	6
Snails	1	0	0	1
Egg	0	6	1	7
<b><i>Processed foods</i></b>				
Tin tomato puree	0	16	0	16
Spagetti	0	1	0	1
Biscuit	0	5	0	5
Sugar	0	19	0	19
Sardine	0	2	0	2
Groundnut paste	0	9	0	9
Groundnut	1	8	0	9
Cooking oil	0	15	0	15
Palm oil	0	17	1	18
This way Chocolate drink	0	1	0	1
Tom brown	0	1	0	1
Milo	0	4	0	4
Coffee mix	0	1	0	1
Cerelac	0	1	0	1
Powdered milk	0	9	0	9
Evaporated milk	0	3	0	3
<b><i>Spices/seasonings</i></b>				
Ginger	0	2	0	2
Garlic	0	2	0	2
Nketenkete	0	1	0	1
Bouillon cube/seasoning	0	15	0	15
Salt	0	20	0	20
Curry powder	0	1	0	1
Powdered pepper	0	1	0	1
Saltpetre	0	1	0	1
<b><i>Ready prepared foods</i></b>				
Hausa koko (millet porridge)	2	12	0	14
Rice and tomato stew	0	5	0	5
Rice and beans (waakye) and tomato stew	0	2	0	2
Fante kenkey	0	6	0	6
Beans and gari	0	1	0	1
Fried bean cakes (koose)	0	1	0	1
Doughnuts	0	2	0	2

<b>Fruits</b>				
Orange	2	3	0	5
Sugar cane	1	0	0	1

### **Foods that are purchased**

The majority of the foods that comprise both IYC and household diets are externally sourced and purchased to varying degrees: some are solely purchased and some are mainly purchased. Table 6.2 shows where foods are purchased.

Food commodities consumed by IYC that are externally sourced and solely purchased include:

- Sugar
- Salt
- Onions
- Tinned tomato paste
- Melon seeds (agushie)
- Beans
- Cabbage
- Cooking oil/fat
- Palm oil
- Smoked fish (various varieties)
- Fresh fish
- Salt dried fish (various varieties)
- Sardine (canned)
- Beef (salted)
- Chicken
- Eggs
- Milk (Powdered and evaporated)
- Cocoa/chocolate drinks
- Bread
- Biscuits
- Spaghetti (pasta)

The externally produced foods that function as flavor enhancers in the preparation of IYC foods include:

- Bullion cubes
- Saltpetre
- Ginger (and other spices)

It is noteworthy that a number of foods are purchased ready prepared. Notable among these are millet porridge (hausa koko), rice and stew, fante kenkey and waakye.

Table 6.2 show where Gomoa East residents purchase food items. As indicated in Chapter 2, all the communities in the district have small daily community markets but there are two major markets (at Kasoa and Swedru) which are also patronized by residents. Table 6.2 shows that the bulk of food items are mainly purchased from within the communities either from the neighbourhoods or the

community markets. Caregivers indicated a preference for the Kasoa market over Swedru because it is nearer and prices are cheaper. Even so only a few food items are purchased from Kasoa and mostly because of opportunistic reasons and not by intent. At the Kasoa Market, purchases are mainly made from “table top” (stationary) vendors or women selling from individual stalls. Purchases made from the neighbourhood are from kiosks, “table top” vendors and hawkers.

**Table 6.2: Where foods are purchased**

<b>Ingredient</b>	<b>Neighbourhood/ Community</b>	<b>Community market</b>	<b>Kasoa Market</b>	<b>Swedru Market</b>	<b>Total</b>
Rice	4	14	1	0	19
Egg	0	6	0	0	6
Tomatoes	4	10	3	0	17
Pepper	3	13	1	0	17
Onions	3	21	2	0	26
Yam	2	7	0	0	9
Plantain	1	9	0	0	10
Gari	7	7	0	0	14
Cooking oil	2	12	1	0	15
Abedru	1	3	0	0	4
Beef	0	4	0	0	4
Kontomire	1	6	1	0	8
Palm oil	4	10	2	0	16
Milk	1	1	0	1	3
Herrings	4	14	0	0	18
Maize dough	0	8	1	0	9
Garden Eggs	1	5	0	0	6
Tin tomato puree	4	11	1	0	16
Palm fruits	1	9	0	0	10
Fried fish	5	5	1	0	11
Cassava	0	4	0	0	4
Salt	6	13	1	1	21
Maggi cube	2	10	1	0	13
Fante kenkey	4	2	0	0	6
Powdered milk	7	2	0	0	9
Sugar	12	6	1	0	19
Groudnut paste	0	10	0	0	10
Cerelac	1	0	0	0	1
Okro	1	5	0	0	5
Millet	0	1	0	0	1
Cassava dough	1	5	0	0	6
Smoked tuna	1	1	0	1	3
Onga seasoning	3	8	0	0	11
Salt fermented fish	2	3	0	0	5
Beans	1	4	1	0	6
Smoked mackerel	6	19	0	0	25

Tom brown	0	0	0	1	1
Agushie (melon seeds)	2	7	1	0	10
Waakye	1	0	0	0	1
Hausa koko	11	1	0	0	12
Chicken	1	5	0	0	6
Maize	0	2	0	0	2
Milo	2	1	0	1	4
Meat	1	0	0	0	1
Kako (salt dried shark)	0	4	1	0	5
Fresh fish	1	6	0	0	7
Koobi (Salt dried tilapia)	2	4	0	0	6
Groundnut	6	2	0	0	8
Spaghetti	0	1	0	0	1
This way chocolate drink	2	0	0	0	2
Bread	3	3	0	0	6
Cocoyam	1	1	0	0	2
Ginger	0	2	0	0	2
Garlic	0	2	0	0	2
Koose	0	1	0	0	1
Nketenkete	0	1	0	0	1
Orange	1	2	0	0	3
Maize flour	1	1	0	0	2
Biscuit	2	2	0	0	4
Curry powder	0	1	0	0	1
Green pepper	0	1	0	0	1
salt petre	0	0	1	0	1
Cabbage	0	4	0	0	4
Banku	1	0	0	0	1
Potato	0	1	0	0	1
Powdered pepper	0	1	0	0	1
Sardine (canned)	2	0	0	0	2

## Foods that are produced

In discussing sources of household foods, it is also necessary to understand the dynamics of household food production. Table 6.3 shows the range of foods produced by families and household members participating in the growing and harvesting of those foods.

The main food items cultivated by households are maize (62%), cassava (62%), kontomire (44%), pepper (44%), plantain (38%), garden eggs (38%), palm fruits (32%), pea eggplant (28%) and tomatoes (19%). In most cases all house members participated in food production; this is followed by the caregiver and her spouse and the husband alone.

**Table 6.3: Household members participating in growing, harvesting and processing of foods**

Ingredients	Self	Self & Husband	Household members	Self & Mother	Husband	Total
Plantain	0	4	6	0	2	12
Kontomire	1	3	7	1	2	14
maize	0	6	13	0	1	20
Cassava	0	7	9	2	2	20
Garden eggs	0	3	6	1	2	12
Pea egg plant	1	2	3	1	2	9
Palm fruits	0	4	5	0	1	10
Tomatoes	0	1	4	1	0	6
Pepper	0	3	9	1	1	14
Yam	0	0	1	0	1	2
Bush meat	0	0	0	0	1	1
Okro	0	0	2	1	0	3
Onions	0	0	1	0	0	1
Rice	0	0	1	0	0	1
Groundnut	0	0	1	0	0	1
Milk	0	1	0	0	0	1
Orange	0	0	1	0	0	1

## **IYC food bought on credit and food credit payment plans**

The purpose of this section was to find out other ways mothers acquire food for their families apart from own production or purchasing. Specifically we sought to find out if mothers take food fed to IYC on credit.

Discussions held with mothers revealed that taking food on credit is not uncommon in Gomoa East, with about half of respondents - 15 out of 32 (47%) reporting having ever taken food on credit for their child. Only one mother spontaneously explained that she only credited rice for her IYC and whilst mothers did not specifically indicate the foods they bought on credit it is reasonable to suggest that these are likely to be special IYC foods and not household food per se.

In terms of credit payment plans, all mothers indicated that they paid for food credited in cash. Most (11) paid within a week, three paid within 1 to 2 weeks whilst one paid after 1 month. While there seems to be considerable goodwill from creditors some are not so accommodating as illustrated below:

*I: Do you ever have to buy food for your IYC on credit?*

*R: Yes, but not everybody allows that*

*I: How do you pay back that credit?*

*R: In money*

*I: After how long a time?*

*R: Some people tell you to bring it the following morning, after you have sold some of your farm produce.*

## **PART 2: ESTIMATED WEEKLY HOUSEHOLD FOOD EXPENDITURE**

The purpose of this module is to obtain data on what households spend on food for their IYC, as well as an estimate of what they spend, in total, for all their household food. This is important information for several reasons: (1) It provides a basis for estimating the range in spending for infant foods by low income households in the community/region; (2) It permits an estimate of the proportion of household food expenditure that goes for the IYC; (3) Along with the household demographic information it permits us to estimate how much is spent, per capita, on food. This, in turn, provides a basis for comparing the situation in the research community with household economic behavior in similar types of communities around the world; and (4) Together with the information on total household income, it permits an estimate of proportion of income spent on food, which, like the previous point, provides a basis for broader comparisons

### **What households spend on foods for their IYC**

Respondents were remarkably able to give accurate estimates of expenditures on food for the household and the IYC. However this may or may not include expenditure made on food eaten away from home as a few caregivers couldn't tell what other household members spent on themselves away from home. The expenditures on households were therefore in most part, amounts spent on purchasing food items and ingredients for foods cooked for the household. Respondents also



reiterated that the amount they spent on food depended on foods available from their farms and amount spent on IYC special foods when these were included in the purchases. Amounts spent on food for the week ranged from as little as GHC20.00 to as much as GHC160 for a household that purchased all of the food items used that week.

Table 6.4 below presents analysis of the weekly food expenditures for households and IYC by income levels. Household mean monthly income was GhC539.00 (SD=GhC433.00) and ranged between a mean of GhC110.00 (SD=GhC48.00) for the lowest earning households and GhC1,263.00 (SD=GhC374.00) for the highest.

Household's reported weekly food expenditures were generally positively related to the household's monthly income. Households on the average, spent GhC75.86 (SD=GhC38.71; Median = GHC70.00) weekly on food. Households in the GhC401-800 income group spent the highest at GhC95.85 (SD=GhC41.40) while households in the bottom income group had a mean of GhC59.86 (SD=GhC=36.52).

On the average, households spent GhC13.66 (SD=GhC8.80; Median = GhC10.00) on IYC food weekly. Households in the GhC401-800 income group spent GhC16.30 (SD=GhC10.90) compared to GhC11.00 (SD=GhC9.30) for the highest income group and GhC11.57 (SD=GhC6.05) for the lowest income group. Households in the lowest income group spent almost 38.0 percent of their weekly food expenditures on IYC food compared to about 2.0 percent for the highest income group. Households in the GhC401-800 income group spent only 1.7 percent of their weekly food expenditures on IYCs food.

Relating weekly food expenditures to household income, the results show that households on the average spent 10.0 percent of household monthly income on IYC food. Households in the lowest income group reported weekly IYC food expenditures equivalent to 17.5 percent of their monthly income. For households in the highest income group, weekly food expenditures for IYCs amounted to 11.6 percent of their monthly income compared to about 9.0 percent and 5.0 percent in the 201 - 400 and 401 - 800 income groups respectively.

**Table 6.4: Weekly food expenditures for households and IYC, by income levels**

Household income category	Monthly income Mean (SD)	Weekly household food expenditures Mean (SD)	Weekly IYC food expenditures Mean (SD)	% of household food expenditure for IYC food Mean (SD)	% of household income on IYC food Mean (SD)
≤ 200 (N=7)	110.00 (48.00)	59.86 (36.52)	11.57 (6.05)	37.76 (25.77)	17.49 (12.01)
201 – 400 (N=9)	301.00 (70.00)	70.11 (37.68)	14.11 (8.16)	7.57 (4.77)	8.95 (7.76)
401 – 800 (N=10)	621.00 (75.00)	95.85 (41.40)	16.30 (10.90)	1.73 (1.16)	4.66 (6.90)
≥ 800 (N=6)	1263.00 (374.00)	69.83 (32.73)	11.00 (9.30)	2.01 (3.17)	11.60 (18.98)
Total (N=32)	539.00 (433.00)	75.86 (38.71)	13.66 (8.80)	11.31 (18.57)	9.97 (11.75)

Note: GHC1.00 = USD0.36 at the time of data collection

### Decision making on IYC foods

Understanding how food provisioning occurs within households will not be complete without an understanding of decision making and purchasing arrangements regarding acquisition of food for the household and the IYC. We therefore asked respondents about who makes decisions on what foods to buy for the household and IYC and who actually does the shopping for food. The findings are presented in Table 6.5

**Table 6.5: Decision making on IYC foods**

Who	Father	Mother	Both father and mother	Others	Total
Makes decision on foods for the family	6	13	3	10	32
Makes decision on IYC foods	2	18	1	2	23
Buys IYC foods	2	25	3	2	32

Table 6.4 shows that several arrangements within the household can be identified when it comes to food purchasing decisions for the household. Actors involved are mainly the respondent and her husband (acting separately and jointly) and other household members, mainly the mother (grandmother of IYC) or parents-in-law. However it is clearly evident that mothers have primary

responsibility for decisions and purchasing of food for their IYC. The following narratives are examples of the dynamics of household food provisioning decisions:

*R: I do make the decisions on what to buy for the household and the child as well.*

*I: Who actually does the buying of A's food?*

*R: I buy A's food..... I buy the Milo, Cowbell, bread and other things*

*R: My mother decides for the household but for E's food, I decide*

*I: Who actually does the buying of E's food?*

*R: I buy it myself*

*R: My husband decides on what foods to buy for the household, but I decide on M's food.*

*I: So who actually goes to buy the food M eats?*

*R: I do the buying.*

*R: My mother (L's grandmother) makes both household and L's feeding decisions.*

*I: Who actually does the buying of R's food?*

*R: Grandmother of L does more of the actual buying of her foods.*

Respondents were asked about foods bought by different members of the household for IYC. There is no specific pattern of food purchasing although mothers claimed they were mostly responsible for buying all the food for the household as well as the IYC. In cases where foods purchased were mentioned these were the IYC-specific foods/food items such as sugar (which appears to be an essential commodity), milo, Nido, gari, rice (mostly ready cooked with stew), millet porridge (hausa koko), fish powder, biscuits etc.

## **Summary and conclusions**

This section documents the nature of food acquisition in Gomoa East. Some measure of food provisioning is realized through own production. Foods consumed are however acquired from multiple sources. The bulk of the core IYC foods and some family foods are obtained mostly from external sources and are purchased. Foods that are purchased, either using cash or on credit, are mostly acquired from within the community from small local shops or kiosks, vendors, hawkers and neighbours.

Several arrangements within the household exist for household food purchasing decisions. Those involved are mainly the respondent and her husband (acting separately and jointly) and other household members, mainly the mother (grandmother of IYC) or parents-in-law. However mothers emerged as primary decision makers on what is purchased for the IYC. Crediting food for their IYC appears to be an acceptable strategy for meeting IYC food needs. Other ways in which mothers cope with the need to purchase food for their IYC is by engaging in extra income generating activities to earn money. These findings suggest that a positive environment exists for the acquisition of special IYC foods by caregivers: they make the decisions on what to feed and actually do the buying of foods for their children.

## **CHAPTER 7: CAREGIVER PERCEPTIONS OF CHARACTERISTICS OF IYC FOODS AND FEEDING DECISIONS**

This module was aimed at obtaining information on how care givers perceive characteristics of foods from the perspective of basic value dimensions. Value dimensions refer to the characteristics that people use in thinking about and categorizing foods. A main objective of this was also to understand how caregivers view specific IYC foods in relation to their basic cultural values.

While there are many value dimensions that one could explore in relation to infant feeding, this study focused on 5 key dimensions including “healthiness”, “cost”, and “convenience;” the child-specific dimension is “child acceptance” (of a food.) and “influence of others.” These concepts are not inclusive of all the important dimensions of culture that affect caregiver decisions and behaviors. However, based on a large body of ethnographic, nutrition and public health literature, as well as clinical experience of practitioners around the globe, a case can be made that they are important underlying ideas for most caregivers in most places in the world.

Thus, the six concepts are employed in all of the FES studies, regardless of where they are conducted. They are *etic*<sup>3</sup>, not *emic* concepts because they are derived from a theoretical framework that lies outside of specific cultural settings. Therefore, it is important to investigate the “emic” content – the cultural perspectives and interpretations in each setting in order to interpret the results of the cognitive mapping.

The purpose of the questions in this module were: (1) to prepare respondents for the mapping exercise in which they were asked to rate specific foods in relation to these concepts, and (2) to understand what the concepts connoted from the perspectives of caregivers. We used guided questions with probing and cognitive mapping with rating to gather information presented in this section.

### **PART 1: IDENTIFYING THE MEANING OF VALUE DIMENSIONS**

The questions for this module commenced with asking respondents about a number of sub value dimensions of healthiness of foods. These relate to foods that give energy, strength, promote growth or body building, increase appetite, aid digestion and prevent diarrhoea or illness. Whereas previous IYC studies in Kenya (Thuita, 2014a; 2014b; 2014c) had derived the sub health dimensions from respondents’ answers to the general question on healthiness, this study explored views on the sub dimensions before eliciting responses on the general concept of healthiness. In presenting this report however, a more chronological approach would be to first present the general discussions on food healthiness before the specific sub dimensions. The question used in initiating the discussion on healthiness was: “*When you think about the healthiness of foods, what are some of the things that make a food healthy?*” Table 7.1 represents a summary of the key themes from the responses.

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<sup>3</sup> (i.e viewed from the outsider perspective); *emic* (i.e viewed from the insider perspective)

**Table 7.1: Caregiver-respondent qualities that define healthiness of foods  
(Number of respondents = 32)\*\***

<b>Qualities/Characteristics</b>	<b>No. of Respondents Mentioning this quality</b>
Named foods/ingredients	26
Giving/Supporting blood	5
Gives energy	5
Growth promoting Physiological actions+	2
Organoleptic Tasty	7
Food Safety Clean/ Well-cooked to destroy germs /free from chemicals/ well stored to avoid contamination/clean surroundings	10
Diet Quality Balanced Diverse/varied	12

Many of the respondents mentioned names of foods and ingredients for cooking in response to the question on the generic healthiness value. This seems to suggest that the context had been set by the preceding discussions on the sub dimensions of healthiness which heavily focussed on foods by asking respondents to discuss foods associated with the various sub dimensions on “healthiness.” Unsurprisingly, majority of the care givers spontaneously talked about characteristics of specific dishes and foods relating to their healthiness. This tendency facilitated engaging respondents in the interviews on healthiness as well as the rating exercise of a set of specific foods, which we present in the next section.

In the interviews, it was essential to understand the meaning of the healthiness concept culturally to the respondents as it was to understand how it is applied to their care giving and feeding decisions. It was therefore important for us to ask probing questions to draw out the underlying motivations of respondents’ views where these had not been offered spontaneously. Respondents did not only mention the various attributes and benefits of what they consider to be healthy foods, but also mentioned other features or characteristics of the foods themselves, which make them promote healthiness or detract from it.

While the majority only mentioned the food items, some would further mention food characteristics, their benefits, the need for balanced or nutritious diets as well as food safety and security. In addition to foods and their characteristics there were also discussions relating to the preparation or cooking

methods and or environment. Two main orientations emerged from analysis of the responses: namely a positive and negative orientation of the healthiness value concept in relation to IYC feeding:

i) Healthy foods and diets are foods that promote or create positive outcomes, such as giving blood and therefore promoting growth and making the child healthy.

ii) Healthy foods and diets must be balanced and contain certain vital food items (sometimes representing the main nutrition food groups) and having certain ingredients in the correct proportions, must be tasty for child to enjoy or accept and eat more for desired benefits.

iii) Healthy foods and diets are foods that actively prevent negative outcomes.

iv) Healthy foods are foods that are prepared in a sanitary environment, ensuring hygienic practices, well cooked, cooked for a long time to avoid/ remove health hazards.

v) Some foods should be avoided because they can cause illness.

i) Healthy foods and diets are foods that facilitate or create positive outcomes

Respondents mentioned a number of different positive outcomes associated with healthy foods. Examples of the outcomes include “blood giving attribute” “helping the child grow well”, “makes child strong and healthy”, giving strength or energy”.

*R: Things that make food healthy are the chaff. Chaff in food makes it healthy.*

*Starch in cassava makes it healthy. Also when you add beans to gari it makes it healthy.*

*I: When you say healthy in this case what do you mean?*

*R: The starch gives them strength.*

*“You must put fish in food to make it healthy. When there is fish in food it makes the child grow so it makes food healthy.”*

*“Healthy food must be nutritious and nutritious food should contain beans, fish, kontomire and the other things that I have mentioned when children eat such foods they become strong and healthy.”*

*“Healthy food must contain fish and the dried fish makes one clever.”*

These are examples of comments that the care givers volunteered in relation to the capacity of healthy “blood giving” foods to create or support positive health outcomes:

*“I know banku or rice with kontomire stew is a healthy food. Kontomire gives blood so it makes food healthy so when you give it to the child, they become healthy”.*

*“Food that is not spoilt is healthy; when food is healthy it gives you blood”.*

*“Banku, kontomire and egg pea plant, herbs, garden eggs, onions, pepper,*

*milk... The kontomire and egg pea plant for instance give blood"*

ii) Healthy foods and diets must be balanced and contain certain vital food items (sometimes representing the main nutrition food groups) for desired benefits. Kontomire, beans, meat and fish were mentioned by many respondents as essential items that make food healthy.

*"Different ingredients should go into the food when cooking so that when the family eats they will be strong and healthy. I mean different ingredients like, kontomire, beans, fish, groundnuts, and others that make food nutritious and healthy. Food will be healthy depending on the ingredients that will go into the cooked food."*

*"In my opinion things that make food healthy are the ingredients that you use to prepare the food for the child to eat and be healthy... ingredients should contain the necessary nutrients like vitamin, iron, protein and when put together will give a healthy food."*

*"Well, if the food has other additions like the milk, stew and soups mentioned I believe would make the food more nutritious and healthy."*

*"Yes as a mother you have to make sure that the ingredients you are going to buy to prepare the food should contain nutrients that will make the food healthy...I know kontomire gives blood and vitamins...I learnt most of the things from antenatal clinic and weighing (postnatal clinic)".*

iii) Healthy foods and diets are foods that prevent or avoid negative outcomes.

The other side of the coin, with respect to health-giving qualities of foods is that some of them have the capacity to prevent undesirable conditions. For example, hygienic preparation practices help prevent illness, as expressed in the following quote:

*"It involves cleanliness when cooking. You should also ensure foods eaten are always warm; which helps prevent diseases like cholera."*

iv) Healthy foods are foods that are wholesome and not spoilt as well as food prepared in a sanitary environment, ensuring hygienic practices, well cooked, cooked for a long time to avoid/remove health hazards and harmful effects of ill health. This general category of healthiness with respect to food focuses on preparation and the importance of "clean" foods that do not cause illness. At the heart of this dimension are issues of sanitation, clean water and food hygiene in preparation and storage. The concern with the multiple dimensions of food safety was a central theme in the interviews. Here are some examples:

*"I make sure the cooking utensils I am going to use for cooking are cleaned and the kitchen is also neat. At weighing they teach us to use salt in washing the ingredients before cooking. The salt prevents germs and sickness to enable healthy cooking. So for me the ingredients must be fresh and contain nutrients that will make the food healthy."*

*"Good eating and drinking habits. Firstly eating well and drinking clean water. Banku, kenkey, fufu, rice with stews and soups are good foods for healthiness. Good personal hygiene is also helpful for healthiness."*

*“Food that is not spoilt; when food is healthy it gives you blood. When food has not gone bad it’s healthy and kontomire for instance also gives blood.”*

Related to food safety and security, one respondent introduced the concept of healthy food being natural food devoid of any chemicals. She explained in detail the effects of chemicals in fertilizers on farm produce. It was her view that foods grown naturally without chemicals are more nutritious. This excerpt from her response sums up her views.

*“Healthy food is natural food that has not had any chemical added to it, even during cultivation. For instance, formerly, garden eggs used to ripe naturally to an orange color, and it gave a lot of color to soup, but now, even when you boil it and set it aside without using it, it becomes watery and stale. When I use the smaller garden eggs that have no chemicals, I will get more strength and energy as compared to the one who used the larger garden eggs which has chemicals in it.”*

Similarly, another respondent described healthy food as fresh foods as opposed to frozen foods. She expressed concern that frozen foods are preserved using chemicals and therefore unhealthy.

*R: “Fresh ingredients from farm are healthier than the frozen foods from the stores and the market.”*

*I: “What makes the frozen foods less healthy than the fresh ingredients?”*

*R: “Lots of chemicals are used to preserve them which affects us health wise. Fresh ingredients from farm, smoked dried fish, are the things that make foods healthy.”*

v) Healthy foods are foods that do not make you sick

A few respondents would consider healthy any food that when eaten did not make one sick/ill. As long as this food did not cause any adverse effects such as diarrhea then they are healthy foods. The following responses were given to the question “what foods would you consider as healthy”?

*R: “Healthy foods are ones that will not give you challenges when you eat them. An example is banku and okro stew. Unhealthy foods will give you challenges”.*

*I: “Can you give me example of the challenges you mean?”*

*R: “Upset and running stomach when you eat them.”*

*R: “When you eat and it doesn’t worry your stomach or make you feel sick it means the food is healthy.”*

*I: “What kinds of foods can worry your stomach?”*

*R: “Sometimes groundnut can give you stomach upset if it’s not well cooked.”*

*I: “So what if it’s well cooked?”*

*R: “Then it’s okay.”*

### **Sub-dimensions of healthiness**

As explained earlier, specific aspects of “health” relating IYC foods were explored before the general question on healthiness. These dimensions of healthiness were selected from previous studies in



Kenya in which key informants and care givers had mentioned a number of different features about healthiness. We consider these here as “sub-dimensions” of the value.

These include energy, strength giving foods, foods that build the body and promote growth, those that increase appetite, foods that help with digestion and those that prevent diarrhea or/and illness. To understand these sub-dimensions further, caregivers were asked about specific foods in each category. The question was posed as “*Are there any foods for infants and young children that are especially good because they give/aid/prevent ... (sub dimension)*”. Table 7.2 (on the next page) presents a list of the foods generated from respondents’ interviews for each of the sub-dimensions of healthiness.

The table provides a snapshot view of the range of foods mentioned by respondents for each of the sub value dimensions. The key observation one could make is the number of food items and meal combinations listed by respondents. It shows their knowledge of a large repertoire of food items and meals, obviously some are more popular than others, for the different sub values. While some respondents mentioned full meals and their accompaniments, others mentioned food stuffs/cooking ingredients.

Also obvious from the table is the fact that there were more mentions for staple foods/ingredients for the first 3 sub health dimensions (energy giving, strength giving and body building/promoting growth) than for the other food groups like fruits and beverages. Fruits received more mentions for the “aiding digestion” followed by “increasing appetite”.

Another feature of the table is the relatively low awareness of foods that “increase appetite”, “help digestion” and those that “prevent diarrhea/other illness”. It is worth pointing out that most of the responses for the last sub dimension related more to “preventing illness” than preventing diarrhea.

**Table 7.2: Foods<sup>4</sup> associated with Sub Value Dimensions on healthiness**

Sub health value dimension	Energy	Strength	Build body /promote growth	Increase appetite	Helps digestion	Prevent Diarrhea and other illness
<b>Foods/Ingredients</b>	<b>Number of respondents mentioning</b>					
<b>Porridges</b>						
Lactogen/powdered milk	3	2	10		1	
Koko	3	1		3	6	1
Koko + milk	2	2	2	1		
Rice porridge				1		
Hausa koko			1	2	1	
Hausa Koko with milk			1			
Cerelac	3	4	9	1		
Tea (with milk)					2	
Milo (with milk)					2	
This way chocolate drink					1	
Tom brown	1			1	2	1
Multi grain/enriched home processed Tom brown	2	2	1			
Oats	1	1			2	1
Market purchased processed Tom Brown		1	1			1
<b>Staple meals/foods</b>						
Rice with stew	7	4	6	8		
Rice + other soups	4	1	3			3
Rice + oil		1				
Oily foods		1				
Fufu (with any soup)	8	3	2	2		3
Fufu with palm soup	3	2	4			
Fufu with kontomire soup			1			
Light Soup				1		
Banku (with any stew)	6 (2)	4	1 (1)	3		4
Banku/rice and beans stew/agushie stew	2	4	1	1		
Banku and Okro stew	5	4	3	1		2
Banku + palm soup			1	1		
Mpotompoto	2	1	1	1		1
Yam	4	3	1	1		
Yam and kontomire stew.	2		2			
Rice with kontomire	2	4	2		1	1
Banku + kontomire	8	9	3			1
Ripened plantain with Kontomire		1	1			
kontomire	4	1	3	1		
Ripened plantain eto (i.e mashed) with palm oil and groundnut paste	2	2	1			
Abedro (pea egg plant)				3		
Cabbage stew	1					

<sup>4</sup> These are multiple mentions

Sub health value dimension	Energy	Strength	Build body /promote growth	Increase appetite	Helps digestion	Prevent Diarrhea and other illness
<b>Foods/Ingredients</b>	<b>Number of respondents mentioning</b>					
Waakye with stew	2	1				
Fanti fanti			1			
Fish (fresh/dried/ Powdered)	2	2	2	1		
<b>Staples- Ingredients/food stuffs</b>						
Meat	1					
wheat						1
kenkey						1
cassava	2	1				2
cocoyam	1	1				
Sweet potato					1	
Plantain	2	2	1	1		
Beans	6	6	6	1	1	
Eggs	1	2	1		1	
<b>Fruits</b>						
Fruits (generic)	1		2	1	2	1
Pineapple	3	6	6	1	2	
Mango		2			1	
Orange	1	6	7	1	6	2
Water melon	2			1	1	
banana	3	3	5	1	5	1
Pawpaw		3	2		6	
Sugar cane		2				
<b>Beverages and snacks</b>						
Water	2				2	
Breast Milk	2		3	1	1	
Malt	2					
yoghurt					1	
Masked kenkey	1	1	1		1	
Mashed kenkey with milk/lactogen	2	2	1			
Gari soakings with milk	1					
biscuit					1	
coke	1					
<b>Non food specific responses</b>						
Don't know of any foods	3	5	3	8	7	15
Medicine/blood tonic				7	4	
Eating healthy/ healthy foods						3
Clean surroundings						1
Clean habits	1					3
Well cooked foods	1	1				

## **Perceptions relating to specific sub-dimensions of healthiness**

### ***Energy/ Strength Giving Foods/ Growth promoting and body building foods***

Analyses of the set of responses for the above sub dimension questions showed that whereas the majority of respondents provided examples of these foods, 3 respondents respectively claimed they didn't know of energy giving and body building/growth promoting foods, while 5 respondents said the same for foods that give strength. Another feature of the comments is that there were similarities or, in some cases, repetitions or references to comments made for both energy giving and strength giving foods. A number of respondents perceived the two dimensions to be similar or the same and therefore the same foods required to achieve the desired benefits for both. Even for those who provided examples, many would respond that they didn't know how or why the foods they had mentioned were good for the dimensions in question. Some mentioned health professionals as their source of nutrition information.

Similar to energy and strength giving foods are respondents' comments/explanations mentioned for foods that promote growth and build the body. The themes emerging from the content analysis for responses to the 3 sub dimensions are summarized as follows with supporting comments in table 7.3

**Table 7.3: Care givers’ perceptions of attributes/benefits and selected comments on energy/strength giving and body building/growth promoting foods**

<b>Value Dimension</b>	<b>Theme/ attribute</b>	<b>Selected Supporting Comments</b>
<b>Energy giving foods</b>	Food is heavy/ makes child feel full	<i>Yes there are foods for infants and young children that are especially good because they give energy. These are Banku, oats, beans and fufu and it's because they are heavy. (The same response was given for strength giving foods.)</i>
	Knowledge about foods gained from health professionals	<i>R: Banku, fufu, yam, beans, rice, mashed kenkey. I: Why do you say that they give energy? R: We were told at the hospital that they give energy</i>
<b>Body building and growth promoting foods</b>	Food promotes brain development	<i>R: Protein foods, herring's, "kpala" (frozen fish), dried fish I: Why do you say they build the body and promote growth? R: They improve their brain development.</i>
	Child's appearance /looks is evidence of food's qualities	<i>R: Breast milk, Lactogen, rice, kontonmire, beans, and eggs. I: How will you know that these things are making the child grow. R: The child's body will be chubby R: They are Cerelac (instant cereal), and the foreign Tom brown. I: Why do you say these foods help to build the body and promote growth? R: When you study the children who eat those foods you realize that they grow fast.</i>
	Mention of specific nutrients as evidence of food's qualities	<i>R: Beans, kontomire, fufu etc build the body and promote growth. I: Why these foods? R: I hear they contain irons and vitamins like vitamin A.</i>
	Knowledge about foods gained from health professionals	<i>Yes, when he was starting to eat heavy foods, the doctor advised me to use agushie (melon seeds), tomatoes and kontomire for Y's stew. He also said eggs were good and that all these allow him to grow well. He also advised me to ensure his food like the banku for instance is soft enough for him to be able to eat.</i>
<b>Foods that give strength</b>	Knowledge about foods gained through health professionals	<i>R: If the child has a healthy appetite banku and okro stew, koko, or even fufu especially with plantain this is because it gives a lot of strength. I: What is it in plantain that gives strength? R: Even the Doctors say that plantain gives strength  R: Banku, rice, fufu, plantain, yam, cocoyam, cassava give strength. I: Why do you say so? R: That is what the nurses told us</i>

<b>Foods that improve appetite</b>	Appetite enhancement is explained as fruits /some foods that induce hunger	<p><i>R: Breast milk and Banku</i></p> <p><i>I: How will these foods increase the appetite of the child?</i></p> <p><i>R: When he takes the breast milk he urinates and then gets hungry so he can take again and the banku makes him defecate so that he feels hungry for food</i></p>
	Food has attributes of blood tonic	<p><i>When he can't eat well, light foods are good for him; like koko, rice water and tom brown. Abedru (pea egg plant) and kontomire also gives then appetite; it works like a blood tonic.</i></p> <p><i>Well for B for instance, before you feed him, you'll have to give him something that will make him hungry; that's why I give the blood tonic. Also that's why I add abedru, it's like blood tonic and it will make him eat more</i></p>
	Visual appeal: Different colours of ingredients in the food make food attractive to increase appetite	<p><i>R: Mashed cocoyam with palm nut soup or red oil.</i></p> <p><i>I: Can you please tell me how this food in turn increases appetite?</i></p> <p><i>R: It is a nice dish if you prepare it well, so children eat it well. It also has a nice colour for attracting children to eat.</i></p>
	Good taste induces appetite	<p><i>I: Are there any foods for infants and young children that are especially good because they "increase appetite?"</i></p> <p><i>R: It depends on whether or not the food tastes nice. Sometimes it depends on the kind of fish you use, or the variety of fish you use, for instance using both fresh fish and dried powdered fish in one meal gives it a better taste so the child will eat better</i></p>
	Appetite enhancement is explained as children being drawn to foods that they like	<p><i>R: Pineapple, watermelon, banana.</i></p> <p><i>I: Why do you say that these foods increase the appetite?</i></p> <p><i>R: They are foods that children like and so they eat a lot.</i></p> <p><i>I: Anything else?</i></p> <p><i>R: No that is all</i></p>
	<b>Foods that aid digestion</b>	Foods that aid free bowels
	Child does not suffer indigestion	<p><i>R: There are foods that help digestion, these are Tombrown and Oats.</i></p> <p><i>I: Why do you say that they help digestion?</i></p> <p><i>R: When a child eats those foods they don't suffer indigestion,</i></p> <p><i>I: How will you tell that the child is not suffering indigestion?</i></p> <p><i>R: They are able to sleep well and comfortably and they don't vomit</i></p>
	Light /soft foods are easy to digest	<p><i>R: Lactogen, koko.</i></p> <p><i>I: Why do these foods help in digestion?</i></p> <p><i>R: They are light so they are easy to digest</i></p> <p><i>R: Fruits like pineapple, water melon, banana, are soft, boiled eggs, sweet potatoes</i></p> <p><i>I: Why do you say these foods are good because they help digestion?</i></p> <p><i>R: They are soft and so they digest easily.</i></p>

		<p><i>I: Anything else?</i>  <i>R: Boiled eggs and sweet potatoes</i>  <i>I: Why do you say they are good because they help in digestion?</i>  <i>R: they help the child to be fit. The child does not experience indigestion when he eats them.</i></p> <p><i>R: I can't tell. As for food if only the child can eat it, then it will digest easily. I think the problem is rather with whether he or she can eat the food in the first place.</i>  <i>I: Can you give an example of such foods?</i>  <i>R: Oh foods like koko</i>  <i>I: Why do you say that children can eat koko</i>  <i>R: They can eat it because it has a lighter consistency</i></p> <p><i>R: Breast milk, koko, this way chocolate drink, yoghurt, biscuits.</i>  <i>I: How do these help in digestion.</i>  <i>R: They are light so they digest easily</i></p> <p><i>Yes, foods like koko, oats, Tombrown,</i>  <i>I: Why do you say so?</i>  <i>R: These foods are light so they are easily digestible.</i></p>
<b>Foods that prevent illness/ diarrhea</b>	Cooking food well to kill germs / cleanliness	<p><i>I: Are there any foods for infants and young children that are especially good because "they prevent diarrhea and other illness?"</i>  <i>R: Rice, banku, wheat, kenkey.</i>  <i>I: Why do you say that these foods prevent diarrhea?</i>  <i>R: These foods are usually cooked to kill the germs that cause diseases.</i>  <i>I: Are there any foods that are cooked but still have germs?</i>  <i>R: There can be if your hands are not washed.</i></p> <p><i>I don't know of any particular food. But if you cook food well and keep it clean the child will not get diarrhea and any other illness.</i></p>
	Good nutrition prevents illness /mention of specific nutrients	<p><i>Just like I said before, fufu, agushie, beans and kontomire make them healthy and prevent diseases as they contain iron and vitamins.</i></p>
	Foods perceived to not contain bacteria	<p><i>Foods like rice, orange, and other fruits.</i>  <i>I: Why do you say that these foods prevent diarrhea and other illnesses?</i>  <i>R: As for the rice, because there is no bacteria and the orange and other fruits they help to strengthen the kidneys.</i></p>

**Child acceptance value dimension**

For many caregivers, it often is a challenge getting children to accept all of the foods they would like to feed them. The notion that foods may differ from each other in the dimension of “child acceptance” is therefore important to understand as part of mapping caregivers’ cultural beliefs/knowledge. As with healthiness and its sub dimensions, it was important to first explore the Gomoa East caregivers’ perception of acceptance before we ask them to rate specific foods on the concept of child acceptance. To elicit their views we asked: *“In your opinion, what are some of the things that make a child accept food?”*

From the analysis of the interviews that were generated by this question, we identified two distinct categories of responses:

1. Major theme of *mention of actual foods and food characteristics* that make children accept food
2. Sub themes of *child’s own favourite foods, managing the feeding process, and child’s physiological state*

Characteristics of food that promote its acceptance by IYCs as highlighted by caregivers are detailed as follows.

1. Food Characteristics
  - Taste: Good taste or tasty achieved through , “food well prepared”, use of a range of ingredients, sugary/sweet foods, wholesome ingredients **(14 mentions in total)**
  - Texture: Watery/soft food/ easily chewed or swallowed **(2 mentions in total)**
  - Aroma: Pleasant smell of specific dishes attract **(4 mentions)**
  - Visual appeal: Attracted to proteins – meat, eggs, beans, fish **(2 mentions in total)**
  - Food is heavy
2. Child’s favourite food/food child likes (may be attributed to a combination of the characteristics above)
3. Child’s physiological state – very hungry children exhibit limited choice/sick children don’t easily accept food, children with appetite easily accept food
4. Feeding practices: Devoting time and attention during feeding

### **Food characteristics and child acceptance of food**

Many respondents mentioned a combination of the above listed characteristics as making food acceptable to children; these are not mutually exclusive in that it was possible to achieve multiple characteristics in one meal.

#### ***Taste***



Good taste or tasty food was achieved by adding particular ingredients to the meal such as meat, fish/fish powder, eggs, seasoning cube and sugar among others as captured in the following comments from respondents.

*R: "Foods that children accept are rice, fufu and soup, banku and tomato or kontomire stew."*

*I: "Why do you think children like these foods?"*

*R: "They like them because they like the taste."*

*"When the food has high protein content or ingredients added like egg, milk, and fish powder then children accept it. Most importantly, when the food has a nice taste like I said earlier on then they enjoy it".*

*"When powdered fish is added to kontomire stew it makes the stew tasty and anything added to the stew like banku or rice will make the child accept the food. So for me children do accept tasty foods."*

*R: "Food must be tasty or sweet before a child can accept it."*

*I: Then what are some of the things that make food tasty for the child to accept that food?*

*R.: When there is Maggi seasoning cube in a stew, or sugar in koko, the food becomes sweet and tasty. This makes the child accept the food without much struggle to feed the child."*

*"Food should have taste, e.g. when I add Nido to his koko, it makes it sweet for him."*

It was important to two respondents to mention the need for main carbohydrate dishes to be accompanied by stews to make them tasty enough for IYC to accept food. In poor communities where the cost of cooking may be unaffordable during the lean seasons, children are sometimes just fed carbohydrate staples with no or little accompaniment to basically satisfy their hunger. It is likely children do not accept such foods well, therefore the significance of this view.

*R: "When there's stew accompanying the foods they eat it well."*

*I: "What about the stew makes them eat the food well?"*

*R: "The taste."*

*R: "When there's stew in addition to his main dish like banku he eats it well".*

*I: "What is it about the stew that makes him eat it well?"*

*R: "When I use agushie and tinned tomato puree he likes it so he eats it well."*

One respondent mentioned the importance of using wholesome ingredients to achieve well-cooked tasty meals. There may be the possibility of other homemakers buying squashed or over ripened vegetables as these may be cheaper.

*R: "The food should be tasty and well cooked."*

*I: "What makes the food tasty?"*

*R: "Using wholesome ingredients to prepare it and not rotten or almost spoilt ones."*

## **Texture**

Only two respondents mentioned texture as a characteristic making food acceptable to IYC. One spontaneously mentioned “soft” texture while the other responded in the affirmative after a prompt to an earlier reference to soft foods.

*“Also when foods are made soft the child eats”.*

*I: “You mentioned that the Doctor said Y’s food should be soft; does that also count in the child accepting the food?”*

*R: “Yes”*

### **Aroma**

These respondents cited pleasant aroma as trigger for child acceptance of food. What is not clear is whether for the IYCs this is experienced during the cooking process or when they are being fed.

*“Aroma of a food will make a child accept food and eat.”*

*“Children like foods that are tasty and have good aroma, the aroma attracts them when they smell it, and it makes them accept the food.”*

### **Visual appeal**

Two care givers also identified the visual appeal of food as a prerequisite for child acceptance; with the different types of protein sources such as eggs, fish, meat mentioned as children’s favorites. The following reproduced interviews aptly explain children’s attraction to these protein foods.

*“For me, it’s the ingredients in the food that makes the child accept it e.g like eggs and fish. For my child as soon as she sees the eggs and fish in food, even if it is not her feeding time she will accept it.”*

*“When the food looks appetizing, has meat and fish in it, the child also eats it well.”*

For a few respondents a child’s food acceptance is aided by inducing a child’s appetite either through the kind of food that is fed or by administering blood tonic, generally believed to enhance appetite. The following interview excerpts capture these views.

*R: To me, it depends on the way the food is prepared. For example instead of introducing a child to just any stew, giving the child kontomire stew can be more accepted by the child.*

*I: Why do you believe kontomire stew will be more accepted?*

*R: Kontomire stew increases appetite.*

*R: Blood tonic helps.*

*I: How does it help the child’s acceptance of food?*

*R: When the child is on blood tonic it helps or improves her feeding.*

### **Feeding practices**

### ***Child's favorite meals/Individual preference***

A few respondents, while identifying the role food characteristics play in making food more acceptable to children, also acknowledged what appears to be simplistic and yet obvious trigger that make children accept a meal; that children are more likely to accept food they like as mentioned by 9 respondents.

*R: Usually at her age they are now being introduced to real food so it is largely a period of trial and error.*

*I: What about the foods they are eating at their age? What can you say about acceptability at that level?*

*R: You can enhance acceptability by giving them what you find that they turn to accept more. No matter what, every child has a preferred meal. It is a natural occurrence.*

*"Give the child what you know he/she likes to eat".*

*"When you give the child food that he likes, he would eat it well."*

One interesting observation of a respondent was that a child accepts food that makes them full. The following interview which captures this view seem to suggest that heavy food fill children up and satisfies them for longer. This is more of the post eating experience that mothers would approve of rather than a pre-eating condition that would promote child acceptance of food.

### ***Devoting time and attention during feeding***

Five respondents referred to the actual feeding process and mentioned creating a relaxing atmosphere and being patient with the child during feeding as determinants for children's food acceptance. This is reflected in the following 2 responses.

*"Sometimes pampering the child and being patient in feeding the child at the place she/he wants to eat."*

*"Being patient and tolerant with a child during feeding helps a child accept food. Some children are naturally fussy with food".*

### ***Child's physiological state***

Three respondents pointed out that a hungry child would accept food; however when probed further, one agreed that the food must have some of the characteristics mentioned to be acceptable to the child, as captured in the excerpt below.

*R: When the child is hungry he eats.*

*I: So if J is hungry and you give her fufu will she eat it?*

*R: No that is why I am saying that it is when the child likes a particular food that she takes it.*

*I: What makes the child like that particular food you may be talking about?*

*R: Also when foods are made soft the child eats.*

*I: What else?*

*R: Food that is tasty, like koko that has sugar and milk.*

Two respondents were of the opinion that a child's state of wellbeing does influence their ability to accept food; explaining that a healthy child or one who was not constipated, was likely to accept food easily. This seems to suggest that a child experiencing any physical discomfort was unlikely to easily accept food.

*R: If the child has a clean digestive system the child accepts food best."*

*I: Can you please explain this to me further in relation to how it does or does not help the tolerability of foods by B?*

*R: By that I mean to say that if the child's digestive system is not congested, the child eats well and eats everything.*

*I: Do you mean the child's ability to bring out stool frequently enhances his or her acceptability of foods?*

*R: Yes, exactly so*

### **Ease of feeding as a value dimension**

Related to child acceptance of food is how easy it is to feed the child; the two concepts somehow seem to be two sides of a coin. To obtain care givers' views on what makes the feeding process easy we asked them this question: "in your opinion what are some of the things that make a child eat food easily?" Content analyses of the interviews showed only 6 responses were provided for this question. Three of the responses related to food characteristics enabling ease of feeding including the following mentioned by one respondent each:

- Making the food soft/easy to swallow
- Food containing less pepper and
- Food being tasty

The remaining 3 respondents reiterated the view that children were easy to feed if they liked the food. One respondent also identified that a child being able to feed him/herself made feeding easy.

*"He's able to feed well and it is because he is able to feed himself. Once he is satisfied, he plays around and I also feel relaxed"*

### **Cost as a value dimension**

To explore care giver's perception of cost with regards to feeding decisions for infants and young children, we posed the following question: "*I would like to understand what cost means to you when it comes to feeding IYC*". We note from the responses from caregivers to the general statement from the interviewer that many began their comments with an orientation to the concept of "expensive," or "their financial standing" followed by explanations about foods that they regarded as expensive and difficult or impossible to buy. Others began by affirming that regardless of their financial standing, they were prepared to feed their children to achieve their desired outcomes. Yet a third group discussed foods that are cheap and offered explanations for why these foods are within their reach financially. This basic division in orientation regarding concern about expensiveness versus cheapness was skewed towards those who expressed cost in a negative light within the sample.

Caregivers' responses could therefore be grouped under positive and negative orientations with regards to the following:

- Cost of foodstuffs and affordability
- Financial status and barriers to food choice and meeting IYC feeding needs
- Feeding IYC exclusively or feeding on family foods
- Food seasonality and effect on costs
- Farm ownership and effect on food expenditure – food sourced from farms versus foods purchased

### **Positive orientation of discounting food costs as a challenge/an issue**

Five respondents reported that they did not consider cost as a challenge in meeting the feeding needs of their IYC. One of these would only consider feeding expensive when the child refuses to eat the food.

*“It is not that difficult or expensive. What makes it expensive is when you buy or prepare food for him and he does not eat”.*

Respondents whose children are likely to have just begun complementary feeding find feeding less expensive, as not much is eaten anyway, mentioned in the following responses.

*“Feeding him is not expensive for me because he’s now learning how to eat; he doesn’t eat much and we get the koko for free too.”*

*“It is not expensive. He just started taking other foods apart from breast milk, which is the hausa koko, so it’s not expensive”*

Caregivers cooked whatever was available and the cost of which was within budget and considered affordable. This also depended on the kinds of food that the IYC liked. There was also the caregiver who is less cost/price sensitive and more interested in giving the child what they liked regardless of the costs.

### ***Availability of harvested farm produce***

Another positive orientation to associated costs with IYC feeding was that of the group of caregivers who farmed and therefore balanced using mainly harvested farm produce with buying a few non harvested products. To this group of 5 respondents, cost of feeding was not that much of a challenge.

### **Negative orientation of cost being a challenge**

#### ***Foods/ingredients are considered expensive/barrier to food choice***

Several women (18) emphasized that they had problems with meeting the cost of food which they considered above what they could afford or adding extra financial pressure on the limited household feeding budgets. This was particularly the case for caregivers having to provide complementary foods that were additional to what the households otherwise would consume.

*“For us if there is nothing at least we can get something from the farm and make do with that but as for her I would need to get money to buy what she has to eat”.*

*R: It is expensive to feed C.*

*I: Why do you say it is expensive to feed C?*

*R: She can't usually eat what we would prepare. For instance, but for her we would just grind pepper and eat with our banku, but if we have to consider her then we have to make some stew, whether tomato stew or kontonmire stew and that is more costly.*

Ensuring that children were fed their (child's) preferred food could also make feeding expensive as these two respondents explained:

*R: I force (try hard) to get money to feed him.*

*I: Is it expensive or cheap?*

*R: It's expensive, if he doesn't eat a particular food, I will have to try and get him another to see if he'll eat, so it's expensive.*

*R: It is expensive to feed IYC.*

*I: Why do you say it is expensive to feed IYC?*

*R: She likes rice and it is expensive so if I don't have money, I have to find money to buy for her”*

Some care givers were also concerned that their own financial limitations prevented them from feeding their IYC nutritious foods that would improve their growth and health. These 4 respondents explained their frustration in the following responses.

*R: For me cost means the inability to give certain foods to B.*

*I: Do you however wish to give such foods to her?*

*R: Yes*

*I: Can you give examples of such foods?*

*R: Yes cerelac and lactogen*

*I: Why would you give these foods and not any other?*

*R: These foods contain vitamins and they make children grow fast and healthy.*

*“Cost determines what I feed the child. Right now I wish I could feed the child certain foods like kontomire stew always but there is no money”.*

*“Without money it will be difficult to feed the child because as a mother you might want to buy some food that will boost the health of the child but due to financial problem, it becomes difficult to do that. So to be able to feed a child all depends on money”.*

*“If you want good food to promote the child's health, you have to spend more; because good food costs more money. For example, tomatoes that are partially soft are cheaper to buy, but it's not healthy. So in that case good tomatoes would be more expensive but healthier.”*

The extent of one mother's desperation with regards to limited or lack of access to funds for feeding is expressed in the following interview where the only solution available under extreme circumstances is to just breastfeed the child:

*R: Sometimes when facing financial problems it is difficult to get money to buy food for her*

*I: How do you handle her feeding during such times?*

*R: There are times I have no money and where I can get credit also runs out of stock of what I can buy on credit. I only depend on breast milk till the situation is restored."*

Still on the issue of cost and IYC feeding another group of caregivers who reported feeding on a limited budget resigned themselves to feeding within their limited budgets and making sacrifices in making the feeding decisions as recounted by these respondents.

*"In my view, it is your duty as a mother because you brought forth the child and you must make sacrifices. It is about prioritizing and denying yourself to feed the child even if you don't have money".*

*"Cost of feeding M for me means sacrificing for him. When I have to forgo my food to let him eat, I do that. Irrespective of the cost, the child must still eat even if I have not eaten".*

*"In this community feeding is very costly, but so far as there is a child, as a mother you have to do all that you can to feed the child whether expensive or not. You have to work hard to make ends meet".*

### **Seasonality and cost of farm produce versus costs of purchased products**

One respondent highlighted the effect of food seasonality on food prices and ultimately the impact on food variety and choice for the IYC. She explained that some non seasonal food products like rice are costly and therefore not within her reach of affordability all the time. The following excerpt seem to suggest that this caregiver resorts to trying different cheaper options to enable her feed her IYC a variety of food.

*R: Financial difficulties prevent me from buying certain types of food I would have otherwise loved to buy for her. When food items are expensive, it becomes difficult to give variety of foods to the child".*

*I: What are these foods that become expensive?*

*R: Corn, plantain, cassava are some of these foods that go out of season. Rice is always available but the problem is money to buy it all the time. It is expensive too.*

*I: How does cost affect A's feeding?*

*R: I would have to try many food items on A.*

### **Convenience value dimension**

The concept of obtaining caregivers' cultural perspective of convenience in terms of feeding IYC is relevant for several reasons. In American and European contexts, the concept of convenience has both positive and negative connotations. Some of the negative connotations, particularly related to nutrition, have arisen because of its association with "convenience foods" and "convenience stores." These call up images of inferior products, produced without concern for nutritional qualities. It is associated with foods that sacrifice health for speed and ease. We suspect that the concept of convenience also has negative connotations because it implies taking short-cuts, and perhaps, at an even deeper cultural level, when it is applied to women's domestic activities, subtle implications of

deviations from expected performance standards and dedication to the roles of “housewife” and “mother”.

To introduce the discussion of convenience we broke the concept into two themes of ease of access/acquisition on the one hand and ease of preparation on the other. We asked: *“Now I would like to know what you consider to be convenient in terms of preparation and acquisition when you think about feeding ...(name of child).* The interviewers ensured that respondents answered both aspects of the question by prompting and or probing if the other concept was not covered in the response provided. What is clear from the content analysis of the interviewers is that the majority understood the questions. Caregivers’ responses fell into a set of two attitudes with regards to convenience: One group considers the value as important or an issue while the second group did not consider it important or of any value, categories which can be summarized as follows:

Two distinct groups of attitudes towards convenience;

- I. There is the group that considers the value important or think it’s an issue:
- II. The second group refers to those who consider that the convenience value is inconsequential in making feeding decisions for IYC feeding.

Care givers’ dispositions to the two orientations in attitudes are highlighted in the discussions on the following sub themes that emerge from the content analyses for each aspect of the two convenience value sub dimensions.

### **Convenience - Ease of food acquisition/access**

- Ready availability of ingredients and food stuffs -general statement – (6 respondents)
- Easy food availability from farms (2 respondents)
- Access to money for shopping (5 respondents)
- Buying already cooked food (2 respondents)

#### ***Ready availability of ingredients and food stuffs***

About a third of respondents describe ease of acquisition with regards to the ready availability of ingredients/foodstuffs in feeding IYC. Ready availability mainly refers to close proximity as well as ready in terms of availability in homes but also expressed in other ways such as having ingredients that the caregiver would not have to buy as commented below.

*“I always want a continuous supply so that I can have what is necessary for my child to eat all the time”.*

*“Everything I give her is available here for me to buy”.*

*“When a child is hungry you don’t have to go to market in town before you come to prepare something for the child, as a mother you quickly gather something in the neighbourhood and prepare food that will not be time consuming for the child”.*



### ***Easy availability of food from farm***

Two respondents described convenience in food acquisition as foodstuffs that could be easily acquired from the farm.

*“Plantain, cocoyam, yam...They are convenient because you can easily get them from the farm or even the bush”.*

*“Getting food from the farm is convenient for me.”*

### ***Access to money for food shopping***

Other respondents explained convenience in food acquisition as having easy access to financial resources to prepare the meals of their choice for their IYC as indicated in the comments below.

*“The money involved determines what to feed him. If I don’t have enough money, I buy him what I can afford”.*

*“If only you have money you can easily prepare it for him; it is only the money which makes acquisition difficult”.*

*“For me it boils down to money. Even if the place is far, once I know that is the only food she will eat, I will go a far distance to buy it because I have the money”.*

### ***Bulk buying***

One respondent attributes bulk buying to helping her meet the challenges of feeding her IYC. Buying in bulk means getting more for one’s money or getting prices reduced for economies of scale.

### ***Ease of food preparation/cooking***

- Shorter food preparation and cooking time (10 respondents)
- Bulk preparation (1 respondent)
- Ease of preparation not paramount (1 respondent)
- Time consuming preparation not an issue (1 respondent)

### ***Shorter food preparation time***

Many women responded to our question about convenience in relation to food preparation by talking about the need to avoid negative features of the preparation methods of some of the foods they prepare. The main feature mentioned was the long preparation time, and the minority talked about cumbersome or stressful preparation methods.

*“... Convenience is to cook foods which are not time consuming and not difficult to cook for the child.*

*“Convenience in feeding a child, to my understanding is preparing a food that does not take much time to prepare like milo tea, bread, gari soakings with milk and the rest, these foods do not*

*consume time and you don't have to go to the market. So it is the easy way of preparing food for the children".*

Caregivers mentioned that particularly when children were hungry they would avoid spending too much time in food preparation or avoid creating the discomfort of hunger (prolonged) by cooking meals that are less time consuming.

*"For me convenience in feeding a child is to prepare food which is not time consuming, easy to prepare so that I can feed the child without making her cry while hungry."*

*"Convenience is that you will not spend too much time in cooking when the child is hungry".*

### ***Convenience in feeding means out of home cooked foods***

Five respondents described convenient foods in the western sense of snacks and foods bought already cooked out of home. Reasons cited include not having to cook the food themselves. One respondent explains further that she would require more money to buy the ingredients to prepare the food herself; therefore buying already cooked food was a cheaper option to feed her family.

*R: Foods such as cooked rice that I can feed her without necessarily cooking them myself. This is because rice is sold around all the time.*

*I: What if you don't have money to be buying it always.*

*R: It is still cheaper to buy for the child than money to prepare it yourself, especially when you are hard up. Getting all the ingredients costs money.*

Other respondents did not offer further explanation beyond the fact that they didn't have to cook. There's a sense of respondents' appreciation of avoiding the preparation time/process by use of the phrase "don't have to light fire" as expressed in two of the four excerpts presented below.

*"Biscuit, bread, yoghurt, coke, Cerelac...: because you don't need to light fire to cook them".*

*R: Waakye, rice*

*I: Why are these foods convenient for you?*

*R: As for these foods they are sold here so once I have money I can buy some for her.*

*I: So what makes them convenient for you?*

*R: The fact that I don't have to light a fire to cook. I buy them already prepared.*

*"Getting it already prepared from the roadside is also convenient for me, like the Hausa koko for instance".*

*"Because I buy his Hausa koko (and not have to cook myself), it makes his feeding convenient for me".*

### ***Convenience means foods that satisfy for longer***

To 3 respondents convenience in feeding mean their IYC fed on foods that kept them fuller for longer so they didn't have to "worry" about feeding them again.

*"I give that food to him, it takes time before he eats again but with something like koko, I need to give him some soon after because he will soon be hungry".*

*"The convenience in feeding V is that once she takes Hausa koko she doesn't worry much about breast milk or feeding on me".*

*"Convenience in feeding means once he eats the food, then I'm free to do what I want; because he won't be crying in hunger or as the mother you won't be occupied with finding food for him to eat, so you're free to attend to other chores and duties."*

Only two respondents would acknowledge that regardless of the time consuming preparation nature of most foods she cooks them anyway. The second respondent, due to her state of pregnancy prefers to avoid stressful preparation methods; otherwise she's not much fazed by how convenient or not the preparation method is as long as the food is healthy.

### **Ease of food preparation**

#### ***Positive orientations***

A few caregivers mentioned that convenience or ease of preparation was of no/or little importance to them, declaring that any difficulties associated with the food preparation process were inconsequential to feeding their IYC. They opined that availability and eating healthy was of more importance, while one care giver explained that she had limited options for food choices anyway which seem to influence her view. The interviews reproduced below capture the content analyses.

*"As for cooking it involves some work but no matter what you'll have to cook so it's not a problem for me".*

*"When one is hungry, there's nothing like convenience in preparing the food or even feeding the child. If you have to cook you have to cook and if you are hungry you will eat".*

One respondent interestingly highlighted the convenience associated with health benefits of home cooked food.

*R: Cooking always involves some work, so it's not a bother to me. I actually think cooking at home is more convenient because it helps to prevent diseases in the family especially among the children.*

*I: Why is that important or convenient?*

*R: Because if the children are not sick, it puts you at ease as a mother and they are also healthy and strong. It also saves you the cost of medical treatment if they are not sick".*

### **Influence of others as value dimension**

In many cultures, the opinions and views of other household or family members may be important influence on what caregivers feed young children. For example, mothers and mothers in law often have strong views about what and how to feed IYC and this influences what mothers do. We included this value dimension to gauge caregivers' perceptions on extent to which their child care and feeding decisions are influenced by 'others'.

We sought to understand who (if anyone) wields influence on caregivers in issues of feeding of IYC. To obtain caregivers' views on this value we asked respondents *"I would like to know whether other people's opinion influences the way you feed (name of child)"*. If respondents responded in the affirmative, they were asked who it is and further asked how this/these person(s) influence(s) them. Besides telling us who influences feeding practices of young children, caregivers also detailed some of the advice they receive from various influential people in their lives when it comes to their care giving responsibilities.

While some respondents mentioned multiple sources of influence which in most cases included health professionals, mothers/mothers-in-law, the media, friends and siblings others mentioned only one source, topped by health professionals. In most cases health professionals are acknowledged for their knowledge and expertise, while mothers are appreciated for experience that comes with being older. Below are a couple of excerpts by respondents mentioning multiple sources of influence.

*R: Yes; nurses, my mother and friends.*

*I: Why these people?*

*R: The nurse has knowledge about child care; my mother is older so what she says is good; and for my friends, perhaps they know something that I don't know so when they tell me I will listen."*

*"Yes, .....advice given at the hospitals, on the radio and the television. Even if I'm walking in town and I hear something concerning the child's health or feeding, I will stop, make time and listen".*

The content analyses of responses identified for each of the key influencers are presented in more detail in order of number of mentions from the highest to the least.

### ***Health professionals***

The strong influence of health professionals mentioned by 22 out of the 32 respondents reinforced the insights that emerged earlier in the interviews. Many respondents made reference to having received advice from health professionals including doctors and nurses especially at ante natal and post natal care clinics (weighing) regarding care and feeding of IYC. The majority of caregivers acknowledged the professionalism of health professionals and respected their advice for being knowledgeable in their chosen professions as reported in the two interviews below.

*R: Yes I always consider the advice of the nurses at the weighing because they teach us how to feed and prepare nutritious food for our children.*

*I: Are they the only people whose advice you take?*

*R: Yes*

*I: Why?*

*R: Nurses have been trained to take care of pregnant women and also teach us how to take care of the children as well.*

A few however pointed out that sometimes the information from healthcare professionals on what to feed their IYC was limiting due to financial constraints or the children's own preference as evidenced from these interview excerpts:

*"I always consider the opinions of the nurses at the weighing (post natal clinic), but sometimes I might not get money to prepare all that they have been teaching us but the little money that I get I try to prepare nutritious food for the children to eat for them to be healthy."*

*R: I always use my discretion to cook for the child.*

*I: Why do you use your own discretion in cooking for the child?*

*R: It is not always that I use my discretion, at times I do consider the advice of the nurses; some of the foods they might ask you to give to the child may not be liked by child.*

*I: What are some of the foods the nurses advise you to give to the child?*

*I.: For example they recommend Cerelac, tom brown etc, but my child does not like any of these foods.*

### **Mothers**

Next to health professionals are mothers, mentioned by 7 caregivers, whose influence is usually about advice on what to feed their children.

*"Other people's influences sometimes determine what she eats. My mother is the major influence; she normally decides what we should be giving her at a particular time"*

*"No other person except what my mother decides or does for her. She is the main care giver of the child. Anyway, sometimes I get advice from others to give Lordina more kontomire stew".*

### **Media**

Five respondents mentioned radio/TV among their sources of influence of IYC feeding. Information from these sources is similar to the health professionals; healthy food choices and food safety.

*R: Just as when you came you heard, they usually teach us some of these things on radio.*

*I: What things?*

*R: Things about healthy eating for instance foods that make a child healthy.*

*I: What are some of these foods?*

*R: Kontonmire and fruits.*

*"Yes, the things they say at weighing and on radio; e.g. don't let flies settle on the child's food."*

### **Husband or child's father child**

Mentioned by 2 respondents as a source of influence, the husbands' influence is mainly derived from his authority as the father figure. While one respondent mentioned the father's positive influence in suggesting new foods, the second makes reference to the need for the husband's consent to try out ideas from other sources.

*R: The father also suggests foods when he gets to know they are good.*

*I: So what are some of the suggestions the father gives?*

*R: Oh when the new Cerelac product came and he saw the advert on television, he asked me to try her on it if she will eat and she liked it.*

*“As for my husband even if they say I should do something and he does not allow me I can’t do it because he has to take the responsibility for the children because they are his children. “*

### ***Mother-in-law***

Unlike other Ghanaian cultures such as in the Northern Region that mothers-in-law wield strong influence, only two respondents made reference to their mothers-in-law as sources of influence on IYC feeding. Even so, not much was said about how much they influence the feeding decisions.

### **Summary and conclusions**

In part one of this chapter we present findings of the cultural interpretations respondents give to the concepts associated with IYC feeding which we refer to as values. The content analyses indicate respondents’ understanding of questions and concepts and are able to articulate their views in the interviews. The majority associated healthiness with particular foods and some food characteristics (such as blood giving) that contribute to a healthy diet. Healthiness is also perceived as foods that create or facilitate positive outcomes including growth promotion and energy giving among others. A few respondents portrayed their awareness of nutritionally balanced diets as qualities of healthiness in IYC feeding.

Food safety and hygiene was also addressed by some caregivers as indications of healthiness, identifying clean and sanitary cooking environment and practices as key to achieving this. Foods that prevented illnesses were only mentioned spontaneously a few times as being healthy while the same prompted question for the sub value dimension on illness prevention found many respondents limiting their knowledge to fruits. An interesting observation by a couple of respondents related to healthiness in the context of unfrozen foods and foods not grown with chemical fertilizers.

Respondents also mentioned a variety of foods that promote the sub health value dimensions presented to them, although many had difficulty identifying foods that prevented diarrhea and those that enhanced appetite. The discussions provide some evidence of the interactions the care givers in Gomoa East have had with the formal health system, as well as with other sources of public health messages. Many references are made to having obtained information and advice from health workers, some of which are sound others rather scientifically questionable.

The concept of child food acceptance in IYC feeding is also easy to grasp with caregivers identifying two main aspects: the characteristics of food that lead to acceptance as well as the feeding process that facilitated child acceptance as well as ease of feeding. There is more cultural consensus for tasty foods/foods that taste good than there was for the other food attributes such as visual appeal and aroma.

The cost value was one that seem to generate the most emotions, as mothers seem to judge their worth by their ability for provide for the IYC which may sometime be constrained by affordability of food stuffs. Seasonality or pre harvest conditions contribute adversely to how expensive the cost of

food is perceived. Many mothers discount any negative associations with costs insisting that IYC did not cost much anyway especially if they were feeding on family foods.

The question of convenience in terms of ease of access was addressed by referring to the four main themes of close/easy proximity to place of purchase, easy availability of ingredients and food stuffs from farms and in barns at home, ease of access to money for food purchases as well as buying out of home already cooked food. The last two themes were expressed by the minority compared to the first two.

Ease of food preparation was discussed with reference to the preparation time and or effort, with the two main perspectives of the need to avoid time consuming and energy intensive preparation methods especially when the IYC was hungry and exhibit discomfort by crying. It is also noteworthy that many of the caregivers discount the importance of the ease of food preparation relative to the other values, mainly because cooking and feeding of the IYC was considered intrinsic to the nurturing roles of caregivers.

Similar to ease of acquisition, the minority positively refer to purchasing out of home prepared foods as convenient foods. Not only is this considered less time consuming, it is also a cost saving measure especially for foods that require a lot of ingredients to prepare. One interesting interpretation of convenience perceived as food being able to satisfy for longer, is mentioned by the minority and is linked to being able to reduce the incidence of feeding and to free up their time for other duties.

While the majority of respondents spontaneously attribute their knowledge and awareness of healthy foods and good nutrition to health care professionals, we specifically also address who (if any) influence caregivers in their feeding decisions. Unsurprisingly, there's cultural consensus regarding the role of healthcare workers as influencers in providing sound information and education on health and nutrition messages to reinforce positive healthy feeding practices or change negative perceptions and behaviors.

## **PART 2: RATING SPECIFIC FOODS IN RELATION TO THE VALUE DIMENSIONS**

Part 2 of this chapter focuses on the results of respondents' rating of various foods and drinks frequently consumed against the value dimensions. To start this exercise, the interviewers explained the purpose of the module and how it is and then presented to the respondents pictures of the 20 foods we wanted them to assess. The foods presented were foods that the key informants reported in the free listing exercise selected to reflect a high salience for respondents: they were foods that were frequently mentioned and were at the top of respondents' lists of foods for infants and young children.

The respondents were also introduced to the concept cards, which consisted of 5 concepts that were labeled Healthiness, Cost, and Convenience - Ease of Acquisition and Ease of Preparation and Acceptance by IYC. As the preceding interview topic was about the concepts, we felt that respondents were already well-oriented to the general task and its purpose. In fact, we expected that the exercise must have been a welcome relief for both the respondents and the interviewers, after the intense and lengthy discussions that preceded them.

Table 7.5 shows the ratings for the 20 foods and drinks consumed by IYCs of the 32 respondents in Gomoa East. These are mean scores derived from the ratings of the number providing a rating for each value of a highest score of 5 and lowest of 1 on each of the 5 values.

The food perception ratings very much reflect respondents' views expressed in part one of this chapter.



**Table 7.4: Caregivers' perceptions about foods they feed their IYC (N= 32)**

<b>Food</b>	<b>Health</b>	<b>Cost</b>	<b>Child Accept.</b>	<b>Ease of Acquis.</b>	<b>Ease of prep.</b>
<i><u>Porridges and beverages</u></i>					
Koko	1.6	4.7	2.7	4.7	4.6
Koko+enriched foods	4.7	1.3	3.7	2.4	4.0
Hausa koko	2.8	4.7	3.4	3.7	4.7
Hausa koko+milk	4.4	1.9	3.8	2.9	4.6
Cerelac	4.1	1.5	4.4	2.8	4.9
Tea+milk	3.8	2.4	3.9	2.9	5.0
Milo+milk	4.2	2.0	4.4	2.8	4.9
Home processed tom brown	2.5	3.8	3.1	3.6	4.0
Multi grain home processed tom brown	4.3	2.2	3.1	2.7	3.2
Powdered milk	4.0	1.4	4.4	2.4	4.8
<i><u>Staple foods</u></i>					
Rice+stew	4.3	1.8	4.7	3.9	2.4
Fufu+palmnut soup	4.2	2.2	3.6	3.9	1.3
Fufu+light soup	3.9	2.0	3.3	4.0	1.2
Banku+okro stew	4.1	2.5	4.1	4.4	1.6
Mpotompoto	4.2	3.2	3.0	3.9	2.4
Yam+kontomire stew	4.4	2.1	3.9	3.7	1.9
Waakye+stew	3.0	2.8	2.9	4.0	1.8
<i><u>Fruits</u></i>					
Pineapple	4.3	4.5	3.6	4.5	4.9
Mango	3.8	4.7	2.7	3.0	4.8
Orange	4.5	4.9	4.3	4.8	5.0

With regards to the porridges and beverages group, all food types were positively perceived on ease of preparation, except multi grain home processed tom brown which had an intermediate mean score of 3.2. On healthiness, enriched koko was rated healthiest and plain koko the least healthy for the obvious reasons that the former was more nutritious as summed up by one respondent in the following excerpt.

*“Koko with enriched foods has other ingredients that are more nutritious than just the koko alone”*

Home processed tom brown and Hausa koko also scored comparatively lower on healthiness. Respondents’ awareness of the nutritious value of milk is evidenced by the higher scores awarded to milky foods compared to the ones without milk. Adding milk to these food items obviously raises their healthiness credentials and also makes them more acceptable to children.

While the least healthy food items in this food group are also the least costly, child acceptance of koko without milk was also rated lowest at 2.7 mean score. It appears enriching porridges and beverages with milk and other protein based products seem to make them more appealing in taste to IYC. However, adding milk also seem to make these food items more expensive compared to the plain ones without milk i.e. Koko and Hausa koko both scored best on costs at 4.7 in comparison to the versions with milk scoring 1.3 and 1.7 respectively on the cost value. The dichotomy between the positive perception of child acceptance of milk and its perceived high cost is succinctly summed up by this comment from one respondent:

*“Every child likes porridges especially if there’s milk in it; but I can’t afford the milk.”*

Many homes makers who prepare banku as one of their staple diets are most likely to have already prepared corn dough at home which also comes in handy in the preparation of koko. Considering the high mention of banku as a staple among respondents it is not surprising that simple corn based food products are relatively cheaper. The positive cost perception of koko is summed up in the flowing comment.

*“Koko is not expensive for me. I have corn at home so all I need is to buy milk perhaps”*

It’s interesting to note that koko+enriched foods although home prepared, was perceived as the most expensive (1.3), albeit nearly as expensive as powdered milk (1.4) and Cerelac (1.5). The ingredients used in enriching the porridge are perceived to raise the cost of this food item. This is summed up by this comment by one respondent:

*“The added ingredients would cost more for this one (Koko enriched)”*

Milo, Cerelac and powdered milk obtained highest scores for child acceptance, reiterating caregivers’ comments that children seem to better accept manufactured/ processed foods. It’s more likely to be attributed to their enhanced taste rather than just being processed foods. One caregiver comments on the sugary content of Cerelac as a negative perception on child acceptance.

*“They like cerelac but I prefer not to give it to them because of the Doctor’s advice that the sugar in the Cerelac is not good for the children”*

### **Staple Foods**

All the foods within this group were rated highly on healthiness, except Waakye + stew that received an intermediate score of 3. While there were positive comments made about beans as a staple, a number of respondents have raised concerns about the perceived unhealthiness of saltpeter, an ingredient that is usually used in the preparation of waakye. The following comment represents this sentiment:

*“Waakye has saltpetre that causes them (children) to run, so I don’t like it”.*

Compared to the other food groups overall, staple foods scored lower on cost and ease of preparation (expectedly). Only mpotompoto obtained a mean score of above 3 on cost while all the others scored below 3. The addition of animal protein to these meals may make them more expensive to prepare, while the availability of produce from their own farms cushions the effect of the cost as these comments portray.

*“Ingredients like the meat in the soups make them expensive”.*

*“Once I get cocoyam from my farm, mpotompoto is less expensive and I can afford to prepare it.”*

*“Getting corn from the farm makes this food (banku) less expensive”.*

*“Fufu, the cassava, plantain and corn are easily gotten from our farm”.*

*“We get yam from the farm and the kontomire too, so it’s not expensive”.*

On ease of preparation none of the staples rated above average, the highest mean score of 2.4 was awarded to mpotompoto as well as rice+stew. Child acceptance of these foods was however more positively perceived with all scoring above 3 except waakye+stew.

### **Fruits**

The fruit food group relatively had the highest level of consensus across all values, with most scoring above 4 except mango which received intermediate mean scores of 2.7 on child acceptance and 3.0 on ease of acquisition. A few respondents commented on their IYC intolerance to mango, (causes stomach upsets and loose stools) this may account for the average score for child acceptance.

### **Summary and conclusions**

In part two of this chapter we discuss the outcome of respondents’ mapping of the various food items against the various values. The ratings indicate that while there is relatively higher consensus for fruits across all the values than the other food groups, value perception for the other food groups are more variable. Beverages and porridges are generally considered easy to prepare and the ones enriched with milk or other ingredients are considered healthier and more acceptable to IYC but more expensive. The perceived high cost of these enriched foods may be a barrier to the decisions to feed them to IYCs. Making nutritious foods affordable for IYC feeding is to be considered to foster their improved health and nutritional status.

### **PART 3: CAREGIVERS' PERCEPTIONS ABOUT THE RELATIVE IMPORTANCE OF THE VALUE CONCEPTS AS DETERMINANTS OF THEIR DECISIONS**

We developed this module to use in conjunction with the ratings of the individual foods and dishes described in part 2 of this chapter. This module was designed to examine perceptions about how respondents' values influenced their IYC feeding decisions. The six concepts we used in mapping their beliefs/knowledge can also be thought of as "values." It is generally acknowledged that both overt (conscious) and covert values influence our behaviors; thus, as an explanation of behavior, one's perceptions about the influence of values on one's behavior are incomplete, at best since some of them are tacit and not necessarily available for conscious discussion. However, any examination of values and behavior would be incomplete without the perspective of the actor herself or himself.

Another value introduced was that of Influence, which was further sub-categorized under "Influence of husband", "Influence of mother/mother-in-law" and "Influence of health professional" as sub dimensions.

As the caregiver respondents had just been asked to rate individual foods with the concepts presented above, we used these same concepts to ask them about influences on their behaviors. In designing the exercise, we felt it was important not to set up a forced choice situation in which respondents would have to create a hierarchy among the values. The forced choice technique is often used on the grounds that one gets a better understanding of how multiple factors are regarded. However, all of us have had the experience of making forced choices on a questionnaire that we felt did not reflect how we actually feel. Therefore, we asked the respondents to consider each of the potential determinants on a Likert-like scale from very important to not important. We used the same "game board" format that we used for the individual food ratings. We introduced the respondents to the rating exercise with the following instructions: *"All of these issues – healthiness, cost, and so on, are things we've just been talking about, and they may be things you consider when you decide what to make for your family. Probably some of these are more important to you than others. Could you put each of these cards on to the slot that shows how important they are for you? If you think a reason is very important, put it here (indicating high end) or if it isn't very important, put it here (indicating low end). You can also put it in between. If all of them are the same, you can put all of them on the same place"*.

Interviewers were required to note the respondents' comments and encourage them to talk about their rating choices, probing with further questions if they needed to.

The results of this exercise for our Gomoa East caregivers are shown in Table 7.6. The Table shows that caregivers, in making feeding decisions for IYC, rate highest in rank order, the values of "Healthiness and Influence of health professionals", "Costs", "Acceptance", "Influence of mother", "Ease of acquisition", "Ease of feeding", "Influence of husband", Influence of radio" and "Ease of Preparation".

**Table 7.5: Rating of values that affect caregivers' IYC food management Decisions (N=32)**

<b>Value</b>	<b>No. of times rating was assigned</b>
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**to Value**

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	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Mean</b>
Health	30	1	0	0	1	<b>4.8</b>
Influence of Health professionals	25	2	0	0	1	<b>4.8</b>
Cost	19	6	4	0	2	<b>4.2</b>
Acceptance	20	3	5	1	3	<b>4.1</b>
Influence of mother	11	5	5	3	4	<b>3.6</b>
Ease of Acquisition	14	3	2	2	8	<b>3.5</b>
Ease of feeding	7	9	4	5	5	<b>3.3</b>
Influence of husband	5	8	6	2	6	<b>3.1</b>
Influence of radio	6	5	7	1	8	<b>3.0</b>
Ease of preparation	6	4	7	3	11	<b>2.7</b>

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In general there are complexities associated with many decision making processes including that of care giving and feeding of IYC. There was some divergence as expected, in the views of respondents rating values similarly or at opposite ends of the scale. However in some cases similar reasons are given for rating values very differently, unearthing the nuances associated with each caregiver’s own personal circumstances and values vis-a-vis those of themselves and their family but also expected societal behavior, norms and attitudes. Not many responses indicate deviations. The discussion of the analyses are presented below in order of the rankings assigned to the value but to ensure clarity and a better flow, the “influence of others” value is discussed together.

**Healthiness**

The cultural consensus among caregivers, on “Healthiness” and “Influence of health professionals” as value determinants of behavior is unsurprising as we have already identified these perspectives in the early sections of this chapter. What we find interesting is the introduction of a few new attributes, benefits and motivations that the respondents introduce into the discussions explaining their thinking behind the mapping for healthiness. A number of sub themes emerge under healthiness some already discussed and a few, new.

***Healthy food equals healthy and strong body***

The major obvious theme of eating healthily is stay healthy and promote growth was cited by many respondents all rating this value 5. The following are a few supporting comments.

*“It is because we want to be healthy that is why we eat so it is important to make health considerations when choosing what to eat.”*

*“The health of my child is very important to me because it is the only way he will grow well and strong.”*

*“As for health it is even more important than having money so the ultimate aim of eating is to be healthy.”*

### ***Mum’s peace of mind***

While the majority of the mothers equate healthiness of food to physical and emotional well being of their children a few pointed out that this was also a means to a deeper level of seeking contentment and peace of mind for themselves. These respondents rated this value 5 with the following comments.

*“If my child is not healthy, I won’t be at peace; I will be worried and restless”.*

*“When the child is healthy I am happy and at ease as a mother; if not I’m distressed”.*

*“If a child eats well enough, and is healthy she will not worry you. All sorts of unnecessary cries will be avoided; hence she will always be healthy because she is satisfied”.*

For one respondent rating this value 5, the need to work and earn an income is also a trigger for considering the healthiness of food provided, to ensure that IYC in turn is healthy.

*“When the child is sick, I cannot work or live efficiently, so I need the child to be healthy so I can function at my optimum”.*

### ***Prevention of illness***

While the general obvious reason for rating this value is that of the need for eating healthy to promote good health, one respondent (rating this value 5) specifically mentioned that making healthy feeding choices helped to avoid sicknesses.

*“If your baby does not eat healthy food she will always be sick and you yourself you will suffer.”*

### ***Healthiness value not considered as behavior determinant***

Only one respondent rated this value 1 without giving much away, only stating as a matter of fact that health considerations is not a topmost priority in making feeding decisions as captured in her comment below.

*“I must be frank; these are never topmost on my mind”.*

## **Cost**

### ***Affordability a challenge***

Rated 3rd to Healthiness and Influence of health professionals, cost usually raises the issue of affordability. The content analysis of the interviews showed that the majority of caregivers (15 respondents) who rated this value a higher score of 5 or 4 were concerned that access to money was the prerequisite for acquiring food to feed their family. The following quotes capture the essence of this analysis:

*“If I don’t have money, there’s no way I can feed the child”.*

*R: Money is the most important of all the cards you have shown me.*

*I: Why do you say money is the most important?*

*R: Because without money none of these cards you have shown me can be executed.*

A few respondents again reiterated how affordability could become a barrier to achieving their desired outcomes for feeding their IYC. The following respondents whose comments are reproduced here rated cost high scores of 5 and 4 respectively.

*“When food is cheap it’s more convenient for me because I can afford to buy.”*

*“Because child’s father is the one that provides money for his feeding, it doesn’t worry me that much. However, when there’s no money, I can’t buy him food, so cost becomes very important.”*

*“The cost is important to me because if I can’t afford it I feel guilty as opposed to the fact that I have money but cannot acquire it because it is not available.”*

Interestingly, three respondents sharing similar views rated the cost value very differently at opposite ends of the scale (1 and 5) with two explaining that cost of food had to be dealt with anyway, therefore they would resort to borrowing when they needed to and for the third the option and assurance of being able to buy food on credit (from neighbours) did not make cost of food a priority or of much importance. The following quotes are illustrative:

*“The cost is not so important to me because if it comes to the worst I can borrow money”.*

*“As for the cost, everyone has to deal with it one time or the other so if there is something I need to buy and there is no money, I will borrow”.*

*“For me money is not my priority because here we don’t always use money to buy everything, once you don’t have money and you go to your neighbour to credit and pay later, they will give it to you so money or no money you will be able to feed your family because we live as a family here.”*

## **Ease of acquisition**

There were no new themes emerging from the content analysis of the comments made for the value perception rating for ease of acquisition. Respondents reiterated views expressed earlier, on the relative importance of this value. Those who rated this value high needed to travel to acquire food items while those who rated intermediate or low scores are likely to own their farms from where they easily acquired food or lived in communities with close proximity to outlets for purchase of food items. The following respondents rated this value the least score of 1.

*“This is not a problem because all the things I give her are within reach”.*

*“It is because I am able to get most of the food stuffs I need either from the local market here or from the farm; and because we have most of the food stuffs from the farm, we get some of the money to buy other things like fish which otherwise we would not get money to buy”.*

### **Child food acceptance**

Ranking 4<sup>th</sup> with a mean score of 4.1, the content analysis of the responses shows a number of themes presented in the following discussion.

#### ***A child who accepts food and eats well is healthy***

Children’s health needs are linked to the value in the sense that they ought to be well fed to remain healthy. IYC Food acceptance therefore drives feeding well and subsequently makes healthy children. Mothers and caregivers also expressed contentment for both mother and child when children accept food as shown from the following statements from respondents who rated this value 5.

*“When he eats well I’m happy because I know he’ll be healthy”.*

*“When he eats well, it improves his health and that is important”.*

#### ***Child food acceptance gives caregivers peace of mind***

Mothers crave their own comfort and peace of mind in ensuring that IYC accept food and feed easily as summed up in the following comments.

*“If she doesn’t eat she can’t be healthy and a hungry child can cause a lot of distractions and stall your work”.*

*“If the child eats well, I can also have the freedom to do my work because he’s full. If he’s hungry, he won’t allow you to do anything”.*

*“The child accepting the food is important to me because if I go through all I have to go through to prepare the food and she can’t eat, I can’t have peace of mind. When she eats then I have peace of mind”.*

#### ***Food is wasted/worked in vain***

The need to avoid waste in time and resources drives food choices for child acceptance of food and ease of feeding as the following comments imply.

*“If I prepare food she doesn’t like I can’t force her and all my work would have been in vain. I would have wasted my money”.*

*“There is no point cooking if the child will not accept the food, so acceptance is important”.*

#### ***Children should like/enjoy food to accept it***



Four respondents reiterated that children should like what they eat, although each scored differently (5, 5, 4, and 2 respectively) on the perceived importance of the value. Child acceptance was therefore considered important to the feeding decisions.

### **Ease of feeding**

Similar to the comments made for child acceptance, respondents mentioned the need for IYC to feed easily, enjoy their food and subsequently grow healthily. Mothers also expressed the need to avoid frustration both for mother and child and therefore the importance of IYC feeding easily. The following quotes are from respondents who scored this value 5 or 4.

*“When it is easy to feed, the child can eat well and is not frustrated”.*

*“If you feed him the food and he doesn’t eat it’s worrisome”.*

*“This (ease of feeding) is always on the top of my mind. I consider it as the most important factor in feeding M because it will make my life more comfortable”.*

Mothers and care givers further explained that feeding their children is their duty as a mother and when the children fed themselves or were not fussy eaters, they as mothers enjoyed taking time out to feed them or made sure they prepared meals the IYC liked. For these reasons this value was not a consideration in making feeding decisions.

### **Ease of preparation**

Caregivers were also mindful that preparation methods were not too long, in order to avoid children having to wait for their food when very hungry, as described in the following responses.

*“Easy preparation is more important to me because I should be able to get it ready for her to eat at the time she is crying for it.”*

*“When the food is not easy to prepare by the time he is hungry and crying the food will not be ready. This is important to me because most of the times I give these foods that are easy to prepare first in the morning before I give her family foods”.*

*“When it comes to feeding my family, preparation is not a problem at all, I make sure I prepare food which is not time consuming but healthy for them”.*

### **Discounting the importance of ease of preparation**

Nine respondents expressed the view that ease of food preparation was not a determinant of feeding decisions. There are various expressions of this view with some declaring that it was not something that they even considered as they don’t find food preparation difficult. On the other hand there were those who acknowledged that some preparation methods may be difficult yet this was not a priority in deciding what is fed to their IYC. The different expressions of the same view are evident from these interview excerpts below.

*“For me, no food is too difficult to prepare. It is not the factor that will stop me from preparing a particular food.”*

*“I don’t find preparing food a difficult task”.*

*“I know some meals are more difficult to prepare than others but it is never my topmost consideration”.*

*“I think less about these. I consider it as my duty and as my duty I am glad to do it always”.*

These 2 caregivers stressed that the health and growth of their IYC was of more prominence and therefore ease of preparation was not considered as an issue.

*“What concerns me is he eating and growing well so the preparation is not a problem for me”*

*“What is important to me is the child eating the food not necessarily the preparation. Once he will eat it, I don’t mind preparing the food for him even if it may be difficult to prepare”.*

### ***Having access to money supports ease of preparation***

Rather than associating this with ease of acquisition respondents identified the pivotal role of access to funds when making feeding decisions.

*“Easy preparation is not my priority because when it comes to food preparation for my child, so far as there is money whether easy to prepare or not I will do it for her.”*

*“If there is money to feed the child, easy preparation and acquisition shouldn’t be a problem so far as the child’s health is concern that is why I placed it last”.*

*“Our food is monotonous – it’s either fufu or banku. But whether it’s difficult or easy to prepare is not an issue as I will have to cook anyway”.*

Moreover, most IYC foods, like the porridges were also considered relatively easy to prepare and few caregivers went out of their way to prepare foods specifically for their infants and young children if family foods were accepted by them.

## **Influence of Others**

### ***Influence of health worker***

With an average mean score of 4.8 and ranking first at par with “healthiness”, the importance of health professionals and the advice they offer to mothers is unequivocal. This is reflected in the high scores awarded to health professionals as a sub dimension of the influence value. We have already explained in the early parts of the report that caregivers place a high premium on the advice of health professionals. Rating this value mainly scores of 5s and a few 4s, the content analysis of the explanations and comments reiterate the views presented earlier.

The following extract from one respondent rating this value dimension a score of 5 sums up the high regard that caregivers have for health professionals and the role they play in influencing their attitudes and behaviours regarding IYC feeding choices.

*“Well when a health professional says something, it is because he or she knows what she is saying because they are trained; that is why they say what they say and it is also true so it is important to listen to them.”*

We noted in part one of this chapter that notwithstanding the pivotal role played by health workers, there were respondents who while acknowledging their value and the advice that they offer, felt constrained financially or by their IYC’s food preferences to implement what the health professionals advised. Three of such respondents rating this value 5, 3 and 1 respectively had this to say:

*“I placed them here (5) because they might suggest something, but it all depends on the amount of money that you have, so you have to consider the money you have and what you can afford and cook something healthy for the family.”*

*“Advice from these professionals may be good but all depends on the acceptability of the food by the child”.*

*“Advice from all these people might be good, but it all depends on what you have available, so I cook what I have for the child”.*

### ***Influence of others – mother/mother in-law***

With a mean score of 3.6 the influence of caregivers’ mothers in the IYC feeding decisions are reiterated in the views presented in part one of this chapter. Firstly their experience and knowledge of childcare (not limited to feeding) is acknowledged by many respondents. There were some respondents, however, who did not consider their mother’s influence as much, especially where decisions depended on access to funds for feeding.

### ***Influence of husband***

In part one of this chapter, where we elicited from respondents spontaneous responses regarding what the values meant to them, not many respondents mentioned that their husbands or partners had much influence over what they fed to their IYC. The only theme mentioned by 2 respondents was that of respecting the authority of the husband This was reiterated by more respondents in this section of the module.

### ***Importance of respecting husband’s authority as provider***

In the supporting comments reproduced below, respondents perceive their husbands’ should gain their respect for their financial authority. Expressed in different ways, was the concept of the husband whose influence was direct as in actually making decisions for the food choices. The following 2 excerpts suggest that due to their financial influence within the household husbands tend to influence the feeding decisions and food choices as well.

*R: When my mother in-law does not decide what we should eat, my husband does  
I: Do they decide what to give IYC too?*

*R: Yes because my husband is the one who will have to give me money for it.*

*I: Does your husband actually tell you what to feed the IYC?*

*R: Yes.*

*"I need to also listen to my husband because he gives the money to buy food. He tells me what to cook most of the time when he gives me the money".*

There was also another angle to husband's influence expressed as an indirect one, which seem to emanate from the wife/mother as an act of deference to the breadwinner of the household. Respondents do not indicate in any way that, husbands actively influenced feeding decisions, however they imply that because they are the breadwinners, husbands must be accorded that opportunity and respect to influence feeding decisions. It is as if it is almost expected and a fait accompli.

*"It is my husband who gives money for food so it is important to do what he wants".*

*"He gives the money for the child's feeding, so what he says I have to take it, or he could complain to his mother".*

### ***Husband the family head***

Similarly, the position of heads of family/households place husbands at a position where their opinions should matter, however there is some ambiguity as regards how this happens practically in everyday life.

*"My husband is the head of the family so what he says should be of interest to me".*

*My husband is the man. He knows more than I do".*

### ***Husband's influence only considered sometimes***

Three respondents rating this value 3 and the fourth rating it 4, without giving too much away, seem to express the view that this was not a priority for them, although they would "sometimes" consider what husbands say with regards to feeding decisions for their IYC .

*"I sometimes consider what is said by him."*

*"It is not all the times I consider what he says."*

### ***Balancing Husband's influence with influence of others***

Another set of respondents, all rating this value 4, acknowledged the influence of their partner's but only second to that of health professional and mothers who have more expertise, experience and knowledge in childcare.

*"Husbands may suggest their views, but the health workers have been trained specially to take care of children and provide advice on their foods as well so I will have to listen to the health worker before all these people although they might be experienced."*

*“He is usually not at home but because he would give the money for the child’s feeding you would have to listen to him; though he has not as much experience as my mother has”.*

*“I will take my husband’s advice, but I believe those I mentioned first (health professionals and mothers) have more knowledge than he has”.*

### ***Husband’s influence not considered***

While we have so far discussed wives considering their husbands’ influence as a determinant for feeding decisions, we will now turn our attention to the contrary views held by other caregivers regarding the role husbands play in their feeding decisions as care givers. This perspective from the content analyses of responses is one of husbands not having much or any influence at all on feeding decisions for various reasons: There are the three rather critical responses of what appears to be lack of interest on the part of fathers in their children. These scored very low scores of 1 and 2 on this value.

*“My husband is no longer interested in the relationship so what he says is not as important to me.”*

*R: His advice is not good.*

*I: Why is this so?*

*R: He doesn’t even give any advice actually.*

*“He’s usually concerned with going to the farm, so his advice is not that good as compared to the doctors who take care of our health.”*

### ***Influence of radio***

Respondents reported three attitudes to how much they were influenced by the media (radio). One group perceive the radio as a force for good and source of useful information on IYC care and feeding, while the second seem not to have an opinion more or less in the middle ground, the third group however dismiss them as not reliable. What is interesting about the first group is that although they all expressed positive sentiments with equally high scores of 5s and 4s for radio as an influencing source, the comments are rather generic and lack specifics on how they are actually influenced by this source

*“The media brings to bear new findings.”*

*R: The radio usually announces the findings that the health professionals have so it makes it credible.*

*I: Even about feeding a child?*

*R: Well sometimes.*

*“I sometimes take advice from these people, but I always weigh such advice against my ability to implement such advice.”*

*“The media is also able to educate when the health worker has not talked about it, so we learn from them too”*

*“Things being explained on the radio can be confusing though beneficial. This is because you wouldn’t get to have certain illustrations as is done at the weighing centres where they give illustrations to improve our understanding.”*

Contrarily, the second viewpoint depicts a negative perception of the media as source of influence, generally because the media is not considered credible and or reliable as portrayed in these comments.

*“As for the media they say things but it is not all things they say that are true”.*

*“I don’t really consider what I hear on radio”.*

*“As for friends and the media they can mislead you because they may not have the facts”.*

*“The radio presenter’s take their information from what the health workers say; but at times they could also alter it, so it’s not so reliable”.*

## **Summary and conclusions**

In part 3 of this chapter we present the findings of mapping the importance of each value as a determinant for IYC feeding decision making for IYC feeding. The cultural consensus for the importance of health and the influence of health professionals is confirmed. Majority of respondents rated these two values the highest scores as well as ranking the top two for the average scores of 4.8. Cost and child acceptance followed as the 3<sup>rd</sup> and 4<sup>th</sup> in terms of ranking with nearly two thirds rating these 2 topmost scores. They also both score above average overall of 4.2 and 4.1 respectively. “Influence of mother” and “ease of acquisition” rank next with 3.6 and 3.5 average scores; with about a split between the sample scoring these above average and below the average mark. The remaining values are so variably scored that there’s little cultural consensus. Ease of preparation scored the least with 2.7 mean score, which seems to confirm respondents’ perception of discounting this value relative to the others.

## **Overall summary and conclusions**

The data presented in this chapter were obtained through interviews with the sample of caregiver-respondents, using a cognitive mapping methodology to “map” their beliefs/knowledge about infant and young child feeding. We present the results in three parts.

In Part 1, we explore caregivers' definitions of concepts we use in the mapping exercise. These concepts are: "healthiness", "child acceptance," "cost" and a set of related concepts depicting convenience: "ease of preparation," and "ease of acquisition." We first consider the types of responses to the concept of "healthiness." The most outstanding feature of the data is that over two-thirds of the respondents discussed this concept by describing food characteristics drawn from biomedical-nutritional science. They often named specific macro and/or micronutrients and explained why foods that contain them are healthy."

The respondents' discussions concerning the concepts of child acceptance are also noteworthy. Here two approaches emerged. One is focused on characteristics of foods that lead to child acceptance, and the other is focused on managing the feeding process. We identify that tasty foods and foods preferred by IYC make then accept food easily.

We also see that the associations between food, diet and health are complex and multi-dimensional. Many of the care givers' perceptions reflect an appreciable level of nutritional knowledge, which seem to have become an integral part of "local cultural knowledge." Some of the ideas are relatively vague devoid of any substantiating arguments. This is even more so important, considering the reported high level of influence of health workers on care givers' choice of diets and foods for their children in the cognitive mapping section presented in part 3 of this chapter.

In Part 2 we present the results of the cognitive mapping task in which respondents were asked to rate 21 different foods in relation to the concepts listed above. The rating utilized a 5-point scale (e.g. from "very healthy" to "not very health.) Among the highlights in the findings from this task is that the porridges and beverages group of foods scored relatively higher on ease of preparation and child acceptance, making them core IYC foods. They also do well with respect to healthiness; particularly those with milk or enriched with other ingredients. Milk (in porridges and beverages) is seen as greatly enhancing the healthiness of foods, but increases their cost. The fruit food group relatively had the highest level of consensus across all values except mango which received intermediate mean scores on child acceptance.

In Part 3 we present the results of the rating task in which caregivers are asked to assign values on a five point scale for each of the concepts, which this time also included "influence of others." Health and the influence of health professionals are the values that receive the highest ratings and that also have the highest cultural consensus. Doctors and community health workers are viewed as sources of reliable advice on health and healthy feeding practices.

The importance of cost is also affirmed. The discussions on respondents' rating and perception mapping of cost have shown that this value also has many facets and is associated with many complexities for respondents as a behavior determinant. The various scores given to this value are not by themselves fully explicable of respondent's perception of it with regards to making feeding choices. It is therefore important that the comments that accompany the value mapping exercise are considered in interpreting what cost as a value mean to caregivers of IYC. Many respondents however, came across as living in a cost-sensitive mindset, understandably having to grapple with stretched household feeding budgets.

Mothers and mothers in law are respected for their opinions as experts with experience in childcare generally, usually handing down culturally embedded approaches to IYC feeding. Husband's influence on feeding decisions was mainly by providing financial support or food items for the household, while a few were reported to have not much involvement in what was fed to the IYC. Respondents' perceptions of the media's influencing role ranged from acceptance, to indifference and to one of outright rejection as credible sources of information as shown by the variable ratings.

The convenience value is multi-faceted and the complexities associated with this value dimension are very well captured in respondents' comments; some appreciating that this value is important in making decisions for IYC's feeding and the others discounting the value. This dichotomy is contextual and influenced by several factors as we have discussed earlier, relating to both caregivers' circumstances and the food choices that they make. There was a need to balance views on convenience with others such as health and costs considered more important in the hierarchy of importance for IYC feeding. Convenience or ease in food preparation was considered the least important

IYC acceptance of food and ease of feeding were more or less two sides to the same coin. Caregivers were very much in control of both values and employed both positive food characteristics and feeding practices to achieve these. Where IYC fed on family foods, caregivers were more relatively at ease in meeting the feeding needs. Complementary IYC feeding which required extra or additional food choices however, sometimes presented financial challenges for caregivers.

In conclusion, the discussions with respondents we have highlighted in this chapter of the report reveal the complexity and diversity of care givers' "conceptual maps" related to the value dimensions we explored with them. They provide evidence of differences in orientation, beginning with a tendency to highlight positive health-promoting aspects versus avoiding negative threats to health. They reveal the women's commitment to their children and to fulfilling their role as caregivers. They provide a window into understanding the constraints of poverty and the difficult decisions the women have to make about feeding their IYC in the face of scarce resources.



## **CHAPTER 8: SEASONALITY AND FOOD INSECURITY**

This chapter presents results of Module 4 in the FES Phase 1 study that dealt with food insecurity and the effects of seasonality on household food use in general and infant feeding in particular. We sought to understand how seasonal variations affect families, how families cope with the challenges of seasonal food insecurity and the consequences for diet. In particular, we sought to establish whether or not children are “buffered” from food shortages or decline in quality when there is less food in the household.

For the examination of the effects of seasonality on household food insecurity it is important to distinguish the basic components: a) food availability, b) food acquisition, c) food preparation, and d) intra-household food distribution. By food availability we refer to environmental and community contexts, particularly issues of what crops are being grown and harvested and what is available in the market place. Food acquisition refers to the household capacity to obtain the food it requires from the local environment and draws attention to use of home-produced foods, as well as acquisition from local markets through barter, payment, donation and credit. Within the context of food insecurity, food preparation calls attention to the modifications households make in recipes and substitutions of preferred foods for less desirable items. It also includes changes in the number of meals and snacks eaten over the course of the day. Intra-household food distribution refers to modifications in the usual patterns of dividing foods among household members and differential allocation of foods. In this study the matter of food availability in the larger social environment was outside the scope of our investigation. This study did not examine the first component of food availability at the community level, except as it emerged as an issue from the perspective of households; therefore we begin here with the matter of seasonal aspects of food acquisition.

### **PART 1: SEASONALITY AND HOUSEHOLD FOOD ACQUISITION**

The term “acquisition” as used in this context refers to the foods that caregivers prepare for their families. As indicated in previous sections of this report, caregivers utilize a number of sources in acquiring food for their families and young children. These sources include: home production (from farming), purchasing from markets, local kiosks and neighbours, borrowing, gifts or buying on credit. Ghana, as is the case for much of sub-Saharan Africa is heavily reliant on rainfall. Like most parts of southern Ghana, the Gomoa East district experiences two rainfall seasons. The major rainy season is between March/April to June/July whilst the minor season is between September and November. The rainfall is generally low along the coast and gradually increases northwards. The rainfall pattern is highly variable with the mean annual rainfall ranging between 70mm and 90 mm in the southern coastal plains, which is mainly a coastal savannah and between 90mm and 110 mm to the north-western belt with semi-deciduous forest cover.

The Gomoa East district produces large quantities of food crops including maize, cassava, plantain and yam as well as fruit crops such as pineapple and pawpaw and vegetables. However, despite the apparent abundance the poor and vulnerable in the district face chronic food insecurity due to limited production, and access to financial capital to support farming activities. In Chapter 2 we saw that even though the majority of households (26 out of 32 or 81%) had access to land for farming the land sizes were rather small with most farming only up to 3 acres and about 58% (15 out of 26) farming only 2

acres. Unfavourable weather conditions are also known to affect food production and distribution in the district leading to high food prices especially during the lean season. Together the limited access to land and unpredictable rainfall pattern have implications for crop yields and food availability as clearly illustrated by this dialogue between an interviewer and a respondent as she explains the complexity of seasonal food availability and feeding her family:

*R: When it comes to the amount of food that we have to feed our families the best time is from Christmas (December) to May. This is because at this time there is a lot of produce on the farm.*

*I: Does it mean you don't harvest till Christmas?*

*R: No we harvest for the first season during July-August but sometimes during that season, the rains are too much so a lot of the produce is destroyed but during the second season for which the produce is usually ready in December, the crops are more likely to yield a lot more because there are relatively less rains.*

*I: Does this mean you cultivate more of the crops during the second season?*

*R: No not necessarily, rather during that season the damage caused to the crops by rains is less.*

Three questions were used to gather information on the effects of seasons on food acquisition. In one question we asked: *“When it comes to the amount of food that you have to feed your family, what is the best time of year?”* A second question was: *“What is the worst time of the year when it comes to the amount of food you have to feed your family?”* and the third question was: *“Is there any time of the year when you have to buy food?”* The interviewers' probes for detail included asking for specification by month of the year, as well as discussion about the reasons for the answers.

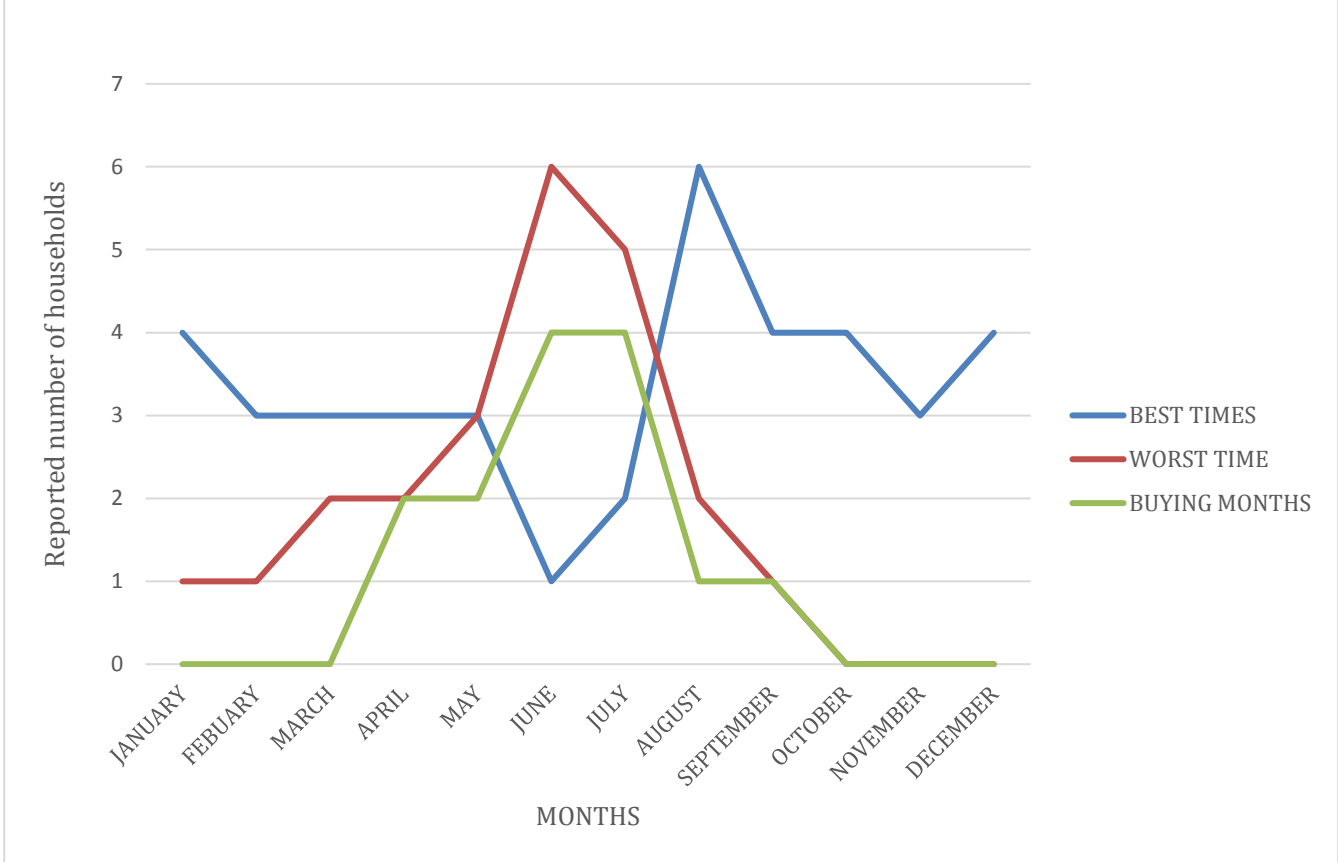
Our findings in Chapter 6 on food acquisition show that at the time of data collection in August/September, about two thirds of households, almost half and about a third respectively sourced maize and cassava (the major staples), plantain and kontomire and other key items of the diet (palm fruits, garden eggs, pepper) from their farms. These findings are informative for interpreting the results in Table 8.1 and illustrated in Figure 8.1 showing “best months” and “worst months” for food acquisition, as well as months in which households buy food rather than obtaining it from their own production. Respondents were not requested to categorize their situation for every month, which means that some months were neither “best” nor “worst” from the perspective of the individual. Overall the best months for feeding families starts from August, for periods of 2 to 10 months, up to May of the following year with August being the peak month. It is noteworthy that with the exception of June and July, which had the least mentions, all the other months were classified as best months for a third of households (about 38%), with more consensus for August. The picture for worst months and months when most families are buying food is much clearer. From August to May there is hardly any buying of food. Indeed October to March are months when no household is buying food and only a few households are buying food in April to May. Coincidentally, August to April received least mentions as worst months with May to July being the definite worst months for feeding families.

Putting all these observations together suggests that June and July are critical months for food acquisition. These months are perceived by respondents to be the worst months and are also months when most are purchasing food. On the other hand, for the rest of the year at least a third to half of families are eating food from their farms, and do not perceive themselves as purchasing food.

**Table 8.1: Perceptions about seasonality in food acquisition and purchase (N = 8)**

<b>MONTH</b>	<b>BEST TIME</b>	<b>WORST TIME</b>	<b>BUYING MONTHS</b>
JANUARY	4	1	0
FEBUARY	3	1	0
MARCH	3	2	0
APRIL	3	2	2
MAY	3	3	2
JUNE	1	6	4
JULY	2	5	4
AUGUST	6	2	1
SEPTEMBER	4	1	1
OCTOBER	4	0	0
NOVEMBER	3	0	0
DECEMBER	4	0	0

**Fig. 8.1: Perceptions about seasonality in food acquisition and purchase**



### **Best months for household diets**

Fig 8.1 captures the relationship of food purchasing to women’s perceptions about the “best” and “worst” months for household diets. There is an inverse relationship between months in which food is plentiful (“best months”) and food purchasing. On the other hand there is a positive correlation between months in which food is scarce (worst months) and food purchasing.

In response to the question of which the best months are in terms of feeding their families, all the respondents mentioned the harvest and post-harvest periods as the best time for feeding their families. This time was variously mentioned as being from August through May. Indeed in the local farming cycle these months traditionally coincide with the harvest and late post-harvest periods and the months indicated may therefore depend on harvesting times and crop yields for the major and minor rainy seasons. However as depicted in Figure 8.1 there seems to be some consensus around August to January and in some cases up to May suggesting a 6 – 10 month period of considerable food availability for most households. Respondents’ individual description of the best time/months for feeding their families is captured in the following narratives:

*“During this time (November/December to May) there is a lot of food because all the foodstuff would have reached their harvesting season. There is also no rainfall so you could go to the farm to harvest foods however, during June/July, you might not even be able to go outside to harvest food even though you might have some on the farm.”*

*“This is because at this time (August to May) there is abundance of food on the farm. Even if you don’t have food on your farm, you can buy from the market because it is not expensive.”*

*“Two months, August and September. This is the harvest season for corn and there’s abundance of food.”*

*R: Three months, between August and October. It is the best time. I: How does this season improve your families feeding? R: It is the harvest season for corn and so feeding becomes easier.*

*R: Three months in the year; From June to August is the best time. I: Why is that the best time? R: It is the best time because it is the rainy season, food grows well and in abundance. Food also becomes cheaper to buy.*

Caregivers advanced a number of reasons why these months were considered the best months of the year for feeding their families. What stood out from their narratives was that the best months are when:

- Food is in abundance since crops would have matured and be ready for harvesting
- Food grows well and in abundance
- There is very little buying of food and if food had to be bought it was cheap
- It is the harvest season for corn; there is abundance of food and feeding the family becomes easier

### **Worst times for feeding families**

According to the respondents the worst time of the year for feeding their families was between the time of planting and just before the time of harvesting. This is because during this time, most households had run out of food stock and are patiently waiting for their crops to mature. This period was cited as 2 – 4 months, from March through September with June to July being the critical months. Again as in the “best times” respondents’ mentioned various time periods to reflect their perceptions of the worst months and this may depend on their individual circumstances, as noted earlier for the “best times”. Months described as the worst months begin from March, ending in September.

*“When it comes to the amount of food that we have to feed our families the worst time is from May to August. This is because it is the planting season and usually during that time, the rains are so heavy that it destroys most of the crops so the yield is very little.”*

*“This is the worst time (May to September) because it is the planting season so by that time, the produce would not be mature for harvesting. At this time too, food is scarce so even if you want to buy it, it is very expensive.”*

*“When it comes to the amount of food that I have for the family, the worst time is from June to August. I: Why is that the worst time? R: This is because this time all the food on the farm would be finished and if you have to buy too it is expensive.”*

*“Two months, June and July. It’s the time for preparing the farms and planting so there’s less food.”*

*“When it comes to the amount of food we have to feed the family, the worst time of the year is from March to June. This is because there is not enough food, all the food you may have produced would have been sold and you would have to manage with the little left or even buy if you don’t have some at home. During this time, food stuffs too are expensive.”*

*“Four months, between April and July. Food is now being planted especially corn.”*

Within the period of food insecurity for families, all respondents said there were times when their families did not have food to eat from their own stocks and they had to buy food for a period lasting between 2- 4 months, with the exception of one respondent who said they never buy food and gave the following reasons:

*R: No we never buy food. We always have food on our farm.*

*I: What about when the yield is small as you said?*

*R: Madam our farm is big. So what I said is in terms of the yield not what is available for us to eat. Even when the yield is small we still get some to eat and then sell. As I am talking now we are harvesting maize but we still have some of the old stock in our barns.*

Respondents advanced a number of reasons for describing these months as being the worst for feeding their families. Their reasons include:

- It is the planting season and the produce is not yet mature for harvesting
- All the food would be finished and there is not enough food in stock
- Most households resort to buying food
- Food is costly and families cannot afford to buy as much as they wish
- Families tend to eat less
- Families tend to eat more of alternate foods (E.g Boiled cassava (staple) with ground pepper instead of kontomire (glv stew)

Respondents described the period as follows:

*“It is the time for preparing the farms and planting so there is less food.”*

*“I end up buying maize which I would usually not have to buy because I have it on the farm and my in-laws also have enough to give me some...”*

*“At this time too food is scarce so even if you want to buy it is very expensive.”*

*“This is because this time all the food on the farm would be finished and if you have to buy too it is expensive”*

### **Foods fed to family during best times and changes in IYC feeding**

To learn more about how seasonality affects diet, we asked caregivers to consider four questions: 1) *“Are there any foods you give your family during the best time that you don’t give during the worst time?”* We also asked: 2) *“Are there any foods you give your family during the worst time that you don’t give during the best time?”* We then asked the same questions specifically about feeding the index IYC. Our goal in asking these questions was to gather insights into how caregivers perceive seasonality challenges. As we do not have dietary data across different seasons, the data from the responses are best regarded as reflecting caregivers’ perceptions rather than “reality” from a behavioral, dietary intake perspective.

Some specific foods were mentioned by respondents as foods they usually consumed during the best times of the year. These include:

**Yam** (5 respondents)

**Plantain** (4 respondents)

**Cocoyam** (2 respondents)

**Cassava** (2 respondents)

**Rice** (2 respondents)

**Fufu** (2 respondents)

The roots and tubers or ampesi eaten individually or in combination, are usually accompanied by kontomire stew or in some cases, garden egg stew. Fufu (usually a combination of cassava and plantain) is eaten with light soup with a variety of fish (both fresh and smoked). The specific mention of light soup as an accompaniment to fufu in the best times is noteworthy because a lot more vegetables are used and it is usually cooked for a one-time consumption as compared to palm nut soup which is usually cooked in bulk to be consumed over several days. Light soup can therefore be described as a luxury mostly afforded during the “best time” period. Rice is also eaten with gravy/stew with fish which requires additional inputs.

With respect to changes in IYC feeding, during the best time of the year, majority of respondents (6) answered in the affirmative and the others said they did not change IYC feeding. For respondents who answered in the affirmative, the following explanations were advanced:

### **IYC is fed a variety of foods**

*“During the best times, I give her foods like bread, eggs, milo drink, cream crackers or short bread (biscuits).”*

*“During the best time I vary their foods. I am able to give E and E fufu and soup, rice, and kontomire, and also banku with any soup.”*

*“During the best times I am able to feed him foods like rice and stew, banku and stew, yam and stew, beans and stew, fufu with any soup.”*

### **IYC is fed as much as he can eat**

*“If there is food I give him as much as he can eat. That is, the family foods. I don’t prepare special foods for him”*

### **IYC is fed regular and special meals**

*“During the best time, the child eats the regular meals as mentioned already and special foods as well. Also because I am also eating well during those times, I also feed the child the same food from my own bowl.”*

### **Foods fed to family during worse times and implications for IYC feeding**

Respondents listed some specific foods in response to the question of the kinds of foods families eat during the worst times which are not eaten during the best time. These are foods that are less preferred or one pot meals which are consumed without any accompaniments as well as foods that can best be described as inferior. The foods mentioned are not only limited in variety but are also eaten with either pepper sauce (pepper with little tomato, onion and salt ground together) or no accompaniment at all. Indeed, these foods/dishes are described as “dried foods/dishes” in that they are not eaten with soups, stews and other sauces as compared with foods/dishes eaten during the best times of the year. The foods listed include:

**Cassava** (5 respondents)

**Gari** (3 respondents)

**Rice** (1 respondent); this is rice cooked in oil with salt normally referred to as “oily rice” or “angwa mu” and usually eaten alone without stew

**Yam** (1 respondent)

**Kokonte** (1 respondent); this is a dumpling made from dried cassava flour; usually considered cheaper and inferior version of fufu

With regards to whether IYC’s food changed during the worst time of the year for feeding their families, two out of the eight respondents claimed not to change their IYC’s food whilst the remaining six affirmed a change in their IYC’s diet as described by the following quotes:

*“During the worst times I don’t give all these I just give her the porridge or the Banku.”*

*“He eats the kinds of foods that I eat, so when there is no food, he also eats whatever food that I eat.”*

*“I give them whatever is available. Most likely, not varied at all. It can be the same meal throughout the day.”*



*“During the worst time, I can’t feed the child often, i.e. 3 times so I supplement with adequate breast feeding. I therefore tend to give her food twice in a day.”*

*“During the worst time I can feed him foods like gari foto, cassava ampesi and roasted corn. These are foods we usually do not even eat during the best season.”*

*“During the worst times, we feed him only koko.”*

The two respondents who indicated they did not change how they fed their IYC gave very different explanations. For one respondent there appeared to be no seasonal variations in household and IYC diet because food from their farm was available all year round and the household is self provisioning to the extent that food is never purchased. The following dialogue between the respondent and interviewer is noteworthy:

*I: Do you ever have a time when you don’t have enough food for the family? What do you do then?”*

*R: There is no time like that. We all work on the farm as it is a very big farm which can even feed us a whole year round. Now for instance we should be harvesting maize but we still have maize in our barns.*

*I: What about the index child, do you change how you feed him?*

*R: No there is no change, what I have to give him is what I give to him.*

*I: Do you have a time when you don’t have enough food for the family? What do you do then?*

*R: Yes, we share what is available for everyone to get some to eat. However we will all not get the usual amount we normally eat to be full.*

*I: What about the index child, do you change how you feed him?*

*R: She is small so I still give her what will make her satisfied. Even if I have to borrow money to feed her I will.*

## **PART 2: TYPES OF SEASONAL CHANGES IN DIET**

The discussions that were triggered by our questions on “best” and “worst” month foods reveal two different types of seasonal changes in household and IYC diets:

- i) Changes in specific foods that depend on having money to purchase them
- ii) Changes in specific foods that are due to differences in seasonal availability in household fields and gardens

The following are respondents’ narratives of the situation:

*“During the worst time we eat cassava ampesi with dandelion that grows by itself in the compound and ground pepper. But during the best times we eat the cassava ampesi with kontomire stew.”*

*“You eat foods that you are not even used to. Foods like gari, cassava ampesi...”*

*“We eat cassava with ground pepper and gari with pepper”.*

One respondent described an alternate strategy:

*“Yes I for instance will not entirely stop preparing corn-based meals during the worst season. Rather, I will not prepare corn-based meals as often as I would have in the best season because I would now have to buy corn.”*

### **Food insecurity and changes in food preparation**

The discussions with the caregiver-respondents revealed other aspects of household dietary changes during periods of economic stress and food scarcity. Respondents provided descriptions about how their food preparations and recipes are modified in periods of scarcity. Changes in how foods are prepared reflect two different strategies:

- i) Modifications to recipes because of reduced availability of foods from household production
- ii) Modifications due to a shortage of funds to buy ingredients that are used in preparing foods

Reduced availability of foods from home production is reflected in the preparation of vegetable stews and soups and the types of staples consumed. As can be deduced from the narratives above households consume more of cassava and its processed version gari. Consuming these with plain ground pepper and not stews suggests that fewer vegetables and other ingredients like oil and fish will also be used in reduced quantities or not at all.

### **Seasonality, meal patterns and intra-household food allocation**

Other ways in which families make adjustments to seasonal food insecurity involve alterations in the number of meals (typically shifting from 3 meals to 2 or even 1), alterations in when meals are eaten (extending the time gap between meals to adjust to eating only twice a day) and, most importantly, intra-household food allocation. The following dialogue between a respondent and an interviewer aptly captures these points:

*R: Yes usually there are times when we don't have enough food for the family like in January when the ground is so hard it is difficult to harvest produce from the farm. In that case we share what is available and eat it like that.*

*I: Do you mean you eat fewer times in the day or the amounts that you eat will be smaller?*

*R: Both.*

*I: Can you please explain.*

*R: If what we have will be enough for three meals then we will try and share it so that everyone gets a little for all the three meals. If it will be enough for two meals we share it accordingly.*

*I: In that case will the actual quantity you consume during a meal be less?*

*R: Yes it can be that that one too will be less but it not as often as the reduction in the number of meals.*

*I: So would you say that most of the time the reduction is in the number of meals but sometimes too it is in the actual amount*

*R: Yes*

*R: Yes, we share what is available for everyone to get some to eat. However we will all not get the usual amount we normally eat to be full.*

*I: What do you do then?*

*R: We get smaller amounts*

*I: Do you ever have a time when you don't have enough food for the family? What do you do then?*

*R: Yes, I sacrifice my food for the children*

*I: You sacrifice what you have to eat for the children you mean?*

*R: Yes, last three days in the evening the food available for the family was inadequate for all of us so I left it for the children and I went to bed on an empty stomach (Respondent got very emotional to tears at this point)*

The data from Gomoa East reveal the response to food shortage that is characteristic of families all over the world. The most common theme in caregiver's responses about how their IYC and other children are affected by food shortage was to describe their efforts to buffer their children by various means, particularly skipping meals and eating minimal amounts. Across the globe families' efforts to buffer children from food shortage has received a great deal of attention in studies that are aimed at understanding responses to hunger and food insecurity. Parental buffering has been described for virtually every society where investigators have examined household behaviors in the face of food scarcity. It occurs in resource poor countries and industrialized countries alike.

Caregivers offered many comments to explain to the interviewers why they buffer their children, particularly their IYC, in times of household food insecurity. Many of these statements directly or indirectly related to protecting their children's health and growth

## **Summary and conclusions**

The best time of the year for feeding families was identified as the harvesting and postharvest periods. On the other extreme is the worse time which respondents unanimously agreed as the period of planting and just before the time of harvesting new crops. The period of increased food availability was identified as beginning from August, for periods of 2 to 10 months, up to May of the following year with August being the peak month. Gomoa East has two distinct rainy seasons and hence two planting seasons, with variable crop yields.

Our analyses show that seasonal food insecurity is characterized by 1) changes in household diets resulting in changes in specific foods that are due to differences in seasonal availability in household fields and gardens and those that depend on having money to purchase them; 2) changes in how foods are prepared, reflected by modifications to recipes because of reduced availability of foods from household production and inability to buy ingredients due to a shortage of funds and 3) changes in meal patterns i.e alterations in the number of meals (typically shifting from 3 meals to 2 or even 1) and intra-household food allocation (serving minimal amounts or skipping meals all together).

There was a clear difference in the kinds of foods consumed during these two periods. While there was more variety in the foods consumed during the best time, there was less variety of foods during the worse time. Secondly, while foods consumed during the best season had soups, stews and other sauces as accompaniments, foods in the worst season were mostly “dried foods” with hardly any soup, stews to accompany them except pepper sauces in a few cases. To a large extent IYC food is affected by the best and worse periods of feeding families. Majority of respondents (6) confirmed changing IYC feeding from giving more variety of foods during the best times to offering less variety and less preferred foods during the worst times.

## **CHAPTER 9: CAREGIVER STRATEGIES TO MEET THE CHALLENGES OF FOOD INSECURITY**

In this chapter we present a review of the strategies caregivers and their families employ to meet the challenges of chronic, recurring seasonal food insecurity. To elicit information on coping strategies the following questions were posed to caregivers: *Is there any time of year when you have to buy food? How long (months) do you usually have to buy food? Do you ever have a time when you don't have enough food for the family? What do you do then?* All but one of the 8 caregivers in our sample of key informants answered in the affirmative and through probing and encouraging them to discuss the

problems they face as a consequence of food insecurity we learned not only about the nature of the problems but also about their approaches to dealing with them. They described actions and strategies they use to obtain money to buy food and/or obtain food for their children.

The sole respondent who said her household never runs out of food during the course of the year had this to say in response to our leading questions:

*“No, we never buy food. We always have food on our farm. Our farm is very big, so even when the harvest is bad, we still get some to eat and even sell.”*

She further elaborates:

*There is no time like that (i.e. not having enough food for the family). We all work on the farm so it is a very big farm which can even feed us a whole year round. Now for instance we should be harvesting maize but we still have maize in our barns.”*

Sadly this is not the norm for most families in Gomoa East. Caregivers in Gomoa East can best be described as active and resourceful in the face of food security challenges, as they are in relation to the myriad of other challenges and demands they encounter. They are by definition, mothers, and domestic managers, and nearly always, farmers and income earners who have major responsibilities for acquiring food for their families, as well as preparing it and feeding it to children who are too young to feed themselves. The emphasis on food acquisition cannot be understated. The difficulty of farming and the fact that, at best, households can only meet a portion of their food needs through agriculture, means that all of them must engage in income earning as well as food producing activities. Women who are fortunate can rely on their husbands or other family members to provide the cash that is necessary to purchase food. While many husbands are regarded by their wives as the primary “breadwinner,” not all of them, however, are able or willing to undertake these responsibilities. Ultimately it is mothers who must ensure that their children have food to eat. It goes without saying that women, as caregivers responsible for the feeding of their families bear the brunt of the challenges related to food insecurity. The following narratives are illustrative:

*“You eat foods that you are not even used to. Foods like gari, cassava ampesi.... Food is scarce because of the lean season.”*

*“Yes there are times when food is not enough for the family. We therefore manage whatever is available.”*

*I: What do you mean when you say you manage?*

*R: We share the little food available among ourselves.*

*“Yes I sacrifice my food for the children...”*

*“Yes there are times when there is no money at home. In such times we buy food on credit from the lady in the nearby store.”*

*I: What if she doesn't give you the food on credit?*

*R: She usually gives it to us on credit because we often buy from her and we pay when we have money.*

*I: So what happens when you can't pay her back?*

*R: What she does is to talk a lot but what can we do? We pay her back when we have the money.*

The strategies that caregivers in Gomoa East use to address the challenges of food insecurity in general, and particularly its seasonal nature, take a number of different forms. We have classified them into two broad categories: (1) income earning activities and (2) Non-income earning food acquisition strategies.

### **Income-earning strategies**

The main income earning activities women engage in are intensifying their trading or farming activities or resort to doing casual labour

*"I find something to sell or try to do extra farming or do casual labour on other people's farms."*

*".....You have to forfeit your sleep and do casual labour to feed your child."*

### **Non-income earning food acquisition strategies**

#### 1. Borrow money to buy food

*"I borrow money if I get the opportunity."*

*"I look for a loan to buy what we need."*

#### 2. Buying food on credit

*"In such times we buy food on credit from the lady in the nearby store and we pay when we have money."*

#### 3. Reliance on gifts from relatives

*"I go with my in-laws to their farm to get food so we can eat."*

*"I ask my mother for money; if she has she gives me some."*

### **Access to food aid programs**

In the context of feeding children during periods of food scarcity, caregivers were asked if they get food from food programs. The questions that were posed to generate some discussions on food aid programs in the community were: *Do families get food from any food programs in this community? Who are they and what is the nature of the aid? How do families around here feel about these programs?*

Three out of the eight respondents said they had access to some food aid programs whilst the majority (5) said they had no idea about such food programs and hence did not have access to such programs.

For the 3 respondents who claimed to be aware and were actually benefiting from such food aid programs, shed more light on what they knew about the programs:

*“At Kwanyako hospital they give Tom brown (wheat/soya blend) to children who are six months old for free.”*

*“For instance when I used to go for weighing, they used to give powdered cereals free of charge to children. Also Muslims during their festivals also distribute food free of charge.”*

*“I know that they give food to children or orphans.”*

From the responses above, it is obvious two of the respondents were referring to food given to mothers at the child welfare clinic when they take their babies for growth monitoring, while the other respondent was also referring to an organization that was giving aid to orphans and children. However, she could not mention the name of the organization. The foods given were mainly cereal/legume blends.

When asked further how families in the community felt about such programs the three respondents gave the following responses:

*“They feel good about it but they feel it should be strictly for poor people. Sometimes some people can afford these foods but they still go to collect it.”*

*“They feel that such programs are good because it means that the professionals and those benevolent groups have good thoughts about us. They feel they are beneficial especially in situations when there is less food.”*

*“Well, they feel that they are doctors so they can give things that will make our children healthy. I like it but I don’t know about others.”*

## **Summary and conclusions**

Almost all respondents affirmed running out of food in the course of the of the year. As a way of managing the food insecurity situation households face during this period, respondents resorted to a number of coping strategies. These strategies include engaging in income generating activities to earn money as well as non-income generating activities such as borrowing money to buy food, borrowing food and reliance on other family members for financial support.

Food Aid did not seem to be an alternate strategy caregivers resort to in managing their food insecurity situation in Gomoa East. While majority (5) of respondents had no idea of the existence of such programs in the study communities, only three respondents attested to knowing and actually benefiting from such programs. However, further probing revealed that, 2 of the respondents were actually referring to child welfare clinics where some weaning foods are given to children with nutritional problems. This notwithstanding, these 3 respondents were generally impressed with such food programs even though one of them felt such programs should be reserved for the poor since some people who can afford such food take undue advantage of the program.





## **CHAPTER 10: CULTURAL AND PSYCHOLOGICAL ASPECTS OF INFANT AND YOUNG CHILD FEEDING IN GOMOA EAST**

This chapter presents what we learned from the key informants and caregivers about the beliefs, values and knowledge related to nutrition of infants and young children (IYC) in Gomoa East. Of particular interest is our understanding of how food and feeding related decisions and behaviours fit within the larger context of taking care of IYC. Understanding this is essential because it is the caregiver's larger "framework" that ultimately influences her food and feeding decisions and behaviours. Data from both Phases 1 and 2 of the study are used to address these issues under five sections as follows:

- 1) Challenges related to child care giving
- 2) Food and feeding related problems/challenges
- 3) Actions taken by caregivers to support child health
- 4) Beliefs/knowledge about vitamins and food fortification
- 5) Caregivers' perceptions about foods that are bad for IYC

Section 1 focuses on the childcare challenges viewed from the perspectives of the 8 Caregiver key formants (Phase 1). The 4 remaining sections examine the issues with both key informants and respondents (Phases 1 and 2).

### **Challenges related to care giving**

To initiate a discussion of the challenges of care giving, we asked key informants the following question: *"I would like to ask you about problems that families have when they have an infant or young child. Please list for me the kinds of problems that you and other mothers often have when they have an infant or young child?"*

In their free listing exercise in Phase 1 of the study, key informants generated a list of problems they encounter in caring for their children. The essence of the free listing was to identify what the most salient problems were; saliency being determined by what was uppermost in the minds of key informants, hence receiving first mention and the frequency with which an issue was mentioned. An analysis of the free listing exercise is quite instructive. Issues that appeared at the top of the lists and were also most frequently mentioned were:

- Food and feeding related difficulties (first on 5 KI lists and mentioned by 8)
- Health of IYC (first on 2 KI lists and mentioned by 7)
- Inability to provide clothing for IYC (not listed first but mentioned by 4)
- Lack of money (First on 1 KI list and mentioned by 2)
- Irresponsible fathers (First on 1 KI list and mentioned by 2)

In their free listing exercise of care giving challenges, all 8 key informants indicated food and feeding issues as the major problems they encountered. These food and feeding related problems also appeared as either the first or second items on the lists of all the key informants. This showed how

salient and important food and feeding problems were in relation to other challenges in the context of childcare responsibilities among the Gomoa East caregivers. Health of IYC was the next commonly mentioned problem (5), followed by improper clothing for children. Even though explicitly mentioned by only 2 KIs, financial constraints appeared to be the main underlying problem to all the challenges women said they faced in taking care of their children.

### **Food and feeding related problems**

As a leading challenge, key informants explained food and feeding related problems in terms of not having enough food and lack of money to buy food for their families and IYC, lack of variety in IYC feeding and IYC's refusal or rejection of food. The following narratives speak to these problems:

*"There is not much food in the house to eat let alone feed the child, this brings suffering."*

*"Food in the house is not sufficient and in this case the number of times she eats a day reduces...the child is unable to sleep for long hours. She becomes unhealthy and falls sick more often."*

*"The child becomes tired of eating the same food all the time, refuses to eat and cries a lot."*

### **Health related problems**

Access to health care services was the next most commonly mentioned challenge. This was mentioned by 5 of the respondents. Respondents lamented that illnesses in their children was a big worry to them and this is even worse when they do not have money to seek medical care or even renew their health insurance to grant them access when their children falls sick. The following quotes are illustrative:

*"When the child falls sick it can cause death as there's no money to send the child to the hospital sometimes."*

*"It is always an issue that worries me when the child falls sick with malaria or fever or diarrhea or when he gets hurt when playing."*

*"It is a challenge to renew it (health insurance) every time for use."*

*I: What is the particular challenge?*

*R: I don't usually have money to renew the card so I end up buying drugs from the pharmacy any time any of the children is not well."*

### **Clothing for the children**

Clothing children appropriately was also a major concern for caregivers. Respondents associated improper clothing of children to their contracting diseases stressing that their inability to afford appropriate clothing for their children was a big issue. Apart from health reasons, some respondents also felt that, dressing the children properly for other social events was equally important.

*"The children are often bare-chested...they often have colds and cough. They also need clothing for school and church but we can't afford."*

*"There's no money to buy clothes. The cold weather affects the children especially when they are naked."*

*"The children can't wear one dress all the time, it has to be changed...they need protective clothing against the weather and this I can't get for them."*

*"I can't afford to buy him appropriate clothing for church and other occasions."*

### **Food and feeding problems/challenges**

Food related challenges associated with care giving initially explored with caregiver key informants were further explored with the caregiver respondent sample in Phase 2. The purpose was to obtain information about the personal experiences of the caregiver respondents concerning food and feeding-related problems. We therefore asked direct questions on challenges relating to feeding and nutrition from the caregivers own perspective. We started the discussion by asking: *"Many mothers have some challenges when it comes to food and feeding. Have you had any problems or worries about this?"* It is worth noting that the problems listed by the 8 caregiver key informants were also mentioned by the 32 caregiver respondents in the same direction. The problems enumerated were:

- 1) Difficulty in providing food for IYC due to lack of money: mentioned by 6 KIs and 22 respondents as the main challenge they faced and which they further elaborated as a) not having sufficient food to feed IYC and b) inability to feed IYC good/nutritious foods
- 2) Rejection of foods by IYC: mentioned by 1 key informant and 9 respondents)
- 3) Difficulty in feeding IYC when ill (mentioned by 4 respondents)

Before further discussion of these problems it is interesting to note that 1 key informant listed lack of money to buy fuel to cook as her challenge while 1 respondent claimed that hers was spending time to feed her IYC:

*"At times there might be corn dough at home, but there's no money to buy charcoal to cook with. In that case, I wait to borrow a neighbour's lighted charcoal before I can cook for my child."*

*"That fact that the child cannot feed himself well so I have to sit down to assist him."*

*I: Why is this a major issue for you?*

*R: Because there is a lot to do and the time you spend in feeding him I would have wished to be doing something else*

It is also worth mentioning that 3 respondents claimed not to have any problems feeding their children.

### **Difficulty providing food for IYC**

Caregivers related access to food to the availability of money. To them access to money enabled them to buy food especially when farm products run out of stock for households. According to them, when

there is no money, feeding the child becomes a problem since caregivers are unable to provide special foods, more nutritious foods, and foods preferred by the IYC. The following are sampled views from caregivers:

Caregivers explained these difficulties as follows:

a) Difficulty in buying foods for IYC especially during periods when farm produce have been exhausted:

b) Inability to fulfill their desire to provide nutritious foods for IYC:

*“There are times when I don’t have money to give him what I think will be healthy for him, in that case I just give him what is available. Sometimes I give him the koko without the milk for instance.”*

c) Difficulty in providing foods that the IYC liked or preferred:

*“Money to buy the food he eats. If I had enough money, after his meals, I will give him fruits or even a drink. This will make him healthier but I can’t afford it.”*

On the basis of the above expressions, it is clear that the difficulty in getting food for the IYC by caregivers was primarily due to financial constraints.

### **Rejection/refusal of Foods by IYC**

This problem basically had to do with some children who: 1) by nature did not like food and therefore ate very little, 2) did not want to eat solid foods and other family foods even though they were old enough to eat such foods any solid foods and therefore stuck to mother’s breast milk as their main source of nourishment, 3) generally had poor appetite and 4) are simply choosy and rejected certain foods because they did not like them and preferred others. Mothers further pointed out that children who were just being introduced to complimentary foods also tended to refuse foods initially and this according to them negatively affects the child’s weight. The following quotes are illustrative:

*“When she was learning how to eat she will not accept foods like banku and fufu. It was a worry because the breast milk was not enough for her and she will be crying most of the time.”*

*“It’s a problem for me because at times you come home from work so tired and the only food available is fufu, but this child will not eat and you have to prepare koko for her.”*

*“When I prepare other foods apart from rice and she does not eat.”*

*“The only problem I have with my child is that she is almost two years but she will not eat fufu and soup”*

Apart from their concerns about the effects of IYC food rejection/refusal on their growth and health, caregivers were also concerned that such children tended to depend mostly on breast milk, thus putting a lot more stress on mothers as one lamented:

*“It drains me as a person, because you as a mother you will have to eat so much in order to get a lot of breast milk for the child. And madam as you know in this our present economic condition you cannot be eating all the time.”*

### **Difficulty in feeding IYC when ill**

The other major challenge was the difficulty caregivers encountered in feeding their IYC when they are ill. Their issue was basically how sickness affects the child’s ability to feed. According to the caregivers when children are sick, they tend to refuse food and this was a big worry to them because, refusal to eat means children were going to cry more and healing would be slow.

*“Anytime she is not well, she is unable to feed well and I get worried.”*

We further analysed the data to examine the distribution of the IYC feeding challenges among the different IYC age categories. The result presented in Table 10.1 below clearly shows that the feeding problems relating to lack of money appear to be common across age groups whilst the problem of poor eating or rejection of food is more common to the 9 – 11 month age cohort.

**Table 10.1 Feeding challenges by age groups**

Food and feeding challenge	Age groups/No of children			
	6 – 8	9 – 11	12 – 23	12 – 23NBF <sup>1</sup>
Lack of money to buy food	7	5	5	5
Poor eater/rejects food	2	4	2	1
Refusal of food due to sickness	-	1	3	1
No problem/challenge feeding child	-	1	-	2

NBF<sup>1</sup> - Not breastfed

### **Caregiver actions for dealing with specific food and feeding related problems**

Having identified the feeding problems caregivers experienced in taking care of their child and their possible impact on food intake, further discussions ensued on actions and approaches adopted by caregivers for dealing with these problems. Below are examples of how caregivers went about resolving some of these problems.

## **Difficulty in getting food for IYC due to lack of money**

The most frequently mentioned strategies were the same as those key informant caregivers said they adopted for meeting the challenges of food insecurity in Chapter 9. These strategies were reiterated by caregiver respondents and include:

- Income earning strategies (Engaging in petty trading and casual labour on other peoples' farms)
- Non-income earning strategies (Borrowing money to buy food or buying food on credit, relying on support/remittances from spouses and other relatives such as mothers and parents-in-law)
- Other less frequently mentioned strategies include those relating to alteration in IYC food intake (Managing with the little family food available, reducing frequency of feeding IYC's favourite foods, reducing amount of food fed to IYC and compensating by increasing frequency of breastfeeding, resort to giving only koko (porridge) to IYC, feeding IYC purchased ready-prepared food and cooking in bulk)

## **Rejection of foods by IYC**

Even though most caregivers attributed IYC rejection of food to IYC preferences for certain foods as well as IYC not liking food by their nature, a couple of other caregivers attributed this to the fact that the IYC was just being introduced to other foods apart from the breast milk. In solving this problem however, the following strategies were adopted:

- Breastfeed more
- Vary foods for IYC
- Give foods that IYC likes or easily accepts
- Give IYC multivitamins
- Coax and feed IYC in bits

## **Actions taken by caregivers to support child health**

Shifting from challenges and problems, we initiated the discussion of positive, preventive actions by asking: *"Can you tell me all the things families can do to keep their children healthy?"* The ensuing discussions with caregivers centered on general care giving as well as food and feeding related strategies. The general strategies can be grouped into the following:

- 1) Ensuring environmental, personal and food Hygiene:** Ensuring good hygiene was the most commonly mentioned strategy all key informants made reference to in keeping their children healthy. They mentioned different dimensions of this strategy in their discussions. According to them, it was important for a mother to keep herself clean especially when they are still breast feeding so that the breastfeeding child does not contract germs while breastfeeding. They also mentioned the cleanliness of the children, washing their clothes, and ensuring that cooking and feeding utensils used for the IYC were clean. The need for children to have their hands washed with water and soap before eating and after defacting, preventing houseflies

from contaminating the child's environment, ensuring a mosquito and fly free environment by making sure stagnant water that could breed flies and mosquitoes does not collect in the surroundings.

**2) Wearing Protective clothing** especially at night when the weather tended to be cold:

*"It is important to cover her well so that she does not catch cold especially at night when she is sleeping. If she catches cold she will be sick."*

**3) Seeking medical attention, giving appropriate medications and heeding expert medical advice:** Having regular health checks and seeking the appropriate medical care was considered very important in keeping children healthy. The following narratives from a section of the key informants explain this further:

*"Taking them to weighing. This allows them to be given vitamin A, which is good for the health of the child. This is also an opportunity for the health of the child to be checked, so in case there's something wrong, he can receive treatment."*

*"Anytime the temperature of the child goes up you should be able to quickly give the paracetamol to help the situation if it gets worst you send the child to the hospital."*

*"Taking the child to the hospital and avoiding over the counter purchase of medication. It is necessary because these druggists don't have machines to do laboratory test to confirm diseases and based on that show appropriate medication."*

*"Taking care of her medication, deworming or blood tonic. Every three months you should give a child dewormer because of contaminated food or else the child will have pale membranes."*

**4) Sleeping in treated mosquito bed nets:** Caregivers were generally aware that malaria was brought about by mosquito bites and therefore their children needed to be protected against mosquitoes. This key informant could not have said it better when she reiterated that: *"You need to put the child in a mosquito net so that mosquitoes can't bite her.... To prevent mosquitoes from biting her and thereby preventing her from getting malaria."*

**5) Avoid giving water to infant before six months of age or give treated (boiled) water:** One key informant was very concerned about the quality of water given to children before the age of 6 months. According to her, a child was prone to getting infections from drinking contaminated water and therefore, it was advisable to avoid giving a child water before age 6 or give treated water to the child:

*"At the hospital we were told not to give a child water till the child is six months otherwise it is important to boil the water before we give to him."*

**6) Using traditional/herbal medicine and other practices:** Some key informants were of the view that, giving a child enema, which is made up of a combination of herbs as a suppository, helped in strengthening the child's body and bones, and by so doing keeps the child stronger

and healthier. Some potentially harmful practices such as massaging the child's body and other vital body parts with hot/warm water were also mentioned. This is believed to strengthen the children and heal sores where applicable. One respondent explained this in her statement:

*"Boiling water to massage the child or pouring warm water on her vagina or on her skull helped to heal any sores and also strengthens those places."*

### **Food and feeding related strategies taken by caregivers to support child health**

Besides the above general strategies employed to keep children healthy, caregivers were also asked specifically about food and feeding related strategies. And for each of the problems cited caregivers were made to state the specific strategies they adopted in dealing with that particular problem, the types of social support available in dealing with these problems and finally the cost (or sacrifices) made in dealing with the problem. The most common strategies mentioned include:

**1) Feeding the child with nutritious food:** It is important to feed the child with nutritious healthy foods. Giving the child nutritious food helps keep the child healthy.

*"Giving foods that are nutritious like kontomire, eggs and pea eggplant gives blood. These foods give blood which gives the children good health. They also make them grow well."*

*"There is the need to give the child nutritious food like kontomire and pea eggplant. When the child does not eat nutritious foods she will not be strong to play so that you the mother will be free. Nutritious food also gives the children blood"*

*"Add foods containing 'proteins'. The proteins give children more energy. Protein goes a long way to give them vitality and good growth. Also improves mental development of the child."*

*"Feeding the child protein enriched foods. You should give them foods that have proteins. Proteins give good health so it's essential. Giving them carbohydrates and fatty foods alone is not good, some proteins should be added."*

**2) Feeding children at the right time:** Caregivers reiterated the importance of introducing children to liquid foods before moving to solid and family foods when they are ready for other foods in addition to the breast milk. The main reason being that the children's intestines were still developing as indicated in the following narratives:

*"Giving the child food at the time when the child is supposed to eat solid foods. If the child is not matured and you give the child solid food the child will get sick often and will not be strong. I don't know what makes that happen but we were told at the hospital."*

*"The food you give him should be the food he should eat for the stage he has reached. It is also important to give him breast milk and water."*



**4) Avoid eating cold foods:** Eating of cold foods is not safe, it is always advisable to preheat food before consuming it. Some caregivers threw more light on this point in the narratives.

*“Cold foods cause cholera. For a child’s wellbeing, warm food is preferable.”*

*“Cold food could habit germs. Therefore heating is important to kill germs. This causes Cholera. Education from health centers entreats us to heat food. Leftover food given to a child without warming causes fever. Therefore there is a need to always ensure the food is warm.”*

**5) Ensuring that child drinks clean water:** Giving children unclean water can lead to several health risks, it is therefore important to treat water either by boiling or sieving before drinking or giving it to a child.

*“Storage container should always be clean. The cup as well should be clean. Ensure the hands are clean before fetching the water.”*

*“There are germs in unclean water that can cause diseases like guinea worm and fever.”*

**6) Give fruits:** Caregivers were very much aware of the protective functions of fruits and vegetables and therefore important to include them in children’s diets. This point was well articulated by one of the respondents:

*“...Oranges, sugar cane, pineapple, pawpaw, banana. It eases the bowels of the child after eating other foods. It also reduces the occurrence of fever. It improves upon child growth. It gives energy to walk to do anything.”*

**7) Strategizing to alleviate effects of financial lack:** Because financial difficulty seem to be at the heart of the challenges in IYC feeding caregivers discussed some specific steps they took to alleviate this problem. The efforts made to generate income and the social supports available (borrowing money or food, remittances from relatives etc.) have been discussed at length. What has not been brought to the fore is the cost in terms of the sacrifices other family members have to endure to ensure that food is available for the IYC. The following narratives are illustrative:

*“The older children most times repeat meals in a day.”*

*“Because he’s an infant, starvation is not good for him. I sacrifice for him by not feeding the older ones as I have to feed them sometimes”.*

*“If There is insufficient food at home, I am unable to prepare soups like palm nut and groundnut so the breast milk doesn’t flow well.”*

## **Beliefs/Knowledge related to vitamins and food fortification**

To learn more about the environment for introducing micronutrient and behavior change interventions to increase IYC nutrient intake, it is essential to know about caregivers understanding and perceptions about “vitamins” as well as fortified foods and other supplements. To learn about caregivers familiarity with and perceptions of this concept as well as micronutrients and fortified foods we administered a series of questions in two modules in Phases 1 and 2 of the study. In Phase

1 key informants' awareness of vitamins and food fortification was explored within the context of the food and feeding strategies they use to keep their children healthy.

Thus we asked a follow on question that depended on what the respondent had already said. For example, we asked: *You did not mention vitamins in your list, have you ever heard of vitamins? Or "You mentioned vitamins, can you tell me more about that?"* In Phase 2 we were more direct, beginning our discussions with caregivers with the question: *"More and more nowadays it seems that people are talking about "vitamins". Have you heard this word before?"*

Both key informants and caregivers generally had very good knowledge and awareness of vitamins. About 83% (33 out of the total sample of 40) of caregivers had some awareness of vitamins and about half (19) had some knowledge. These caregivers mentioned Child welfare clinic (CWC) session, radio, television and books as the sources of their knowledge. Thirteen caregivers associated vitamins with drugs or medicine; three said vitamins were some form of food and ingredients in fruits, while the remaining three caregivers could only mention examples of vitamins as vitamin A, B and C.

All 18 caregivers had some idea of what vitamins do for the body. The most common function mentioned was its ability to improve children's appetite, enabling children to eat well, gives strength and protects against disease as well as improving the weight of children. The following quotes are some statements from a cross section of caregivers regarding the perceived functions of vitamins:

*"They make you fat and chubby."*

*"I know it protects against diseases."*

*"They give strength for increasing appetite in children."*

*"It enables children to eat and grow well, it also gives them strength."*

*"They give good health by preventing you from getting diseases."*

As to whether they have ever been encouraged to give their IYC vitamins, 15 caregivers answered in the affirmative, adding that they have ever given their IYC some of the products which were in the form of liquid (13 responses). The other 2 could not specify the nature of the product they gave to their children. Again, as to whether they were currently giving vitamins to their IYC, only 6 caregivers answered in the affirmative, adding that they will continue giving vitamins to their IYC. This is what two of them had to say:

*"Yes, I will continue to give the vitamins till I'm asked to stop by the nurses."*

*"If the doctor asked me to continue I will, if not I will stop."*

For the 11 caregivers who had never given their IYC vitamins their reasons appear to be mainly financial. Thus:

*"No, I don't have money."*

*"No, not by my own initiative aside the times she received vitamin drops from the child welfare clinic visits."*

Caregivers' experiences with giving their IYC vitamins were generally positive with all 15 indicating that they had not had any problems. The following quotes are illustrative:

*"The child had a good appetite and could play. I did not have any problems."*

*"It gave him strength and he started eating a little"*

*"She was able to eat well."*

*"He eats well; he feels hungry and it makes him eat."*

*"It was good; he was eating well and sleeping well too."*

*"He has a healthier appetite and a reduced incidence of diarrhea."*

The following are reasons caregivers advanced for giving vitamins to their children.

*"I gave it because it was prescribed at the hospital for me to give it him."*

*"My sister who is a nurse advised me to give it to him and he'll be better."*

*"I gave it to him because the doctors recommend that he be given and I want him to be strong so I give it to him."*

On the concept of food fortification we asked caregivers if they had ever heard about vitamins being added to foods, and if so, what foods. Caregivers' awareness of food fortification was relatively lower, with about 50% (19 out of the 40) claiming to be aware of food fortification. Examples caregivers gave of fortified foods included Don Simon (multi fruit drink), Malta Guinness, Cerelac, Lactogen, Nido (powdered milk), Coca cola, soy drink, Milo (chocolate drink), Tom brown (wheat-soy blend) and Plumpy Nut.

A total of 12 caregivers said they have ever purchased some fortified products for their IYCs and the following are some experiences they shared:

*"Yes, I have purchased the cerelac but not the tom brown"*

*"I have bought Cerelac for her before but she refused to accept so I stopped. But the Vita milk she likes it so I buy it for her once in a week"*

*"I do buy Vita milk and Kalipo (fruit drink) for her once in a while"*

*"I tried to introduce cerelac but my child did not accept it. I didn't mention it earlier for other mothers because most mothers don't have the money to purchase such foods. At weighing they don't really educate us on many issues.*

When further asked whether they have thought of buying fortified foods in the future, those respondents who have never bought any gave the following responses:

*"No, I can't afford to buy such foods for her"*

*"If I have money why not I will buy for my child"*

In other words monetary constraints were their reasons for not wanting to purchase any of the fortified foods.

Additional questions, not directly related to vitamins but very relevant to child health seeking behavior, were further discussed with caregivers. The first question was: *"Is there anything else mothers can give to their children to improve their nutrition?"* Only 3 out of the 32 caregivers answered this question and the following are exactly what they said.

*"I will give her enough clean water"*

*"Fruit drinks like Vita milk and Kalipo drink helps the children to have good nutrition"*

*"I know of fruits like mango, pineapple, orange and the others help children have a good nutrition"*

There were no responses for the rest of the 29 caregivers. The second question was *"Apart from food, what can mothers do to improve the nutrition of their children?"* To this question, only one (1) caregiver mentioned non-food related activity which was good personal hygiene. The others mentioned food related items such fruits and breast milk (8) and blood tonics (3). The rest however, stated that, besides food, there was nothing else that mothers could do to improve the nutrition of their children.

Finally caregivers were asked whom they would go to for information on their children's nutrition. Their responses included husbands, mothers and mothers/fathers in law, the elderly, hospitals and health workers while some specifically mentioned doctors and nurses. Almost half the caregivers mentioned more than one group of persons they will go to for nutrition advice. The majority of (81% i.e 26 out of 32) mentioned health personnel, giving the following reasons:

*"I will go to the nurses at the clinic because they have knowledge about foods that will help make the children strong and healthy"*

*"I will go to the hospital after my mother and I have discussed it and have found no clue to it"*

*"I will go to the nurse for advice since they have been talking to us about how to take care of the children"*

*“I will go to the nurses because they know how to take care of the children, since they have been trained for that”*

### **Caregiver’s perceptions about foods that are bad for IYC**

Following on from the discussion about challenges that caregivers face in feeding children, we sought to understand whether there are any foods they are not giving to children on account of their being perceived as bad for them. This was intended to discover whether there are any foods that caregivers in Gomoa regard negatively. The information was also important for interpreting the ratings of foods by the sample of caregivers. Foods that are regarded as ‘bad’ for children may be ranked low. Additionally a mother’s perception and understanding of what food is and does to her child’s health influences her decision to give/not give such food to her child.

The question asked to gauge this was *“We have talked a lot about foods that are good for children and that help them to be healthy. Are there foods that you feel are bad for ... (index child)? A follow on question was, are these foods bad for all babies and young children or only for your child? And lastly, why is \_\_\_ food bad for your child? Information obtained from caregivers complements that obtained from key informants in phase one.*

The findings reflect strong cultural consensus on foods regarded as bad for young children by caregivers in that foods mentioned by key informants in Phase 1 were also mentioned by respondents in Phase 2. There was also some consensus among respondents as to whether the foods mentioned were bad only for their IYC or for all other children. Generally foods caregivers perceived to be bad for their children were considered equally bad for other children.

Foods most frequently cited as bad for young children where can be categorized as follows:

- 1) Heavy foods: Most mothers think that feeding a child under 1 year with heavy foods will delay them walking or cause them not to walk at all. Foods mentioned included fufu (7), ampesi (5), kokonte (3) and banku (2)
- 2) Foods that cause diarrhea: These included waakye (12), mango (7), slimy foods like okro (5), powdered milk (1), wheat porridge (1)
- 3) Sugary foods: These are believed to cause tooth decay and stomach ache/upsets and include toffees (3), ice cream (2), sugar (2)
- 4) Staple without accompaniment: These are thought not to provide proteins and essential nutrients and were mentioned by 6 respondents overall.
- 5) Rice cooked in oil aka oily rice or “angwa mu”: The 3 respondents who mentioned oily rice explained that many children cannot chew the rice because they have no teeth and tend to swallow it additionally it does not contain any nutrients. With the exception of the heavy foods, the foods were classified as harmful more because of their physical characteristics or other intrinsic nature rather than for cultural reasons. A testament to caregivers’ sound nutritional knowledge is their classification of foods (e.g plain staple with no accompaniment or enrichment or stew with no protein) that can be considered as nutritionally inferior as being bad for children. A sampling of

caregivers' comments about the foods considered bad for young children are illustrative of these perceptions:

### **Fufu**

*"It will make her weak so she can't walk. If she was walking then it would be a different case. She is young and she hasn't started walking yet but as for children who are one year and beyond it is good for them."*

### **Ampesi** (boiled yam, plantain or cassava)

*"The foods are not bad for consumption but they are too heavy for V at her age. They are foods I will not feed her at home or anywhere."*

### **Banku with pepper**

*"It does not contain any ingredients that will make the child grow well and healthy."*

### **Staple foods (e.g banku, ampesi) without stew**

*The stew makes the food complete, so without it the food is not complete and not healthy."*

### **Waakye**

*"When they are cooking waakye they use saltpetre which is not good for the children. It gives them diarrhea."*

### **Mango**

*"As for mango the child will get fever from eating it."*

### **Rice and oil**

*"These foods do not contain any nutrient so they don't promote growth and health."*

### **Soup without meat**

*"It is not helpful to the child because it contains no nutrients."*

### **Koko without milk**

*"If you give it without milk, the child will be malnourished."*

### **Slimy foods**

*“The slimy foods would give her infection.”*

### **Sweet/sugary foods**

*I think too much sugar is not good for a child's health and too much can also affect their tummy by making them run.”*

*“The toffees will give them Candidiasis.”*

*“Too much ice cream also are not good for children, it can cause stomach aches.”*

Additional quotes buttressing some of the less generalized perceptions are as follows:

*“I have observed her for some time now that powdered milk is not good for her it gives her diarrhea.”*

*“He gets diarrhea anytime he takes wheat porridge.”*

*“He does not like it (mpotompoto or yam pottage) so I don't think it's good for him; therefore I don't give it to him.”*

*“The corn porridge gives phlegm according to what my mother told me.”*

### **Summary and conclusions**

Caregivers faced a number of challenges in their child care efforts. The most common problems being food and feeding related difficulties, health of IYC and inability to properly cloth children. The food and feeding related problems are difficulties in accessing food for the IYC due to lack of money and poor feeding resulting from illness and poor appetite, rejection and refusal of food when IYC are being introduced to solid or family foods.

Actions caregivers take to address childcare giving problems include general health seeking behaviours such as ensuring good hygienic practices, seeking both medical and herbal care/treatment and appropriate management of IYC feeding. Specific actions taken to improve IYC feeding include 1) ensuring accessibility of IYC foods by earning incomes, borrowing food or money to buy food and crediting food from vendors to pay later among others; 2) managing difficulty in feeding IYC in situations of ill health or food rejection/refusal by i) breastfeeding more frequently, ii) coaxing, iii) feeding IYC their preferred foods or foods that are easy to feed and easy to accept, iv) varying diets of IYC, v) administering medications and vitamins to IYC mainly to improve appetite.

Caregivers' knowledge of the concepts of vitamins and food fortification was generally good with the majority having some awareness of vitamins and about half being aware of food fortification. Knowledge about the functions of vitamins and the benefits of consuming vitamin-rich foods was mainly from information they had received from Child Welfare Clinics (CWCs).

Caregivers listed a number of foods that they classified as being bad or harmful to young children. Some foods were described as being bad for some children depending on their age while others were

bad for all children. With the exception of foods such as fufu, ampesi and banku, these classifications appeared to be based more on the physical characteristics or some intrinsic nature of the food and caregivers' personal experiences rather than cultural factors. Significantly caregivers demonstrated sound nutritional in classifying nutritionally inferior (from nutritional science perspective) as bad for children.

Significantly family foods such as fufu, ampesi and banku were also perceived to be bad for children under one year old or children who have not yet started walking. The reason caregivers gave was that feeding children what they termed as heavy foods might actually delay or prevent them from walking. These are the main staple dishes and this cultural prohibition has adverse implications for diet adequacy of children under 1 year old. The fact that this is a culturally ingrained belief should be a cause for concern.

## **CHAPTER 11: THE HOUSEHOLD CONTEXT OF INFANT AND YOUNG CHILD FEEDING IN GOMOA EAST: DISCUSSION AND CONCLUSIONS**

### **PART 1: INTERPRETING THE FES FINDINGS THROUGH A CULTURAL-ECOLOGICAL FRAMEWORK**

This report is intended to address the broad questions set out in the Terms of Reference for our Landscape Analysis and to place this information within the larger socio-cultural context of infant and young child (IYC) feeding in households in Gomoa East District in the Central Region of Ghana. The questions for the landscape analysis are:



*“What are infants and young children 6-23 months of age being fed?”*

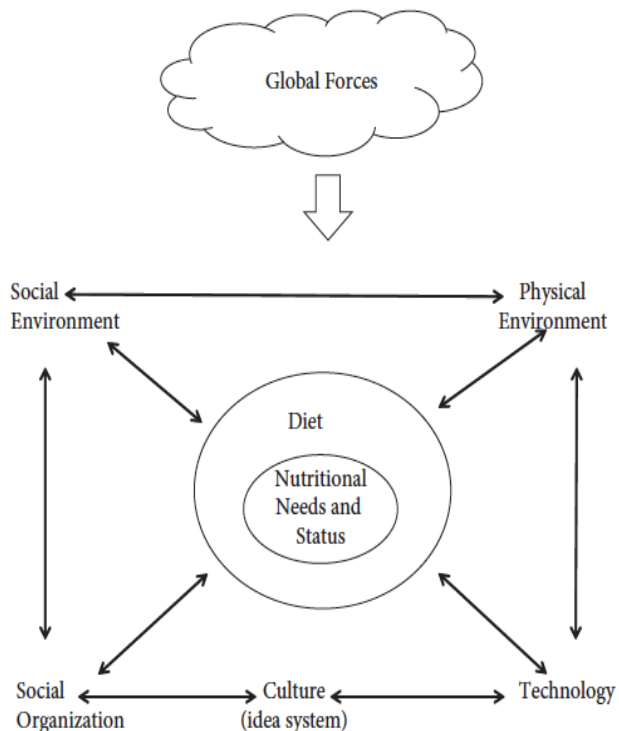
*“How are caregivers preparing these foods?”*

*“Where and how are they sourcing those foods?”*

*“Why have they chosen those particular foods?”*

As discussed in Chapter 1, the decision was made to answer these questions through an FES study, using the tool developed by GAIN: *“The Focused Ethnographic Study: Assessing the behavioral and local market environment for improving the diets of infants and young children 6 to 23 months old.”* It is important to note that in answering these questions the emphasis is on household behaviors as there is strong evidence that changes in household caring behaviours can also result in improved infant and young child nutrition. It is however important to recognize that many of the barriers and facilitators for improving diets of IYC lie outside the household. In fact, many have argued persuasively that without major attention to conditions outside the household – in the larger society in which households are embedded - the amount of improvement that can be achieved in improving nutrition and health without societal changes will be limited. Thus, the findings of this study should be seen as contributing to the information requirements for effective intervention planning in the Southern Ghana. However, it is also important to be clear that information on household behavior alone is inadequate as a basis for actions to reduce malnutrition in the contemporary world.

In Chapter 1 we described the cultural-ecological framework, which is the theoretical underpinning for the study. The framework (reproduced below) guided the research in Gomoa East. The generic IYC FES is designed to obtain information on all of the sectors in the cultural-ecological framework, as all of them are important for understanding and interpreting IYC feeding practices and behaviors in any given setting. A primary feature of a Focused Ethnographic Study is that it is addressed to answering specific, predefined questions and as in the previous FES in Kenya the seasonality module was included to examine seasonality and its effects on IYC and family diets.



**Figure 1** An ecological model of food and nutrition. Redrawn with modifications from Jerome, Kandel, and Pelto (1980).

Information pertaining to the various components of the model are integrated into the data presentation and discussion in all of the chapters, beginning with Chapter 3. In the following paragraphs, we highlight key findings of the study in relation to the model. We focus on findings that are of primary interest for the specific landscape questions. The discussion in this chapter is not a definitive review of all of the relevant findings contained in the early chapters. In fact, we invite readers and users to review the results independently of this discussion, as we are sure that the different perspectives and experiences that readers bring to the interpretation of data are essential for potential applications of the study findings in the planning of interventions.

## Diet

*Preamble:* IYC diet is the central focus of this report. The primary description of diet is given in Chapter 4; additional information about IYC diets in Gomoa East is presented in other chapters.

1. A major finding of the study is that there is a definable “core IYC foods.” In the second half of infancy (6-13 months) the most salient foods in this core are maize and millet porridges, banku and rice eaten with vegetable soup or stew. The other food in the IYC

core is fufu, usually eaten with palm nut soup.

The importance of the core and secondary core IYC foods in children's diet are demonstrated in the 24-hour dietary recall records. What is also evident in these records is that IYC are not fully integrated into the family diet till after the first year. The relationship of IYC core foods to household foods is also examined in Chapter 4.

2. The core staple dishes are consumed with soups and stews in which fish is the predominant animal source ingredient. A variety of fish, including mackerel, herrings and tuna are contained in the recipes for the vegetable soups and stews that accompany the main staple dishes. Banku is eaten with okro soup, kontomire (leafy vegetable) stew or palm nut soup. Rice is eaten with tomato or kontomire stew and fufu is usually eaten with palm nut soup. Eggs and milk (as milk powder in porridge) are the other animal source ingredient consumed by only a few children. Fruits were seldom consumed.
3. In Gomoa East, millet porridge is preferred and is consumed by more children than maize porridge. Millet porridge is also always purchased ready-prepared. The porridges and other foods fed to the younger IYC are more often specially prepared or purchased and not shared with other family members. This indicates a cultural commitment to the concept of special foods for IYC and a sound basis for nutrition education.
4. The foods that comprise IYC diets come from multiple sources. There are foods from home production, foods from the local area (purchased or given from other people's home production), and foods that are purchased from local vendors and markets. The foods in the market are a range from agricultural products that are locally produced to agricultural products from other parts of Ghana to commercial products that arrive in local markets from various national and international sources.
5. Several factors compel caregivers to rely on a variety of sources to access the ingredients of common IYC foods, despite a strongly expressed desired self-sufficiency of staple grains. These factors include seasonal fluctuations in staple reserves, constraints on access to land or productivity, and the necessity (regardless of staple grain availability) of purchased ingredients. The off-farm sources of IYC food ingredients include markets, vendors, as well as food borrowed from relatives and neighbours to return later. Without question, caregivers' express preference was to source all their food from their farms. However no household is completely dependent on own production for its food needs and there is seasonal reliance on the market for staple foods. Significantly the main ingredients used in preparing the core and special IYC foods are solely purchased. These include food items such as fish, milk, palm oil, oil, tomato puree, sugar and bouillon cubes that are important contributors to variety and improved nutritional content of the diet as well as taste.
6. In the lean season when resources are scarce and home production is low or non-existent, caregivers seek to buffer IYC from the most pronounced effects of seasonality.

Nevertheless there are significant differences in IYC diets during annual cycles of scarcity. Gomoa East caregivers reported less variety in IYC diets as well as offering less preferred foods.

## **Physical environment**

*Preamble:* Shifting attention to the component of the cultural-ecological model labeled “physical environment,” we begin by stressing that the physical environment in Gomoa East, plays a major part in explaining the dietary and economic adaptation of households and the challenges they face in acquiring the foods they need to meet household requirements. In this section our highlights focus on issues that emerged from the FES study from the perspective of the caregiver-respondents.

1. As noted in the introduction, this study did not directly address issues of agronomy and agricultural productivity and their links to IYC feeding. Such an investigation is outside the scope of our assignment. Even though Gomoa East has two rainfall seasons, the rainfall pattern can be erratic and unpredictable. This coupled with small landholdings by majority of households and lack of access to resources to support farming activities results in limited food production. Additionally unfavourable weather conditions affecting general food production and distribution lead to high food prices especially in the lean season. This has food insecurity implications for households and to some extent, IYC feeding.
2. We also note that many of the issues related to environment stem from social conditions and interactions between social and environmental conditions. Our analyses show that seasonal food insecurity is characterized by 1) changes in household diets resulting in changes in specific foods that are due to differences in seasonal availability in household fields and gardens and those that depend on having money to purchase them; 2) changes in how foods are prepared, reflected by modifications to recipes because of reduced availability of foods from household production and inability to buy ingredients due to a shortage of funds and 3) changes in meal patterns i.e alterations in the number of meals (typically shifting from 3 meals to 2 or even 1) and intra-household food allocation (serving minimal amounts or skipping meals all together). In Gomoa East lean season adjustments include substitution of gathered leaves (dandelion) in place of kontomire and consuming staples without the accompanying stews and soups altogether. This radical adjustment omits the more nutritious ingredients – including vegetables, oils and fish.
3. A feature of the physical environment worth noting is the use of firewood and charcoal as the main source of fuel. Currently wood is still available and there were no indications from caregivers’ narratives that accessing firewood is a problem. However reliance on wood for cooking is unsustainable and one can anticipate a crisis in the future.

## **Social organization**

*Preamble:* It must be noted that the only social organizational elements highlighted here are those that relate to social organization of the household. The ways in which households are affected by social organization at higher social levels – from the community to the nation and beyond – is touched on but only as they are reflected in the experiences and perceptions of caregivers.

There are several aspects of social organization as they relate to IYC feeding we highlight in this summary.

1. Household economic organization places a premium responsibility on maternal caregivers for the acquisition of family and IYC foods through home production and purchase. Thus, her responsibilities cover the full range from acquisition through preparation to feeding. Given these multiple sectors of responsibility, caregiver activities in relation to IYC diet create a situation in which agricultural work in family fields and income-earning activities to acquire money to purchase food affect the time and other resources she has available for food preparation and feeding of IYC. The extent to which she can delegate these responsibilities depends on household structure and the presence of others who can take on these tasks.
2. An area of concern for caregivers worth mentioning is their inability to actively participate in their economic and household activities due to their child care responsibilities. Work that involves taking care of IYC prevented caregivers from having enough time to actively participate and carry out their trading activities and this affected their earning incomes for the household. This point is very important when we consider the fact that trading activities are an important occupation of women and also that women are mainly responsible for purchasing ingredients for household food preparation after the men have provided the grains. Therefore caregivers inability to continue their economic activities because of IYC care, really does affect household food consumption and ultimately IYC feeding. This conflicting situation of balancing child care and earning incomes to feed the household was often cited as a potential source of worry and stress as caregivers struggle to perform their roles.
3. A feature of social organization that relates to all aspects of IYC diet, from food availability through preparation to feeding behavior is household structure and composition. Throughout the study, in the application of all of the modules, the effects of household structure are visible, and its importance was often articulated by caregivers in connection with different aspects of data collection. Households in Gomoa East are mostly nuclear and only a few caregivers had access to alternate care often from grandmothers leaving.
4. Another aspect of social organization that is paramount for IYC feeding is social support for food acquisition. The commitment of fathers/husbands is essential. The extent to which caregivers' partners participate in providing food from agricultural activities, money to buy food and help with IYC feeding affects IYC diet both directly and indirectly. The value of this support, and of mutual problem-solving with respect to IYC feeding and care, was explicitly noted by a number of respondents. However as much as a third of caregivers are single parents (not married, cohabiting or divorced) and may not have access to this vital support. Indeed a couple of caregivers mentioned irresponsible fathers as their number one challenge care giving challenge.

In addition to support within the household, support from family members who reside outside the house is another major feature of social organization in Gomoa East that protects IYC diet. This support comes in various forms – gifts of food and/or money, and loans of food and/or money. It is worth noting that more than a third of caregivers (38%) cited donations as a source of income.

Neighbors are another source of support, often critical at particularly difficult times. Finally, we note the importance of credit from local vendors as another source of support in times of need.

5. In some poor populations, social welfare and food programs play an important role in buffering household food insecurity and ensuring minimum levels of dietary adequacy. To examine whether caregivers get support for IYC diet from programmes in their community, we asked respondents a specific question: “Do you know of any food/nutrition programmes in this area?”. The majority of key informants to whom this question was posed were neither aware nor have they benefitted from food assistance programs. The few who answered in the affirmative claimed to have benefitted from wheat-soy blend flours given at the child welfare clinics
6. The role of health services is another aspect of social organization that is located outside of the household, but directly affects households and is frequently mentioned by caregivers. Caregivers in Gomoa East regard health workers as important sources of information about how to feed their IYC. They also make use of services for preventive and curative care.

### ***Culture (Idea Systems)***

*Preamble:* We use the term “culture” to refer to the domain of the various different aspects of shared, cognitively-mediated experience, particularly those aspects of experience that are included under the labels of beliefs, values, attitudes, and knowledge. This component was a central focus of our landscape analysis because it is essential to answer the question: “Why have they chosen those particular foods?” In addition to investigating sources and resources of food acquisition, understanding caregivers’ beliefs, knowledge and perceptions is essential for understanding what they give to their IYC. Chapter 7 and parts of Chapter 10 are devoted to a detailed examination of the cultural ideational component of IYC feeding in Gomoa East. A few key points are highlighted here.

1. A major finding from our study is the demonstration that caregivers in Gomoa East have a clear understanding of the importance of food for child health and growth. In many cultures, caregivers are fully aware of the connection between food and survival, but are much less aware of the importance of food quality for child well being. On the contrary, our results provide strong evidence that caregivers in Gomoa East not only understand the relationship of food quality to child survival and growth, they exhibited an awareness of the importance of balancing dietary components; a notion of the preventive power of certain foods; and the ability of certain foods to supply energy and growth (in their view by “building” or “making blood”). They are also strongly committed to providing their IYC with the best foods that they can.

2. Gomoa East caregivers have absorbed much sound information about the health-giving properties of particular foods, and the majority were familiar with the term “vitamins” although some could not identify any individual vitamin. However most likened vitamins to a medicine that can restore appetite and IYC health. Despite this apparent lack of knowledge in relation to nutritional science constructs caregivers seem to be firmly committed to the fundamental idea that the ingredients in food matter, and some foods make greater contributions to IYC health and growth than others.

3. The rating exercise we used to explore caregivers beliefs about specific foods revealed a considerable level of cultural consensus about many of the foods that comprise IYC diets in Gomoa east. This is not the case for all foods and all value dimensions, but a general level of consensus is an advantage when one begins to plan the communications component of interventions aimed at improving household behaviors related to infant and young child feeding.

4. Another finding of note concerning cultural beliefs is caregivers' strongly held beliefs about not feeding IYC "heavy" foods until after 1 year or after they begin to walk. Though not frequently encountered in the course of the discussions, caregivers assertion that it is unwise to feed a child solid or heavy foods before he/she begins to walk should be a cause for concern. The reason given is that consuming such food during this period will prevent or retard the child's ability to walk. Whilst there is no evidence of these being regarded as a "food taboo" the impact of this practice will depend on how the concept of "heavy" or "solid" is interpreted by individual mothers. What is of concern is that the classification of some of the IYC cultural core foods as food bad for some children is likely to have a negative impact on the diet of younger IYC since for many, fish (the main animal source food can only be consumed in the soups and stews that accompany the staples. (This issue needs further exploration.)

5. The study provides solid evidence that the caregivers in Gomoa East have clearly articulated cultural values concerning their personal responsibility for their child's well-being. This is captured in an often-repeated phrase to the effect that "It is up to me to ensure that my child is healthy." This perspective contrasts markedly with cultural settings in which child health and ill health are, at least to some degree, attributed to forces outside the mother's control. When child illness is seen as emanating from supernatural forces or innate characteristics of the child, it is more difficult to persuade caregivers that their own actions can make a difference. There is, of course, a negative side to this cultural perspective as it can lead to self blame and blame from others, caregiver depression, and a failure to accept the idea that some aspects of child health and development are, in fact, outside the control of the caregiver.

6. The cultural value of helping relatives and neighbors was another theme in the discussions with caregivers. Particularly during the difficult months the cultural norm is to respond to help with food if one has the means to do so. The response may be structured as a loan, with the expectation that the petitioner will return the help, either in money or in kind; that is, it is not necessarily an outright gift. In theory, the cultural value of sharing, on one hand, and the value that one is responsible for the health of one's child, on the other, could be a source of psychological tension for mothers. They are simultaneously independent and interdependent. Thus, we can postulate that for psychological health, caregivers of IYC have to find a balance between these two cultural features.

## **Social Environment**

*Preamble:* As described in Chapter 1, the label "social environment" refers to social conditions and institutions outside the group that is the focus of attention. In this case we can define it as the society outside of Gomoa East District. This definition puts goods and other influences from other districts, national Ghanaian factors, and factors that reside outside of Ghana into this component.

1. A primary finding with respect to the social environment is that significant amounts of “core IYC foods” (e.g. sugar, powdered milk, rice, oil, tomato paste, fish) come from external sources as well as other ingredients that are also used in the preparation of family foods.

2. Another major finding also relates to the social environment; namely the extensive nutrition and health knowledge of the respondent-caregivers. While it is possible that traditional culture in this region contained similar ideas and therefore provided a supportive environment for nutrition education, the language and substance of some of the women’s commentaries indicates that they have been exposed to ideas and concepts from the wider world of nutritional science. With the majority of respondents not having any schooling at all, the source of these ideas and concepts are likely from interaction with health workers. With respect to the current study we note that this finding demonstrates an important aspect of the wider social environment that is often unrecognized: namely, the transfer of knowledge from external sources to caregivers via health workers and/or others with whom caregivers interact.

3. A third finding concerning the external social environment is the documentation of the role of local stores and markets as intermediaries between externally sourced foods and households.

## **Technology**

*Preamble:* In the context of applying the cultural-ecological framework to infant feeding, technology refers particularly to the tools and associated practices that are involved with the production, preparation and feeding of foods to IYC. Baby bottles would be an example in many parts of the world, but fortunately this particular tool, which can cause serious problems of food borne contamination and inappropriate feeding behaviors, did not surface as an issue in Gomoa.

1. A finding with respect to technology and IYC feeding in Gomoa East is the apparent lack of appropriate equipment for storing IYC foods. Use of thermos bottles was rare and the containers used by caregivers to store food and beverages for IYC for long periods of time of up to six hours are ordinary plastic and polystyrene containers, which do not keep food hot for any length of time and may potentially foster the proliferation of pathogens. Another aspect of IYC food management is the bulk cooking and storage of soups and stews that accompany the staples. These are stored for periods of up to three days. It is not clear if the daily heating reservation is enough to preserve these foods. Storing food for many hours in clearly unsafe conditions may not ensure the safety (from health perspective) of IYC foods. The matter of food storage and food safety of IYC complementary foods needs further investigation.

2. Water management in the household is also a fundamental aspect of technology that directly and indirectly affects infant and young child feeding. There are two aspects of water management that directly affect IYC nutrition and health: i) water quantity and ii) water quality. Both of these aspects involve technological as well as environmental issues. With respect to access to quantity, majority of households have access to pipe borne water from household and communal taps. Caregivers deem this safe and not needing any further treatment (boiling). Since most household store water for drinking it is not clear if storage practices are sufficient to prevent recontamination.



3. Another essential feature of household technology that affects IYC feeding is cooking equipment and the use of firewood and charcoal as the fuel for cooking. The consequences of the current technology specifically for IYC feeding include: i) the time requirements to obtain firewood, ii) the need to re-establish the fire to heat or reheat food, which affects caregivers ability to respond to infant and young child hunger cues in a timely fashion, as well as creating the potential for illness through food-borne diseases that are stored beyond a safe period of time (see item 1 above).

## **PART 2: OPPORTUNITIES FOR INTERVENTIONS TO IMPROVE IYC DIET**

This landscape study is intended to generate data and insights to inform the design of interventions to improve nutrition of infants and young children in rural farming communities in Northern Ghana. The major barriers to IYC dietary adequacy are affordability and poor access to some of the components of core IYC foods as well as their availability during the lean season. None of the households studied were able to produce the annual household food requirements. The resultant reliance on markets coupled with the limited availability of cash and earning opportunities was considered by caregivers as the primary limiting factor to purchasing food in general and the nutritious food for IYC feeding in particular. This situation highlights the importance of placing a greater focus on improving local access to nutritious foods at a low cost.

Despite these challenges, the FES findings suggest a generally positive environment that present opportunities for interventions to improve the quality of IYC diets. Features of this positive environment include: 1) a cultural commitment to the concept of special foods for IYC which may serve as an entry point from which to build targeted nutrition education to increase the nutritional quality of the IYC diet; 2) Caregivers (mothers) have primary responsibility for deciding on and purchasing food for their IYC and the fact that they make every effort to provide their IYC their preferred foods suggests that interventions that will involve the marketing of special IYC foods may be easily adopted; 3) caregivers' narratives and comments demonstrating knowledge or perceptions of healthiness of foods and the perceived benefits that ensue from feeding IYC healthy foods suggest a motivation for caregivers that may be appealed to if nutritious IYC foods could be made more accessible.

Identified opportunities for interventions include nutrition-specific approaches that address the direct causes of dietary inadequacy and nutrition-sensitive approaches that address the underlying and indirect causes of under-nutrition in IYC. In discussing opportunities for interventions it is important to acknowledge some past and current interventions as there may be important lessons to learn.

### **Nutrition-specific interventions**

- **Enrichment of porridges with nutrient dense foods in the diet:** Maize and millet porridges are central in the IYC diet and are consumed on a daily basis by the majority of IYC. Mothers recognize the healthiness value of adding nutrient-dense foods to porridges. Their prohibitive cost however restricts their use. Despite this constraint caregivers could still be impressed upon to consider spending more on their IYC for the reasons stated above and with the right BCC messaging. In a previous project that implemented food-based

interventions to increase micronutrient intakes among IYC in the Savelugu-Nanton District, enrichment of porridges with groundnut paste, egg, palm oil and fish powder to plain *koko* was “sold” to caregivers as feeding different variants of *koko*: this ensures that IYC do not only have the benefits of the health giving properties of the different foods added, IYC will also not get tired of eating the same *koko* everyday (Armar-Klemesu and Zakariah, 2003) .

- **Home fortification with micronutrient powders and supplements:** Lower cost options for enriching these porridges are needed. The use of micronutrient powders (MNPs) may be the most effective means of increasing the nutrient adequacy of porridges however current national policy advises caution on their use for home fortification due to inadequacy of measures to control malaria (GHS, 2014). Excerpts from the report specifically says that “home fortification should be implemented only under operational research conditions to ensure adequate monitoring of adverse events and also provide information to inform policy for possible scale-up”. Another product that may well fill this gap if appropriately priced and effectively marketed is *KOKO Plus* (Ghosh et al., 2014), a soy-based micronutrient supplement currently being marketed and only available in some areas in the Northern region.
- **Blended multigrain flour mixes:** Long-standing national efforts to promote the use of specific blended IYC multi-grain flour mixes (popularly called weanimix) have generally not made significant headway. Weanimix dates back from the mid-1980s when the Ghana Health Service, UNICEF and other partners undertook large-scale campaigns to promote the feeding of infants with a 4:1 cereal/legume mixture. This approach typically focused on home production by individual mothers or women’s groups. In this and a similar study (Pelto and Armar-Klemesu, 2010) weanimix is virtually absent from the feeding repertoire of caregivers. Some of the reasons given are the high cost of the individual constituents and the time and effort needed to process the mixtures. Various local manufacturers are now producing variants of Weanimix under several brand names. However these low-cost products have had limited success in displacing the more expensive established brand names such as Cerelac, even among consumers who supposedly cannot afford them (Masters et al. 2011)]. In Accra, for instance these cereal-legume mixes are mostly sold in the larger supermarkets and shops. Vendors in the low-income neighbourhoods did not sell them because of past experiences of losses they incurred: they were not patronised and ended up being infested with weevils and had to be discarded. Although weanimix was completely absent in the 24-hr dietary records of the Gomoa East IYC caregivers rated it highly on health (slightly higher than Cerelac) but low (and at par with Cerelac) on accessibility. Caregivers main concerns were that weanimix is expensive to prepare if one has to acquire all the individual ingredients and the branded products are not sold in their communities – they have to travel to the major market centres in Swedru or Kasoa if they wanted to purchase them. Given the Gomoa East caregivers preference for the convenience of ready prepared millet porridge, there might be a window of opportunity to promote ready-prepared mixed grain porridges, if vendors are willing to take up the challenge. This must necessarily be supported with appropriate BCC messaging.
- **Fortified blended multigrain mixes and beverages:** The consumption of chocolate drink powder, fortified infant cereal, and milk powder, indicates the availability of these products in the market, but accessibility is constrained by their cost. This might indicate that there is room for a low-cost (locally produced) fortified beverage or porridge mix specifically formulated for IYC. These could provide great nutritional benefit if offered at a low cost.

Public-private partnerships already exist in Ghana to provide low cost fortified products (such as *Maisoy Forte* produced by Yedent<sup>5</sup>) for these age groups, but these products are not yet available at the public markets. A scoping study of the infant food market in Accra, Kumasi and Tamale found that *Maisoy Forte* was sold in only one up market supermarket in Accra.

- Fish is the main animal source food in IYC diets but quantities consumed are negligible. Since preparing IYC food separately is an accepted practice it is possible to increase consumption by appealing to caregivers to add more fish to IYC specially prepared stews and soups or to portions of family food served.
- There is urgent need for targeted BCC messaging to address the belief that feeding IYC “heavy” or “solid” food before they begin to crawl or walk actually delays this developmental milestone. It seems plausible that consumption of some nutritious ingredients is being delayed in at least some children due to this proscription.
- Although the traditional beliefs about health-giving foods for IYC in Gomoa East were relatively consistent with what we know to be nutrient-dense foods, there may still be value in fostering a more modern understanding of nutrition concepts. This may be helpful to support the uptake of different nutritional products targeting the improved nutritional adequacy of IYC diets that may be introduced in the future.

### **Agricultural approaches**

Agriculture-based interventions that may improve IYC diet include increasing the local production and marketing of the core foods in the IYC diet, such as maize and millet, (green leafy) vegetables and legumes.

- Interventions to reduce post-harvest losses of own-produced maize would help to extend the availability of these into the lean season.
- Beans are an important part of the IYC diet and mothers use saltpetre (kanwa) to speed the cooking process. It is not known whether saltpeter has any adverse health effects and this needs to be investigated. In the interim it may be prudent to consider promoting consumption and cultivation of quick-cooking cowpea varieties currently available on the market.
- Although vegetables are generally available, the limited amounts and the seasonal absence of fresh vegetables were noted as important limitations to the use of these in IYC diets. Promoting horticulture activities may contribute to increased access to vegetables, and specific messages to increase the frequency of feeding these among the youngest age groups, should be included. Some Gomoa East caregivers resort to using wild growing dandelion when the preferred kontomire is unavailable. There is need for research to determine the viability of this plant as an alternative.

### **Other nutrition sensitive interventions**

- **Untreated drinking water:** Most households have access to pipe borne water and which is deemed to be safe. However drinking water is mostly stored and its safety cannot be assured. There is a need to investigate the safety of water storage and handling practices in the

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<sup>5</sup> A local agro-processing company

household. There is also a need for BCC to ensure treatment of drinking water for IYC, such as simple boiling.

- **Food storage practices:** Current storage practices of IYC foods is less than ideal. There is a need to assess the effectiveness of storage containers used with respect to pathogen growth and food safety. This will ensure the design of appropriate BCC messages and also facilitate the adoption of interventions that will ensure that household have access to the safest storage procedures that are compatible with their limited resources

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