

KENYA

ETHNOGRAPHIC STUDY

Focused Ethnographic Studies of Infant and Young Child Feeding Behaviours, Beliefs, Contexts, and Environments in Vihiga, Kitui, Isiolo, Marsabit, and Turkana Counties in Kenya

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and Turkana Counties in Kenya**

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LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
APHIA Plus	AIDS Population and Health Integrated Assistance
BCC	Behaviour Change Communication
CHEWs	Community Health Extension Workers
FES	Focused Ethnographic Study
GAIN	Global Alliance for Improved Nutrition
IYC	Infant and Young Child
IYCF	Infant and Young Child Feeding
LNS	Lipid-based Nutrient Supplement(s)
MNP	Micronutrient Powder(s)
REGAL-IR	Resilience and Economic Growth in the Arid Lands – Improving Resilience
USAID	U.S. Agency for International Development
USG	United States Government
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organisation

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CHAPTER ONE

“ Inappropriate feeding practices have profound consequences for the growth, development and survival of infants and children. Optimal infant and young child feeding practices begin with exclusive breastfeeding in the first half of infancy and appropriate complementary feeding from six months through at least two years of life”

Introduction

This monograph is devoted to presentation of the results from ethnographic studies of infant and young child feeding that were undertaken in five counties in Kenya – Vihiga, Kitui, Isiolo, Marsabit and Turkana as part of a large project aimed at improving nutrition in these communities. We begin with background information followed by an introduction to the larger project, the USAID Kenya Feed the Future programme and the theoretical framework for the studies

Feeding practices as a driver of health and development in young children

Adequate nutrition during infancy and early childhood is a prerequisite for healthy growth and development. Under-nutrition, as a result of inadequate macro and micronutrient intake, is a factor in 53% of children’s deaths. The immediate consequences of poor nutrition during the early formative years include morbidity, mortality and delayed mental and motor development. In the longer term, early nutritional deficits are linked to impairment in intellectual performance, work capacity, reproductive outcome and overall health during adolescent and adulthood. Malnourished girls face greater odds of giving birth to malnourished and low birth weight infants. The period from conception to 23 months of age, which is now commonly referred to as “The first 1000 days,” is a critical window for the promotion of optimal growth, health and behavioral development. Infant and young child feeding practices are a major determinant of child nutritional status outcomes throughout the world, including Kenya. Inappropriate feeding practices have profound consequences for the growth, development and survival of infants and children. Optimal infant and young child feeding practices begin with exclusive breastfeeding in the first half of infancy and appropriate complementary feeding from six months through at least two years of life. Appropriate complementary feeding includes timely initiation of solid/semi-solid foods, increasing the amount, density and variety of foods as the child grows, increasing frequency of feeding as the child gets older, responsively feeding the child and ensuring that good hygiene is observed in preparation and feeding.

Infant and young child feeding practices in Kenya, as in many low and middle-income countries, are less than optimal. Latest statistics indicate that only one in five children in Kenya aged 6- 23 months consumes an acceptable diet (KNBS, 2014). Lack of up to date knowledge of caregivers and their influencers in society on optimal infant and young child feeding practices have been found to be

characteristic in the country (Thuita, 2008; Nduati et al., 2008, Israel-Ballard et al., 2009). Improving complementary feeding practices among Kenyan children aged 6–23 months could significantly contribute to improved child survival.

Recent analysis suggests that more than 15% of the total deaths and more than 20% of the existing burden of stunting in children under 5 years of age globally could be prevented if children could access just 10 evidence-based nutrition interventions at 90% coverage (Bhutta et al. 2013). However, the few available studies of program effectiveness in nutrition find that programs are less effective than would be predicted from the efficacy trials that are the basis for evidence-based programming. Some of this is due to gaps in utilisation within households. To a greater extent, however, gaps can be attributed to problems in program design and implementation (Bhutta et al. 2013). Among these problems, inadequate adaptation to translate programs to fit local contexts and conditions requires attention.

There is a growing recognition that the difficulties encountered in reconciling the differences in the impact of specific nutrition interventions assessed through efficacy trials in controlled conditions, compared with the impact of these interventions delivered in ‘real life’ through nutrition programs, are due, at least in part, to a lack of knowledge about implementation pathways and processes. Such a body of knowledge, resting on rigorous scientific inquiry, could be drawn on for guidance in program planning and development. ‘Implementation research in nutrition’ is an emerging area of study aimed at addressing this problem, by building an evidence base and a sound theoretical foundation for program implementation. In addition to their application to support the goals of the larger project, the dissemination of Global Alliance for Improved Nutrition (GAIN) research activities, including the ethnographic studies that are the subject of this monograph, are intended to contribute to building implementation research in nutrition.

Purpose of the project

The U.S. Agency for International Development (USAID) and the Global Alliance for Improved Nutrition (GAIN) have been working collaboratively to “drive an evidence-based, catalytic approach for countries, industry leaders, foundations and others to help foster and sustain market-based food and nutritional security and value chain integration” in Kenya (Tumilowicz et al 2015). The first phase of the project in Kenya was devoted to conducting assessments in strategic focal areas of Feed the Future (FTF) in the country in order to identify opportunities to improve nutrition along the value chains of focal commodities. The first set of assessments included ethnographic studies in Kitui and Vihiga Counties, and the second assessment included the ethnographic studies in Isiolo, Marsabit, and Turkana counties. The latter set of assessments was organized by GAIN as part of a consortium to implement the Resilience and Economic Growth in the Arid Lands – Improving Resilience (REGAL-IR) program. REGAL-IR is one of two programs initiated by USAID Kenya as part of the expanded Feed the Future strategy in Kenya (USG FTF (2011).

The goals of the larger project, which apply to both programs, have been articulated specifically with respect to REGAL-IR as follows:

“The goal of the REGAL-IR program is to reduce hunger and poverty, increase social stability, and build strong foundations for economic growth by strengthening social, economic, and environmental resilience in pastoral and transitioning communities in Kenya’s arid lands. This government-led, multi-donor effort seeks to identify, integrate, and sustain humanitarian investments that prove to be effective in sustainably increasing resilience and reducing the need for recurrent humanitarian assistance. Improved nutritional outcomes at the household level is one of the program objectives. This objective aims to increase the impact of REGAL-IR livelihood, value chain, and natural resource management activities on nutrition and to reinforce the efforts of USAID’s health and nutrition program in the target counties. The nutrition component specifically seeks to improve consumption of nutritious foods and to reduce nutritional vulnerability at the household level, especially among children under 5 and women of reproductive age.” (Thuita and Pelto 2014)

Theoretical Background

Deciding what is important to include in the study

All research, whether it is testing a hypothesis in a laboratory, formative research for an intervention or market research to determine the potential of a product, rests on a theoretical foundation. This foundation includes a set of assumptions about the characteristics of the phenomenon that is being investigated, and “how the world works” in relation to these characteristics. Research is always improved when the investigators make their assumptions explicit. One way to achieve explicitness is to construct a theoretical framework for the study, which helps to ensure that critical factors are examined. The topic of infant and young child feeding is vast, and potentially many different aspects could be relevant for planning activities to improve complementary feeding. Collecting information on all of these aspects would be very time consuming and is not practical. Therefore, it is particularly important to have a theoretical framework to guide a focused ethnographic study. The study was aimed at describing and understanding infant and young child feeding from the household perspective. Thus, the theoretical model for the study used a cultural-ecological framework.

A cultural-ecological framework for infant and young child feeding: Understanding practices, behaviors, and beliefs from a household perspective

The framework for these studies is holistic, derived from the cultural-ecological model from nutritional anthropology. The diagram below was initially designed to describe the determinants of nutritional status anywhere in the world.

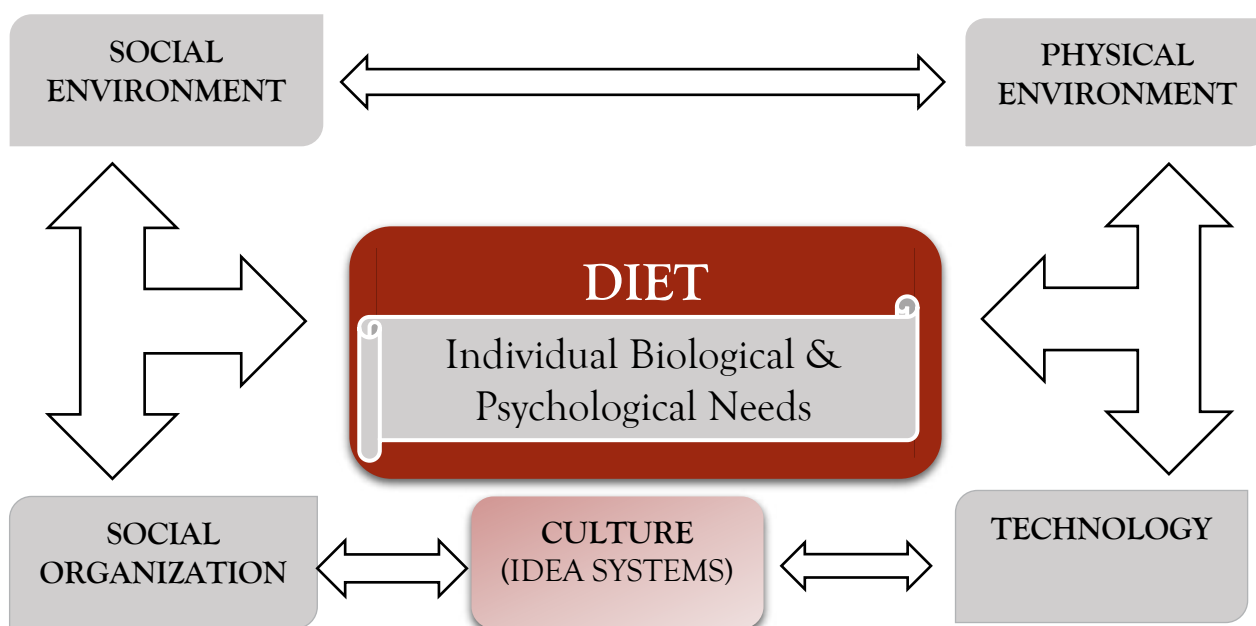


Figure 1.1 : A cultural-ecological framework for food and nutrition
(Adapted from Jerome, Kandel and Pelto, 1980)

When the focus is at the societal level, as it is in this general, the box labeled “physical environment” refers to such factors as climate, water resources, soil characteristics, transportation networks, and other features that establish the conditions for food procurement and production. The box labelled “social environment” refers to the social systems that lie outside the society of concern. For example, in small-scale, rural societies, where most food production and consumption is localized, the existence of other societies who are introducing new foods into the community or taking away

crops or other food products to external markets can have profound, often negative, effects on diet. “Social organization” encompasses a large set of factors at multiple levels within the social group that is the focus of analysis. These include the economic and social structure of households, social institutions, and political and economic structures that relate to the production, distribution and consumption of food. “Technology” refers to the entire range of tools, techniques and equipment that are involved in the production, distribution, preparation and consumption of food. The box labelled “culture” encompasses all the ideas (including beliefs and values) that affect and relate to the acquisition, preparation and consumption of food. All of the components of the model are inter-related and the arrows are a simplification, intended to indicate the concept of inter-relationships.

Applying the model to IYCF

The focus of our study is the household, not a society. Thus, using the model as a guideline for deciding what needs to be included in our IYC study requires specification of the critical features in each of the components of the model from the perspective of household management. Drawing from the international literature on IYC feeding, as well as personal experience, we specified the areas of investigation as follows:

- Physical Environment:** Venues where IYC foods are potentially available to households, and the means of access to these venues.
- Social Environment:** Sources and types of foods and ingredients that are produced outside the household; also sources of support outside the household for childcare related to food intake (e.g. medical, crèches, relatives)
- Social Organization:** Household economic conditions; household economic management (focus on food expenditures), childcare behaviors related to food and nutrition; household composition
- Technology:** Facilities available in the household for foodpreparation and storage (e.g. cooking stoves, refrigeration)
- Culture:** Ideas, values, and knowledge related to IYC feeding and care

The specific items listed above 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.

Two main types of research were conducted:

- (1) *dietary studies to identify critical issues in current infant and young child intake, and*
- (2) *ethnographic studies to provide data and insights about the determinants of feeding patterns and practices.*

Improving nutrition and health in individuals and populations depends ultimately on voluntary behaviour change in an environment that does not prohibit the potential for change. For nutrition, the undisputed environmental barriers to behavioural change include lack of availability and access to food, lack of technological means to transform potentially edible food into food that can be consumed and physiological conditions that prevent individuals from consuming foods or utilising the nutrients that they contain. Outside of these broad parameters are sets of social, economic, ecological, agricultural, cultural and psychological determinants that facilitate or impede the potential for people to adopt behaviours that lead to better nutrition. Interventions to improve nutrition are directed

Our goal in this monograph is to contribute to the development of this larger base and, thus, to the development of implementation science in nutrition as it pertains to infant and young child feeding.

at one or more of these sets of determinants. Designing and implementing effective interventions requires knowledge about the populations and communities—the context—in which interventions are situated, including knowledge from the perspectives of the people who are intended to benefit from the behaviour changes that are being promoted. Focused ethnography provides a means of acquiring this information.

The application of sound ethnographic methods and the design of ethnographic studies to meet immediate program needs, by its very nature, simultaneously generate many additional insights and knowledge that goes beyond the immediate requirements of formative research for intervention planning in a specific site. Such data and insights help to build a sounder empirical base for future interventions. However, the ethnographic data from formative research is rarely shared outside of a project. Our goal in this monograph is to contribute to the development of this larger base and, thus, to the development of implementation science in nutrition as it pertains to infant and young child feeding.

How the monograph is organized

Chapter 1 contains background information on the larger project of which our studies were a part, as well as the rationale for the project focus on nutrition, and the role of ethnography within the project. Chapter 2 introduces the study areas while chapter 3 covers the study methodology. The rest of the chapters (Chapters 4- 9) present ethnographic data, which are organized in relation to categories that have previously been identified as significant dimensions of IYCF (Pelto et al 2003). These categories can be summarized under the headings: “What, Where, How, Who, When, and Why.” In each chapter we summarize the results for the five counties as a whole, often using data from one county to illustrate a particular point, and noting where there are significant differences between counties.

A note on use of acronyms and issues of terminology

Throughout the monograph we make extensive use of acronyms, not only with reference to organizations but also for phrases that are in common use. According to the New Oxford American Dictionary “an acronym is an abbreviation, used as a word, which is formed from the initial components in a phrase or a word.” For example, in nutrition it is now common to refer to “infant and young child feeding” as IYCF. Our style is to give the full phrase the first time we use it, followed by the acronym in parentheses, e.g. infant and young child feeding (IYCF). After the initial appearance we use only the acronym in subsequent discussion.

In English, as in many other languages, there is considerable ambiguity, in both popular and technical discussion, with respect to the words that are used to refer to infants and young children. “Baby” signifies a very young child, beginning with a newborn. But when does a child stop being a baby? When she starts walking? When she starts talking? Is there an age or developmental cut-off? In technical usage infant has become defined to mean a child from birth through 11 months of age. After his first birthday a child is no longer an infant from the perspective of technical usage. In some circles, the word “toddler” has been used as a technical term for the post infant period. However, it has always been ambiguous. It is used generally to designate children who are no longer “babies” but are not yet “preschoolers.”

In nutrition the phrase “Infant and Young Child” has come to mean the period from birth through 23 months of age, but this is a relatively recent designation. Within this period, identifying the age range of “complementary feeding” as 6 to 23 months is directly related to current nutrition policy and the concept of “complementary feeding.” This phrase puts the emphasis on food as a complement to breast milk, whether or not a child is actually being breastfed. The international recommendations are to practice breastfeeding through the second year of life; that is, through 23 months of age. It begins at 6 months of age (or “4 to 6 months” in some countries) in order to underscore the importance of exclusive breastfeeding in the early months of infancy.

CHAPTER TWO

Overview of the Research Counties

Introduction

This chapter provides a general description of the counties and communities where the five studies were conducted. The overview includes highlights on geographic location, population, sources of livelihood, community activities and access to social services such as health, water and infrastructure. A description of communities where the studies were conducted is also included.

1. VIHIGA COUNTY

Vihiga County is located in western Kenya, on the eastern fringes of the Rift Valley in the Lake Victoria Basin. The terrain is undulating with occasional hills and valleys with streams flowing from northeast to the southeast, draining into Lake Victoria. Vihiga is one of the smallest counties in the country and is bordered by Kakamega County to the North, Nandi County to the East, Kisumu County to the South and Siaya County to the Southwest. There are six administrative divisions in Vihiga: Luanda, Emuhaya, Sabatia, Tiriki East, Tiriki West and Vihiga.

Table 2.1 shows the land size, population and population density of the divisions within the county.

“ highlights on geographic location, population, sources of livelihood, community activities and access to social services such as health, water and infrastructure ”

Table 2.1 - Land size and Population in Vihiga Divisions

Division	Area (Km2)	Population	Population density
Luanda	98.6	102,084	1,035
Emuhaya	74.6	76,457	1,025
Sabatia	110.4	130,129	1,179
Tiriki East	97	66,181	682
Tiriki West	92.1	84,317	915
Vihiga	90.3	91,632	1,015
TOTAL	563	550,800	978

Source: (VDSP, 2005-2010).

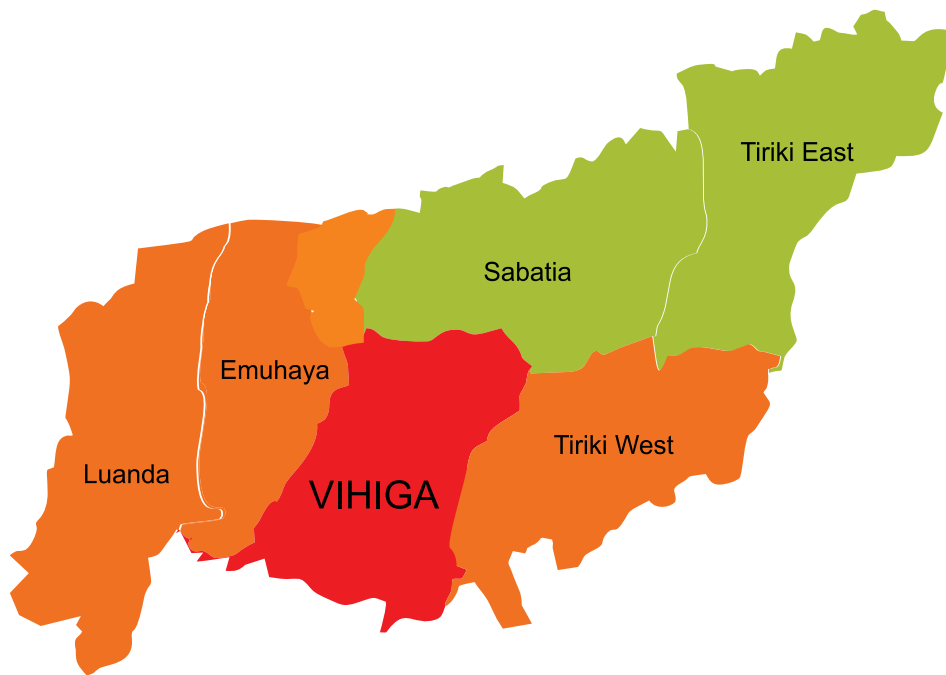


Figure 2.1 : Divisions in Vihiga County

Vihiga is considered the third most densely populated county in the country, after Nairobi and Mombasa counties. As can be seen in the Table 2.1, population density ranges from 1,179 persons per square kilometer in Sabatia division to about 682 persons per square kilometer in Tiriki East. This settlement pattern has been greatly influenced by topography and distribution of rainfall. Figure 2.1 shows the geographic location of the 6 divisions in the county.

The main ethnic group in Vihiga County is the Abaluhya, a bantu people living in the agriculturally productive Western part of Kenya. This is the second largest tribe in Kenya after the Kikuyu, contributing 14% to the Kenyan population. The Abaluhya consist of over 22 sub-tribes, each speaking a different dialect of the Luhya language.

Water and infrastructure

Compared to many areas of Kenya, Vihiga has good surface and groundwater resources with four permanent rivers and many wells, protected springs, boreholes and dams. Most residents (nearly 93%) in the county harness water through roof catchment. However, only 20% of the total population has access to a source of potable water for drinking within a kilometer of their homes. Sanitation resources are poor, and springs in the County are judged to be inadequately protected. The road services are insufficient as most roads are impassable in wet conditions. 14% of the total road length in the county is paved. Only 41% of households have electricity with majority of households in the county relying on wood and charcoal for fuel.

Economy

Agriculture and livestock production are the key livelihood activities, providing for nearly 80% of incomes generated. The main food crops cultivated are maize, beans, millet, potatoes and bananas with maize recording average yields of 20 bags/ha. Within the county, quality of land and cropping patterns are variable. The cash crops in the district are tea, coffee and sugarcane. Small numbers of cows, pigs and poultry per household, mainly the traditional breeds, are common.

The Upper Midland (UM) zone has well-drained fertile soils with good potential for crops like tea, coffee, maize and beans, and covers most parts of central Sabatia, Vihiga and Tiriki divisions. The Lower Midland zone, consisting mainly of the red loamy sand soils derived from sediments and basement rocks, supports sugarcane, maize, beans, and sorghum production. This zone is mostly found in Emuhaya division.

Other income generating activities include commercial activities, particularly trade, and informal and formal wage sectors. Remittances and gifts to households from relatives living outside the county contribute 20- 22% of household earnings. In spite of these livelihood activities, an estimated 60% of the county's population lives below the poverty line. Except for a milk processing plant and tea factory in Sabatia division, industrial activity is low.

Food Security

Despite the favorable climate and soils, Vihiga County is not self-sufficient in food production. The high population density and the subsequent sub-division of land has resulted in diminished farm sizes that limit the amount of land that can be put into production. Most of the food needs of the community are met by procurement of food obtained from the high potential districts of Trans Nzoia, Bungoma, and Nandi districts. In general, food insecurity in the county is associated with low agricultural yields, poor agricultural extension, natural calamities and poor prices of farm produce, including tea.

Health facilities

Vihiga County has 23 public health facilities, and 57 privately owned service providers. However, services are inadequate to meet population needs. Among the documented problems are poor supply of medical equipment, high costs of health services and lack of sufficient personnel. There are high rates of preventable diseases, including malaria and pneumonia.

Overall, Vihiga has rich agriculturally productive land, but poverty is widespread with majority of the population living in serious poverty and food insecurity. The causes of poverty are diverse. They include lack of capital for investment, high population density coupled with high dependency ratio, small uneconomical land units, lack of markets for farm produce, HIV/AIDS, and poor infrastructure. The areas of high concentration of poverty are the 4 divisions of Luanda, Emuhaya, Tiriki East and Tiriki West where the study was carried out.

The Four Study Communities

The FES study was conducted in four divisions within Vihiga: Luanda, Emuhaya, Tiriki East and Tiriki West. The following sections provide information about these four areas.

Luanda	Emuhaya Sub-County
<i>Luanda sub-county has both rural and urban communities. The sub-county is divided into four wards. Covering an area of 98.6 km² and with a total population of 102,084, Luanda has a population density of 1,035 persons/km². The sub-county has 6 health facilities with each facility having 2-3 health workers. Health facilities are approximately 5-10 km apart. There are a number of primary and secondary schools as well as several polytechnics that provide educational resources for middle and lower level education. Located on the Busia-Uganda Highway and about 30km from Kisumu city is the robust Luanda market which is active daily. The main occupation of the people of Luanda is farming.</i>	<i>Emuhaya is bordered by Luanda to the west, Kakamega County to the north and Kisumu County to the South. It is 35km from Kisumu City, the regional capital. Occupying an area of 74.6 km² and a population of 76,457, Emuhaya has a population density of 1025 persons/ km². It has four named locations and is mainly rural. The sub county has 1 sub-district hospital, 3 health centers and 3 dispensaries. As in Luanda, the health facilities have 2-3 health workers except for the sub-district hospital, which has 15 health workers and some specialized health services. There are a number of primary and secondary schools, as well as a theological college, which also offers training for low and middle-level trainees. Emuhaya has two tarmac roads passing through it: Kima – Majengo and Luanda – Kakamega. It also has two open markets: KimaWekhomo and Esibuye Market, which sell local produce. Like Luanda, the people of Emuhaya are farmers, small scale business owners, and casual laborers. There are a few formal sector workers. Maize, groundnuts, cassava, and beans are the main crops.</i>

East Tiriki

East Tiriki is farthest area from the administrative headquarters of Vihiga county. It borders Nandi County to the east and Muhoroni District of Kisumu County to the west and 80 km from Kisumu regional city. It covers an area of 97km², has a population of 66,181 people and a population density of 982/ km². It has only 2 health centers and is less densely populated than the other areas in the county. There are multiple languages spoken here because of a settlement pattern in which a number of tribes are present. The languages in East Tiriki include Nandi, Kiswahili, and Luo.

The sub-county has several health facilities, usually 5-10 km apart, and a number of primary and secondary schools. There are both large and small scale farmers in the sub-county. Agricultural activities include tea farming and growing of maize, bananas, beans and sweet potatoes. Animal husbandry includes raising of sheep, goats and chickens. Rural electricity is available even in the most remote areas of the sub-county. Water sources include boreholes, protected springs and tap water.

West Tiriki

West Tiriki borders Kisumu County on the south. This District covers 92.1km; it has a population of 84,317 people and a population density of 915. There are four population centers. A large area is covered with unproductive, rocky and rocky land. Here there is also a problem of poor access roads in the interior. People at the border with Kisumu County speak both Luo and Luhya languages.

The District has several health facilities 5-10km apart with 2-3 health workers in each. It also has several primary and secondary schools. Rural electricity is theoretically available to the majority of homesteads but economically accessible only to a minority. The main source of water is protected springs.

Majority of inhabitants are farmers. Many grow some tea which is the main cash crop. This is delivered to tea collection centers which are approximately 3 – 5 km from most farms, then delivered to Mundete tea factory which is some 15 – 20 km away by the Kenya Tea Development Authority (KTDA). Families also grow maize, cassava, sweet potatoes, and beans. Raising cattle, sheep, goats and chicken.

2. KITUI COUNTY

Kitui is one of the three counties in Eastern Province located in the southern part of Kenya. The county borders Machakos and Makueni districts to the west, Mwingi to the north, Tana River to the east and TaitaTaveta to the south (Figure 2.2). The county covers an area of approximately 20,402km² including 6,900.3km² occupied by the Tsavo National Park. The inhabitants of Kitui are predominantly Akamba.

General information about Kitui County is presented in Table 2.2.Kitui county is divided into 10 administrative wards .The wards are Central, Mutomo, Mwitika, Mutitu, Chuluni, Ikutha,Yatta, Mutonguni, Matinyani and Mutha. Most of the wards have low population density which coupled with their large size, makes provision of essential services, such as water, health and education, difficult to organize. Road networks are also limited. The wards with high population density are: Central, Matinyani and Mutonguni.

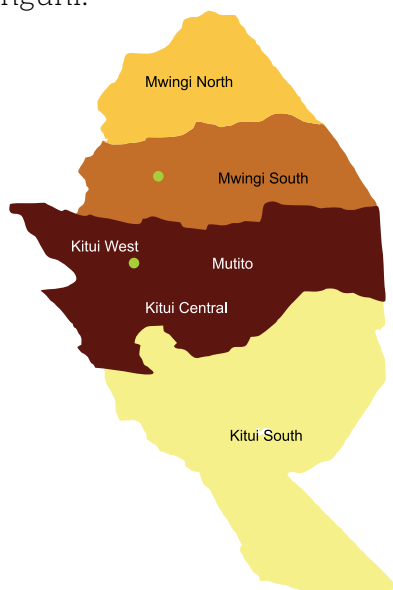


Figure 2.2 : Map of Kitui County showing livelihood zones

Climate

The climate of Kitui County varies between arid and semi arid, with very erratic and unreliable rainfall. Most of the area is generally hot and dry. The annual rainfall ranges between 500 – 1050mm with 40 per cent reliability. The long rains are in April/May and there are short rains in November/December. The periods falling between June to September and January to March are usually dry.

Water and infrastructure

The major sources of water are seasonal rivers that form during the rainy seasons and dry up immediately after the rains. River Athi is the only perennial river in the district and flows along the border with Machakos. The county has no lake, but has several dams, which play significant roles in providing water. Most of the dams dry up during the dry season. Spring water is generally found in the hilly areas of the county. The county is therefore faced with challenges of availability of water for both domestic use and agricultural production and the persistent problem of water shortage is borne by women who have to trek long distances to fetch water for domestic use.

Economy

The limited availability of water coupled with poor soil fertility and lack of access to land in some parts of the county due to land eviction leads to low levels of cultivation of crops (KFSSG, 2011). The land evictions have resulted in a reduction in the diversity and reliability of harvests as several crops that thrived in the hilly area, including sweet potatoes, sugar cane, bananas, avocado, mangos and other fruit trees, cannot, easily be grown in the lowlands while maize is less reliable (Eriksen and Lind, 2005). Consequently, Kitui relies heavily on food supplies from other districts to meet its food needs for the better part of the year. With the exception of cereals, the markets supply the bulk of food consumed in the mixed farming livelihood zone (FAO, 2005).

Poverty is a major development challenge in the county. The poor constitute about 66 per cent of the total population. The district is predominantly low potential (66 per cent) with 32 per cent being medium potential and only 2 per cent being of high agricultural potential. It is therefore evident that most wards fall within the low to medium potential areas. At ward level, the highest concentrations of the poor are found in Ikutha, Mutomo and Chuluniwards (FAO, 2005).

Food security

Low agricultural productivity and erratic rains result in perennial food shortages in the district. For instance, in 2005, the average yield of maize was only 0.06T/ha while total cereal production was a paltry 6,661 MT as compared to the County estimated annual demand of 82,839 MT. Consequently, Kitui relies heavily on food supplies from other districts to meet its food needs for the better part of the year. With the exception of cereals, the markets supply the bulk of food consumed in the mixed farming livelihood zone, which supports about 57% of Kitui's population.

Nearly 39% of the residents reside in the marginal mixed farming regions, which rely on livestock (milk and other products) for food. However, prospects in this livelihood system just like in the mixed farming zone are beset by high vulnerability to recurrent and prolonged droughts. This often results in repeated crop failures, lack of water and pasture, and livestock mortality, seriously undermining both present and future efforts to ameliorate food security.

Ease of access to food in the markets is repressed further by widespread low purchasing power and poorly developed food markets, often characterized by high and unpredictable food prices. Because of inadequate food production and access, malnutrition is rife with the levels of protein-energy malnutrition and micronutrient deficiencies, particularly vitamin A, zinc and iron deficiencies being among the highest in the country (GOK, 1999).

Health situation

The County has 92 health facilities (including 4 hospitals and 5 nursing homes), which are inadequate given the geographic dispersion of the population. Most of the facilities are found in central and

Kabatiwards. Most of the facilities lack the necessary equipment and personnel to enable the provision of quality services. The average distance to the nearest facility is 5Km. The most prevalent diseases are malaria, respiratory infections, diarrhea, skin diseases and eye infections. The doctor/patient ratio is 1:16,047. Life expectancy, at 51 years, is below the national average.

The County has experienced difficulties in providing efficient health services for the fast growing population because it needs heavy investments to upgrade, modernize and construct new health facilities. The high prevalence of HIV/AIDS has in recent year's impeded development in the district. The prevalence rate in the County is 14 per cent and despite over 90 per cent awareness, it continues to rise with far reaching effects on productivity and contributing significantly to high incidences of poverty. The greatest impact has been on the widows who are left with the burden of caring for their households, resulting in an increasing number of female-headed households in the district. A large proportion of family resources is used for medication and other forms of care to the infected.

The Four Study Communities in Kitui County

The FES was conducted in four randomly selected districts within Kitui County: these are Kitui Central, Lower Yatta, Mutomo and Mutonguni. Information about these four areas is provided in the next section.

Kitui Central

Kitui Central sub-county has a total population of 131,715. The sub-county is located in the central part of the county and is divided into 5 wards ward, The administrative headquarters is Kitui town. Kitui sub-county 1 district has 21 health facilities, with each health facility having 4 health workers. The county also has 2 polytechnics that provide middle and lower level education.

Lower Yatta

The district comprises both rural and urban communities and has its headquarters at Kyusyanie, which is approximately 50km from Kitui town. Lower Yatta is divided into 2 divisions, Yatta and Kanyangi), 11 locations and 19 sub-locations. With a population of about 50,000 inhabitants and a population density of 6 people per km² the district is sparsely populated. Flooding risk is also extremely high because of the low lying plateaus. Most of the land area is not cultivated and natural vegetation is still intact, thus the landscape is mostly covered with mosaic vegetation/croplands.

Mutomo

Mutomo district is one of the poorest areas in Kenya, with a population of about 180,000. The district is composed of Motha, Mutomo and Ikingawards and the administrative center is Mutomo, which is 80 km from Kitui town. Lack of clean water is one of the area's primary problems and the population depends on seasonal rainfall. There are infrastructure problems that hamper development, but marked improvement has been made in recent years. The combination of poverty, lack of clean water and food and serious infectious diseases cause severe health problems.

Mutonguni

Mutonguni District is composed of 10 divisions comprising Mutonguni, Musengo, Kakea, Kauwi, Katutu, Kwamutonga, Kathivo, Matinyani and Kaumawards. Kabati, the district headquarters is approximately 20 km from Kitui town. Mutonguni District is approximately 359.2 sq km, with a mean population density of 158 persons per km². Poverty is prevalent, and this area is among the poorest in Kenya.

Table 2.2. - General information on Kitui District

General Information (2009)	Kitui	Rank	Kenya
Population	1,012,709	11	821,491
Surface area (km ²)	30,496	6	12,368
Density (people per km ²)	33	37	66
Poverty rate, based on KIHBS (%)	63.5	35	47.2
Share of urban population (%)	13.8	39	29.9

Source: GOK/KNBS (2009).

3. ISIOLO COUNTY

Isiolo County located in the eastern part of Kenya covers an area of 25,605 Square Km and borders Marsabit County to the north, Wajir and Garissa Counties to the east, Tana River and Meru Counties to the south, and Samburu and Laikipia Counties to the west. The county is classified as 100% Arid and Semi Arid Land (ASAL) with less than 1% of the total land area of the county is considered arable. The County has three sub-counties (Isiolo, Merti and Garbatulla), ten wards, 22 locations and 43 sub locations. Isiolo sub-county has five wards that include Wabera, Bulla Pesa, Ngaremara, Burat and Oldo/Nyiro. The County has two constituencies - Isiolo North and Isiolo South and ten wards.

Climate and Agro-ecological zones

Isiolo is hot and dry for most of the year. The average rainfall is 580mm which is erratic and unreliable hence cannot support perennial agricultural crops. The county receives a bimodal rainfall pattern. The short rains, which are most reliable, are experienced in mid-October to December while the long rains are received in mid-March to June. The annual mean rainfall ranges between 450mm to 650mm. High temperatures are recorded in the county throughout the year, with a mean annual temperature of 27°C.

Isiolo County has 3 agro-ecological zones:

- Agro-ecological zone IV covers 5% of the total land area. It supports small-scale crop production and receives rainfall of 400 -650 mm p.a
- Agro-ecological zone V covers 30% of the county and has annual rainfall ranging 300 -350 mm. It can support only a variety of grasses and few shrubs. Livestock keeping is the main activity.
- Agro-ecological Zone VI covers the Merti and Serichowards and forms 65% of the county with annual precipitation of 150 - 250 mm. It is mainly barren with scanty vegetation.

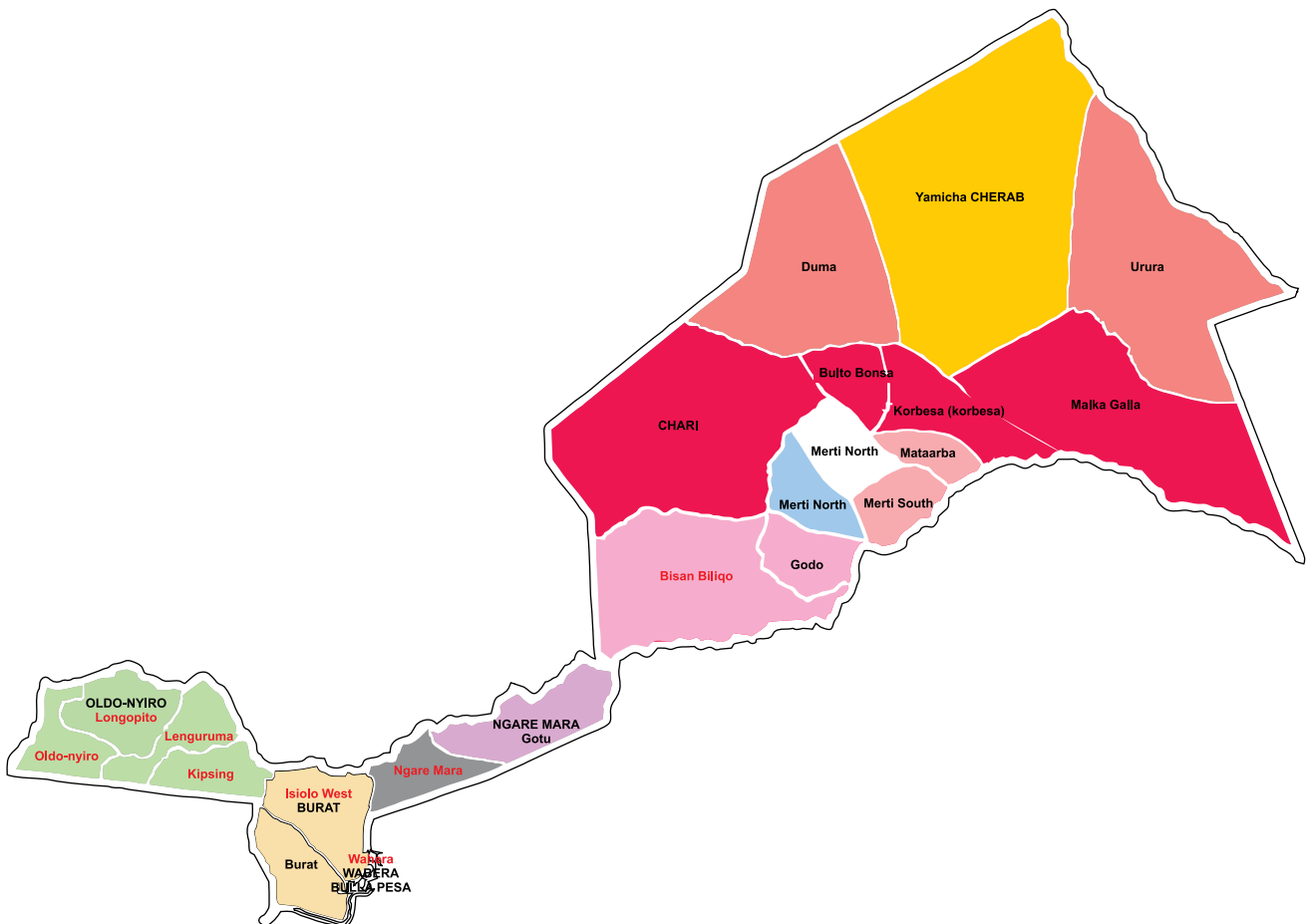


Figure 2.3 : Map of Isiolo County showing livelihood zones

Population, ethnic composition and settlements

The estimated population of the county is 143,294 persons (KNBS 2009). The county is inhabited by the Borana, the Somali, Turkana, the Samburu and the Meru communities. Population density is generally sparse (average density of 4.4 persons per km²) but settlements are concentrated in the Central Ward that houses the county headquarters. Concentrations in other areas are determined by proximity to market centers and watering points and may change depending on the migratory patterns and security situation in the county.

Climate

Water and infrastructure

The main sources of water in Isiolo are; Boreholes, Rivers EwasoNyiro and Kinna and Bisanadi water pans and sand dams. Overall, only 43.5 % and 18 % of households have access to piped water and good quality water sources respectively within a distance of 5 km. Sometimes all the water pans and river EwasoNyiro dry up. The water level in shallow wells and boreholes especially in Merti where most animals are concentrated is low.

Apart from Isiolo town, the roads are generally in poor condition. 97% of the roads are murrum and earth roads that are difficult to navigate in wet seasons. Likewise, efficient communication system is lacking. Energy supply is insufficient and Isiolo town is the only centre in the region connected to the National Grid. Domestic energy needs are met by use of fuel wood (97.1%) but the vegetation is inadequate to supply fuel wood. Isiolo town has limited industrial activities but its strategic central location among the arid counties provides an exceptional opportunity for establishment of livestock based industries, if the available raw materials are properly harnessed.

Economy and natural resources

Livestock and agriculture-based activities contribute over 70% of the household income in the county and employ over 75% of the labour. The main livelihood in the county is pastoralism – keeping cattle, sheep, goats, camel and donkeys. Other significant sources of livelihood include; agro-pastoralism, wage labor and selling of firewood/charcoal. An estimated 1.03 million cattle, sheep, goats and donkeys are kept. Dairy farming is practiced in Central Ward and around Isiolo town and exotic breeds such as Jersey, Guernsey, and Sahiwal are raised. The constraints experienced in this sector are lack of pasture and overgrazing, insecurity and cattle rustling, poor marketing and poor market information provision, and frequent disease epidemics. Crop growing is limited to the wetter areas of Central and Kinna wards. Agricultural productivity is generally low, attributed to unreliable rains, low use of farm inputs, use of inappropriate technologies and varieties, and poor marketing. Wage employment, mainly casual labour offered in the livestock sector, provides the highest share (82%) of household income.

Isiolo County is vulnerable to hazards such as drought, raids and floods along the EwasoNyiro River. The droughts that occur regularly have resulted in loss of range of biodiversity and low vegetation cover. The frequent migration in search of water and pasture has contributed to environmental degradation as several tracks of land are cleared to provide temporary settlements. Another factor exacerbating degradation is the exploitation of the scarce vegetation for charcoal and firewood.

Food security

Food crop production is minimal in the county. The poor state of infrastructure has resulted in soaring and unstable food prices due to poor access and ineffective distribution mechanisms within the market systems. The cyclical droughts experienced in the county have severely hampered efforts to improve the food security situation as a result of poor regeneration of pastures and inadequate recharge of water resources.

The nomadic people in the county primarily rely on their livestock assets for meat, and milk and cash income. The livestock sector contributes between 44 % - 80 % of cash earnings accruing to

households under the agro-pastoral, firewood/charcoal/pastoral and pastoral livelihood zones. Because of inadequate drought management policies and resources, these hazards often result in disasters, causing widespread food crises.

Health Facilities and services

The county has 26 health facilities and majority of the population is living less than 5km from the nearest facility. Several strategies are on-going to facilitate provision of essential health and nutrition services especially to under-five year old children, pregnant and lactating mothers at community level by community health workers who are supervised by Community Health Extension Workers (CHEWs).

Study communities

The study was conducted in communities in Burat and Ngaremara wards in Isiolo sub-county. These areas are occupied by communities who are semi-pastoralists transitioning from pure pastoralism to settled. Isiolo west sub-location located in Burat Ward and Ngaremara sub-location in Ngaremara Ward are in an area categorized as Firewood/Charcoal/Pastoral Livelihood Zone. Therefore the main sources of fuel are firewood and charcoal gravel. Charcoal is purchased while firewood is collected for household uses. The forest covers has however decreased due to continuous felling of trees for firewood and charcoal burning. To control deforestation; community policing volunteers in collaboration with KWS are involved in monitoring tree felling in the area. This initiative is hindered by unwillingness of volunteers to report on close relations. At the same time, charcoal burning is the main source of livelihood in this community and confiscation of charcoal denies families income and access to basic needs.

The main sources of water for the communities in this area are boreholes and seasonal rivers including Isiolo River. Conflict among communities is common during the dry season due to shortage of water for livestock and household use. Most of the land in the area is communally owned. Community members build their houses in clusters and the main type of housing found in the villages is mud walled and grass thatched roofing. Church and school buildings are predominantly the only permanent structures in the area.

The bulk of the households keep sheep, goats, cattle, and a few own camels. They occasionally sell milk and meat products. Although they generally still view themselves as pastoralists, charcoal is the main source of livelihood and some engage in petty trade, such as selling sugar, maize flour, kerosene, snuff, local brews and tobacco.

4. MARSABIT COUNTY

Marsabit County located in the northern part of the country with an approximate area of 78,078 square km is the largest county in Kenya. It borders Wajir to the east, Turkana to the west and Isiolo to the south. It also borders Ethiopia to the north and Lake Turkana to the east. It is about 560 kilometers from Nairobi the capital city of Kenya. Most of the county is an extensive plain which slopes gently towards the southeast. The west and north plains are bordered by hills and mountain ranges. Volcanic cones break these plains while seasonal rivers dominate the county. Administratively, the county is composed of four sub counties namely Laisamis, Saku, North Horr and Moyale (Figure 4).

Climate and Agro-ecological zones

Marsabit is one of the driest counties in Kenya, with temperatures ranging between 10.1° C during the cold months (June and July) and 30.2° C during the hot months (January-March and September-October). Marsabit receives between 200mm and 1000mm of rainfall per year, with the average precipitation being 254mm. This makes it one of Kenya's driest counties. Most of the rainfall (rainy season) is received in April and November.

The county is divided into four ecologically zones namely:

- Agro-ecological zone III: This zone has high rainfall and is suitable for horticultural and food crop production such as maize, beans, fruits and vegetables. It however comprises only 1% of total land area in the county.
- Agro-ecological zone IV that covers 2 % of the total land area and is suitable for settled livestock rearing and some mixed farming with dry land crops such as sorghum.
- Agro-ecological zone V that covers 28 % of the total land area and includes landmasses falling between 700-1000m above sea level. The vegetation here includes acacia tortilla woodland on stony soils and acacia bush land on deeper soils.
- Agro-ecological zone VI that covers 69 % of the total land area and lies 700m above sea level. High rates of evaporation and salt deposits making grass growth stunted. It is only suitable for camels.

Population, ethnic composition and settlements

The population of the county, as per the 2009 census, is 186,367 (Marsabit District – 45, 502, Chalbi - 75, 196 and Laisamis - 65,669). The county is composed of different ethnic groups including the Gabbra, Rendile, Borana, Turkana, Samburu, Burji, El Molo, Dassanach and Waata. Besides these local ethnic groups, Marsabit town is also inhabited by people from communities generally origination from ther rest of Kenya such as Meru, Kikuyu, Luo and Luhya. Pastoralists' manyattas (villages) are generally found around watering points, market centers along major roads and townships. The manyattas are dispersed within approximately 1-15 km radius around small towns. A manyattaconsists of several households usually belonging to the same clan. The size of the manyattas varies depending on the pastoral community from a few households only (as is the case with Gabra), up to 100 households (as can be the case with Rendille). Human settlements are also concentrated around the humid and sub humid hilly areas where agro-pastoral livelihood is practiced. Although the population density varies with area, recurring drought in the past decades is responsible for increased rural to urban influx of de-stocked pastoralist communities.



Figure 2.4: Map of Marsabit County showing livelihood zones

Climate

Water and infrastructure

Due to low rainfall, surface water sources are scanty and ground water forms the major sources for both domestic and livestock use. The major water mass found in the county is Lake Turkana, and seasonal rivers such as Milgis and Merille to the extreme south. Lake Turkana is largely unexploited but has good potential for irrigation, fishing and tourist attraction. Other wards are served by a number of wells, pans, boreholes and springs, most of which are poorly maintained by communities and are seasonal in nature. The water facilities are overstretched and supply is inadequate for domestic and non-domestic use (livestock and small-scale irrigation). Less than 10 % of the households in the county have access to clean and safe drinking water points. However according to the 2008 multiple indicator survey, half of the population in Marsabit is using drinking water from an improved source and 19 per cent reported treating drinking water before use. In terms of sanitation, 28 per cent of the population is using improved sanitation facilities.

Transport and communication networks are not well developed. The majority of the roads are not tarmacked or adequately maintained. Market infrastructure for livestock, livestock products and crops are deficient. Similarly, provision of energy is inadequate to spur development of the informal sector, more so the agro-based industries. Major industrial activities are lacking hence investments in alternative sources such as solar energy must be undertaken if the district is to achieve some level of industrialization.

Economy

About 80% of the county residents are pastoralists deriving their livelihood from livestock and livestock based industries. Around 10 % of the total population practice subsistence agriculture mainly around Mount Marsabit, Mt. Kulal and Hurri Hills, which receive comparatively higher rainfall. About 7% of inhabitants are involved in small scale commerce while the rest are salaried employees mainly working with the government and non-governmental organizations (NGOs). Other economic activities in the county include salt mining, gemstones mining, sand harvesting and fishing. Recently, Marsabit has attracted several international oil drilling companies prospecting for oil deposits in the county following the discovery of oil in the neighboring Turkana County in 2012.

Natural resources management

The greater ecosystem of Marsabit county inclusive of the Chalbi desert, comprise various natural protected areas endowed with immense biological diversity and water which support vital ecosystem services and the existing social and political organizations. At the same time, these conservation practices tend to inhibit some vital functionality of the areas protected such as the socio-cultural values and practices of pastoralists' livelihood. For instance, Marsabit forest, which is now fenced, has been used for generations as a dry season grazing area in order to sustain the pastoral activities. The local communities have to contend with volatile issues of land use changes, land grabbing, multiple stakeholder conflicts, restricted access or/and inaccessibility to resources on which they depend and with tension between different resource users. Consequently, these bio-cultural heritages are prompting questions about the role of communities in the appropriation, conservation, development and enhancing sustainability of their "commons goods" while at the same time sustaining their livelihoods.

Food security

The pastoral communities in Marsabit County mainly depend on livestock for their livelihood including household food security. Typically, sheep and goats are kept in large numbers in the arid and semi-arid environments compared to other species of livestock. These therefore play an important role in pastoral household food security. The chronic food crises in the county is attributed to adverse climatic patterns that affect crop production and livestock rearing activities resulting in most households being food insecure. Improved marketing of sheep and goats would contribute

towards alleviation of food insecurity.

Because of insufficient food production and food supplies from other counties, food supplies from Ethiopia which shares a border with the county constitutes a crucial aspect of food security in the county. Accessibility and availability of food in the markets is fundamental for meeting household food needs. Under the pastoral and agro-pastoral livelihood zones that comprise the majority (68%, 21%) of the district population, livestock sector accounts for a significant proportion (60-83%) of revenues generated by households. Food related expenses make up for between 60%-80% of households' daily expenditure. Low and unstable livestock prices are common. Inadequate cold storage facilities and high cost of transportation of goods and services are major impediments to food security. This coupled with hazards such as high and variable food prices and food shortages leads to grave impacts on food security.

Health Facilities and services

There are several hospitals and health centres in Marsabit county's major urban centres. Notable healthcare facilities in the county include the Marsabit District Hospital, Moyale District Hospital, Laisamis Health Center and AIC Gatab Hospital in Loiyangalani. These facilities are moderately equipped to provide health services that may be required. A large proportion of population (more than 70 %) does not have access to pit latrines with majority disposing human waste in the bush. This is a dangerous practice since most of these bushy areas are around the catchment areas where the community gets water. Under five years mortality rates are 70/1000 in Marsabit. The prevalent diseases in the county are malaria, intestinal worms, diseases of the respiratory tract, and diarrhea.

Marsabit: The study communities

The FES was conducted in two sub-locations within North Horr Sub-county. The two sub-locations are Maikona in Maikona Ward and Bubisa in Turbi Ward. The two sub-locations were chosen to represent pure pastoral communities.

Bubisa Sub-location

Bubisa Sub-location has an estimated population of 4,811 as per the 2009 population census figures. The sub-location is essentially served by Bubisa Township which is a rural urban centre around which most of the populations in this sub-location reside. The township is approximately 50 km north of Marsabit town on the road towards Moyale. The area is served by one dispensary, one health centre and three watering points. Factors affecting the food security situations in this area include, primarily, the physical inaccessibility to food markets

Maikona Sub-location

Maikona sub-location has an estimated population of 6,324 as per the 2009 population census figures. Although Maikona location has two sub-locations (Maikona and Medate Kuro), Maikona sub-location has 87 % of the total population of the location. This population resides around Maikona town. The township is approximately 100 km north of Marsabit town on the road towards North Horr. The area is served by one dispensary and two watering points namely; Maikona shallow wells and Gamura. Inaccessibility to food markets makes food security a key challenge as most food items are brought in from Marsabit town.

5. TURKANA COUNTY

Turkana County in northern Kenya has a geographical coverage of 77,000 km², making it the second largest county in Kenya after Marsabit. It is made up of seventeen administrative wards. Approximately 80 % of the total land area is classified as arid or very arid (Figure 5). Arable land constitute an estimated 32 % of the total area but only 3% (covered by Zones III and IV) of the County is suitable for limited rain fed agriculture.

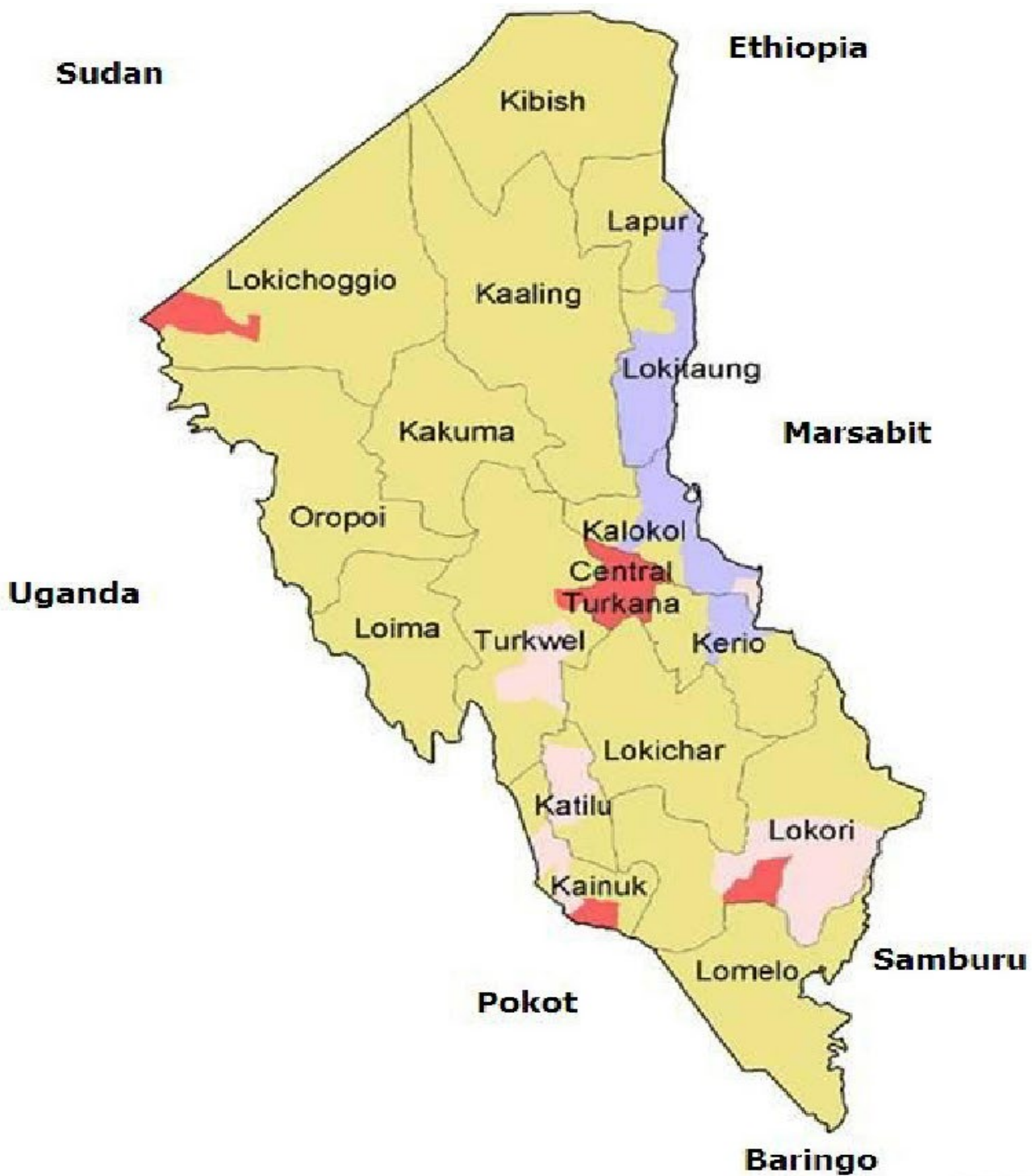


Figure 2.5: Map of Turkana County showing livelihood zones

Population, ethnic composition and settlements

The County's population is estimated at 509,286 persons with mean density of 7 persons per km². The settlement patterns in Turkana are largely dictated by the prevailing weather with migration in search of water and pasture for livestock during the dry seasons. The population growth rate is estimated at 3.3 % annually, and is relatively higher compared to the national average of 2.8 %. This, coupled with the influx of the refugees and the fragile nature of the environment, is worsening environmental degradation and straining the provision of social services such as health and education.

Climate and natural vegetation

Mean annual rainfall ranges between 300-400mm but the rains are erratic. The low lying plains of the County (Central, Kalakata and Lotikipi) receive the lowest amount of rainfall, averaging about 180mm per annum. Because of high salination and surface capping, only 30% of the soils are regarded as moderately fertile and suitable for agriculture and are found in central plains and the lowlands of Turkwel. Vegetation cover is widely varied and ranges from annual grassland to upland forests but most parts of the County have dwarf shrubs, and wooded grasslands. The ecosystem is fragile and soils are not well developed.

Economy

The stronghold of Turkana's economy is livestock production through pastoralism. The sub-sector is a source of livelihood for over 60 % of the inhabitants. Major livestock types kept are cattle, sheep and goats, with the number estimated at 3.5 million. Nonetheless, cattle rustling, frequent disease outbreaks, water scarcity, low productivity and poor marketing have not enabled smooth expansion of the sector. The rest of the population depends on agro-pastoralism (20 %), fishing (12 %), and casual and formal labour in the urban/peri-urban areas (8 %). Crop production is carried out along the Turkwel and Kerio rivers and on the arable land within the flood areas and is both rain fed and irrigated. Main crops cultivated are maize, sorghum, beans and cassava but harvests are very low because of limited access to land in arable areas where average acreage is of 0.5 acres. Fishing in Lake Turkana employs about 58,263 people but is mainly for supplementing households' diets and incomes. The fishing sub-sector is plagued by lack of fishing equipment and lack of adequate storage facilities.

Despite these economic activities, approximately 62 % of individuals in this County are classified as being absolutely poor. Most of the poor are found in the northern and central plains where diseases and droughts are recurrent. Natural calamities such as droughts, insecurity, cattle rustling and high illiteracy (40 %) and unemployment (16.2 %) were ranked by the residents as the main causes of the widespread poverty. Being an arid County, the environment is susceptible to soil erosion and frequent droughts that have severe limitations on the livelihoods in the area, causing loss of livestock and crop failures.

Food security

Turkana County has been a food deficit region and production has shown marked fluctuation due to unpredictable rainfall pattern. In bad years, the County relies on inter County trade with the neighbouring Counties (which also experience food shortages) to meet its food needs. Looking at the households' purchasing power, livestock industry contributes over 90 % of income earned under pastoral zones but also a sizeable 25 % and 15 % under the agro-pastoral and fisheries livelihoods zones respectively. Food crop production (mainly sorghum) also account for a significant proportion (40 % - 54 %) of money earned particularly in the agro-pastoral zones. However, these revenue sources are extremely vulnerable to the fluctuations in the weather patterns and droughts that are frequently occurrences in the County.

Furthermore, the underdeveloped marketing systems for both livestock and agricultural produce have exposed the farmers to exploitation by brokers. Given the low level of non-farm income, the revenues are therefore low and unstable effectively lowering the quantity of food that can be purchased from markets. Adequate food supplies in the interior markets of the County are also affected by poor infrastructure resulting in unaffordable food prices and low accessibility to food.

Health situation

The nutrition status in the County is generally poor, resulting in high levels of malnutrition especially among the refugee population. The situation is worsened by high incidence of diseases (malaria, respiratory and diarrhoea) and insufficient access to health facilities. Outreach of programmes such as immunization are low while cases of HIV/AIDS are also on the rise.

The study communities

The FES was conducted in two sub-locations within Loima Sub-county in two sub-locations - Nadapal and Tiya which are both in Turkwell Ward. The two sub-locations were chosen to represent agro-pastoral areas where ADESO has started or is planning to start program activities in the near future. Brief background information about Loima is provided below.

General Background Information on Loima Sub-county

Loima sub-county where the two communities are situated is situated in the central part of Turkana County. The newly created Loima sub-county is composed of Turkwell and Loimawards. Most of the region consists of low-lying plains, with isolated mountainous and hilly ranges. The isolated mountains are mainly found in the central area with plains around Lodwar. Turkwell River serves the areas as the main water source. Loima has both arid and semi-arid lands (ASAL), with temperatures ranging from a low of 24°C to of 38°C. The lowest rainfall is usually recorded in the central plains with an annual average of 120 mm. Pastoralism is the main subsistence and economic activity in Loima. Fishing is an important activity along the lakeshore. Crop production is practiced by agro-pastoralists mainly in pockets of arable land within flood plains and along riverine areas. Indigenous fruits/foods are important sources of food, particularly during dry spells. Doum palm is widely used for basket and mat making while acacia tortilis is used for firewood and charcoal production.

CHAPTER THREE

Study Methodology

Introduction

This chapter provides information about the methodology of the studies. It begins with some background discussion to place the methodological description into the larger context of focused ethnography. In this chapter, we describe the organization of the study, including the research phases and the tasks in each phase. This is followed by a discussion of the research techniques that were employed. The studies were conducted according to the manual and the protocols of the Focused Ethnographic Study of Infant and Young Child Feeding 6–23 Months: Behaviours, Beliefs, Contexts and Environments. This tool was developed for the Global Alliance for Nutrition (GAIN) by Gretel H. Pelto and Margaret Armar-Klemesu (Reference).

The FES approach

A Focused Ethnographic Study (FES) is a study that is designed to answer a specific set of questions that are required by an agency, by policy-makers, by 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. It draws on what is currently known from published articles and reports about the topic of concern. This is followed by collection of primary data using ethnographic methods to obtain information on conditions and behaviours in the population that are important for various purposes, including: (i) planning interventions that are appropriate for local conditions; (ii) identifying potential bottle-necks that are likely to affect the success of an intervention; (iii) designing and developing communication strategies and content (especially for behavioural change communication (BCC); and/or (iv) deciding whether an proposed intervention is likely to be feasible or effective in a given environment. The purpose of interviews conducted using the FES approach in the five counties was therefore to build a picture of the behaviours, practices and beliefs of importance to complementary feeding from a household.

The FES consists of research protocols for interviewing caregivers of infants and young children. Each protocol is comprised of modules that are designed to obtain information on one or more of the components of the cultural-ecological model on which the FES is based.

“The goal is to describe typical or usual behaviours, conditions and beliefs and their relationships in a population.”

A key methodological strategy of an ethnographic approach is the use of open-ended questions. This approach is essential to avoid biasing or prejudicing the information exchange. For example, if one doesn't know whether food safety is perceived by caregivers as an issue it would be unwise to ask a direct question about their views of food safety, whereas more general questions about "problems related to feeding infants" will bring this out if it is a significant concern. There are many examples of this methodological strategy throughout the modules.

Ethnography uses both qualitative and quantitative data collection techniques. These are designed to provide investigators with the opportunity to learn how people view their situations and behaviours, what is termed "the emic perspective" to contrast it with the external, investigators' "etic" perspective.

The goal is to describe typical or usual behaviours, conditions and beliefs and their relationships in a population. A key feature of the FES approach is the in-depth interviews, which provide a means of examining specific topics and encourages discovery of information that was not included in the questioning framework. To achieve this, it is essential that investigators are highly attuned to the meaning or potential meaning of respondents' statements, and that they follow-up on these through further questioning. This is a critical feature of all ethnography, including focused ethnography. It is essential that investigators do not stick rigidly to the guiding questions, but are always prepared to explore new issues as they arise.

Organization of the Studies

Study design

The studies were designed to assess the knowledge and behavioral environment at the household level for purposes of improving the diets of infants and young children aged 6 to 23 months old in the five counties. Two protocols were employed to explore household behavior. Key informant interviews were conducted in Phase 1 and interviews with Caregiver-Respondents were conducted in Phase 2. In Phase 1, a set of 7 modules was used to interview Key Informants. In Phase 2, another 7 modules were employed in interviews with Caregiver-Respondents. In our studies in the five counties the modules were modified and adapted from the generic FES protocol versions.

The methodological strategy of the FES studies is to collect information about essential aspects of IYC behaviour from caregivers of IYC as efficiently as possible by segmenting data collection into household behaviour. Another aspect of the research strategy is to collect information from as few people as is necessary to obtain an adequate picture. In practice, this meant obtaining much of the data from "key informants" and subsequently expanding data collection to "respondents".

To assemble the picture of household behavior related to IYC, we interviewed key informants and caregiver respondents. Both key informants and caregiver-respondents were selected because they had a child between the ages of 6 and 23 months. Obtaining data from a household perspective was first achieved by interviewing key informants. The results were then used to fine-tune the interview schedule for caregiver-respondents.

The study design required a minimum of 8 caregiver key informants and 30 caregiver-respondents in each study site. Experience with ethnographic interviewing in the domain of infant and young child feeding suggests that "saturation" (the situation in which no new issues arise with further interviewing) is typically obtained with 20-25 interviews. If one sees that new information and new perspectives are still emerging as you approach a sample of 30 you will need to determine why this is happening and add some additional interviews.

Key Informants and Care-giver Respondents

The Key Informant interviews were designed to provide an overview of issues related to IYC feeding and care in the counties. These were applied in interviews with key informants who were mothers of infants and young children aged 6 - 23 months. 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 and food expenditures; types of problems faced by parents of IYC; food and nutrition problems of IYC; and health and food perceptions.

The Caregiver-Respondent modules were applied in interviews with caregiver-respondents.. These modules were designed to provide data and insights about a range of issues related to household behaviours, including demographic and SES characteristics; estimated weekly food expenditure; a 24-hour dietary recall for the index child; food acquisition and preparation; 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 effects of seasonality on IYC and family food management.

We used several different methods to obtain information from participants. The primary method was the open-ended questions with guided discussion. The modules that used open-ended questions with guided discussion were intended to provide sufficient structure to ensure that the interview stayed focused on the issues of interest, while encouraging sufficient discussion to be able to elicit and understand the perspectives of research participants. This was achieved through probing which is an important skill in qualitative interviewing. Probing entails asking follow-on questions to elicit more information about a specific topic when the respondent has stopped speaking. Other methods used included free listing, rating and ranking

Research Phases

1. Preparatory activities

Prior to implementation of these studies, we sought and were granted ethical clearance and permission to conduct the research, including approval of informed consent procedures from appropriate authorities. Research teams were identified, recruited and trained. A reconnaissance mission was carried out to meet and brief relevant government departments and key officers and to facilitate a rapid community census to identify households with infants and young children aged 6 – 23 months in target communities. Briefing meetings were held with government officers (ministries of health, agriculture), county nutrition and public health coordinators, county commissioners and managers of programs implementing nutrition and health related interventions in each county. Local administration represented by sub-chiefs of the respective sub-locations were also briefed.

2. Training study teams and pretesting study protocols

In all counties the field data collection teams comprised of individuals with strong experience in qualitative data collection. In Vihiga and Kitui the data collection team consists of pairs – one individual who conducted the interview and a second who recorded the results. In the REGAL-IR counties, the teams were comprised of an interviewer, a recorder and a translator. In the REGAL-IRproject area, but not in Vihiga and Kitui, electronic tablets with in-built recorders as well as back up digital recorders were utilized for in-putting data in the Open Data software Kit (ODK). A verbatim record of all interviews was made. After transcribing, data was subsequently uploaded onto a web based platform dubbed 'form hub'. This was done by a team of recorders who were trained by the study team in use of the tablets and the ODK software.

The study teams received training on the FES approach and methods of data collection. They were also trained in the procedure of obtaining written informed consent from respondents and general ethics in field data collection. The content of the data collection tools (Protocol 1 and 2) was reviewed and discussed thoroughly, first in English and then in Kiswahili versions of the protocols. Extensive "in house" practice with "role plays" was conducted to familiarize the teams with the methods used in a FES. Training was followed by pretesting each of the protocols in a field setting. This gave the teams opportunity to work together and to consolidate skills of interviewing, recording, compiling outputs from these initial training interviews and, in the REGAL-IR studies, uploading data onto form hub, the web based platform that supports data storage and management. The pretests also accorded us an opportunity to do a 'dry run' to see how well the electronic equipment worked in a

field situation and to identify aspects that we needed to re-emphasize and strengthen during the final training session.

Study teams were also provided with a short manual for quick reference and guidance during the field phase.

3. Recruiting respondents

After confirming a woman's eligibility in relation to the sampling and recruitment criteria (see section on sampling below) all respondents were required to give written consent in line with standard field research ethical requirements. This served to confirm that the study purpose had been explained, and that each respondent had freely consented to participate in the study. Trained research assistants explained to respondents that the interview would involve a lengthy discussion, not just answering a few questions. It is noteworthy that none of the women who were approached refused to participate. At the initial contact respondents were also asked whether they would be willing to have the session recorded. All agreed. After a woman agreed to participate, she was presented with a written consent form which she either signed or appended

4. Conducting the interviews

In the REGAL-IR counties, the team comprised of an interviewer, a recorder and a translator. In Kitui three out of four field researchers were fluent in the local language - Kikamba. In these teams a translator was unnecessary. Bearing in mind that collecting ethnographic data depends on establishing and maintaining rapport; working directly, without the aid of a translator is much better from a methodological perspective. Hence ability of interviewers to speak the local language is valuable, not only in improving rapport but also in supporting a more uniform presentation of questions to all caregivers. In Vihiga, the scenario was the same. Three of the four fieldworkers spoke the local language. However, as all of the caregiver-respondents were fluent in Kiswahili, the decision was made to conduct the interviews in Kiswahili. Consequently, in Vihiga, this decision eliminated the need for using a translator during the interviews.

5. Monitoring and supervision of interviewers

The study team leaders closely monitored the interview process on a daily basis with a view to support and provide feedback to research teams. All aspects of the interview, especially ability to probe appropriately and proper recording of responses were observed. Research team leaders observed interviews and noted issues that required correction or improvement. De-briefing sessions were held daily with the research team. During these sessions, group and individualised feedback was provided. Challenges encountered in the course of data collection were also discussed. This served to enhance quality of information collected. Since only one interview was conducted each day, research teams were required to transcribe and upload around 40% of the content of the interview at the end of the day. Team leaders reviewed this and provided feedback as necessary.

6. Data Analysis

Interviewers were responsible for ensuring accurate recording of all interviews. The recorders and interviewers did the first level of data transcription every day after the interview. As the recordings were in Kiswahili and the notes were mainly in English, the preparation of the transcript involved a combination of translation and transcription. Once the entire data collection process was complete, the interviewers fine tuned the transcriptions with their own inputs and uploaded the filled forms onto form-hub (REGAL-IR project). Data was retrieved from form-hub by the study team in excel format and separated into quantitative and qualitative data and assigned to two teams for analysis. The quantitative data was analyzed using the SPSS software while the narrative data was analyzed using Atlas.ti software. Analysis of the narrative data was based on code books, which were developed to facilitate coding information for each protocol. After coding of data, detailed content analysis was undertaken. Results from the quantitative analysis and narrative analysis were compiled and harmonized by the project principal investigators.

Ethical considerations

Ethical clearance to conduct the study was obtained from Kenyatta university ethics review committee. Authority to carry out the research was also granted by the National Council for Science and Technology of the Republic of Kenya. Written consent was obtained from all study participants by trained research assistants. Thumb prints were 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 discussions upfront.

Sampling

The sampling procedure entailed recruiting respondents to fill caregiver-respondent categories based on pre-defined sub-groups of the 6-23 month age range. In all of the counties, efforts were made to include a range of socio-economic sub-groups categorized as described below within the larger category of poor and disadvantaged families.

In addition to sampling for child age sub-groups and economic status, in the REGAL-IR studies in the Arid and Semi Arid counties wards were purposively sampled to represent different livelihood zones. In Isiolo County, we targeted transitioning and settled communities, in Marsabit pure pastoralists while in Turkana we targeted agro pastoralists.

Community census

In all counties, after the communities were selected, a rapid census was conducted to identify households with children aged 6 – 23 months. These were carried out with the assistance of Community Health Extension Workers (CHEWs) and Community Health Workers (CHWs). Relevant Social Economic Status (SES) data was collected from households with target children using a tool developed by the study team.

Determination of social economic status of households

We used the Living Standard Measure (LSM) to determine social economic status. In the pastoral communities living in the arid and semi arid areas (Isiolo, Turkana and Marsabit counties), the number and type of livestock owned was used to determine the social economic status of households. Once computed, the total livestock units were used to assign the respective social economic status to a household.

Sample selection

Data from the census and SES profile was used to facilitate random pre-determination of key informants and caregiver respondents with infants and young children.

CHAPTER FOUR

RESULTS

Socioeconomic and Demographic Characteristics of Respondents

This section describes the respondents in terms of their demographics, socio economic status and household characteristics. It also explores some of the similarities and differences across the counties.

The caregivers were drawn from different locations in the five counties as follows:

1. Vihiga (32 respondents): Luanda, Emuhaya, Tiriki East and Tiriki West wards
2. Kitui (32 respondents): Kitui central, Lower Yatta, Mutomo and Mutonguni districts
3. Marsabit (36 respondents): Maikona and Bubisa sub locations
4. Isiolo (48 respondents): Ngaremara and Isiolo West sub locations
5. Turkana (48 respondents): Nadapal and Tiya sub locations

Demographic characteristics

Over 80% of caregiver-respondents in the 5 counties were between 20- 39 years of age. The mean age ranged between 28 years (Turkana) and 30 years (Marsabit). Across all communities, the age group with the largest proportion of caregivers was 20- 29 years, and Turkana had the highest number of caregivers below 20 years. The age of the caregivers ranged from 18 years (Vihiga, Isiolo and Turkana) to 56 years (Vihiga). The upper limit being an age beyond what is considered reproductive age is reflective of a number of households in which the primary caregiver is the grandmother, not the biological mother of the index child.

All caregivers in Kitui had attained school and nearly all of them in Vihiga had received formal education. A very different situation exists in the REGAL-IR counties where the highest percentage of respondents in each county did not have any formal education. While 9.4% of the caregivers in Kitui and Vihiga had acquired tertiary education, none of the caregivers in the REGAL-IR counties had advanced beyond secondary education. The disparity in level of education in the different counties may perhaps be a reflection of the importance each of the communities placed on educating children, at least in the recent past.

“ One measure of wealth, especially in the REGAL-IR counties, is ownership of livestock. Ownership of domestic animals is an indicator of level of affluence.”

In Isiolo and Kitui, the majority (77% and 72% respectively) of the respondents were married, while the rest were living in a household where there was no adult male who was identified by the respondent as a spouse. In Turkana, a fairly higher proportion of respondents (91.7%) were married. The county with the lowest proportion of married caregivers was Vihiga, where two thirds of the respondents reported being married. As we did not ask about “marital status” directly, the designation of caregivers as “married” is based solely on the respondents’ reports that an adult male in the household was her husband.

Household composition

In all counties, the majority of households had five or more members. It is interesting to note that in one large household of 18 members, the caregiver had 11 children, four of whom were less than 6 years of age. Another caregiver, in a different community also had 11 children. Across all communities only four caregivers in our samples had more than seven children and the majority of households (75%) had only one and two children under the age of six years. In addition, majority of the respondents in all the counties had 2 to 5 children.

Socio economic characteristics of the caregivers

The majority of the caregivers in Vihiga, Kitui and Marsabit describe themselves as “housewives.” In contrast, it is interesting to note that in Isiolo and Turkana, none of the caregivers considered themselves housewives. In these two counties, more than four in five of the respondents (81.3% Isiolo and 95% Turkana) reported earning a living from conducting some form of business. The “hours worked” excludes time spent performing housework. It is however imperative to take into consideration that while domestic chores such as fetching water and collecting housework were not accounted for, these are arduous chores that are often time consuming. Consequently, they affect the amount of time that caregivers have for childcare, particularly in households in which the primary caregiver who has to carry out these duties.

In Kitui, women farmers worked the longest hours (29 hours per week). However, only one of the three respondents who self-identified as a farmer reported generating income from this occupation, indicating that the others practiced subsistence farming. Also interesting to note is that both businesswomen and casual labourers spent relatively the same amount of time at work (19 hours and 20.5 hours respectively). However, those in business earned 2.7 times more income than their casual labourer counterparts. In Marsabit, caregivers who worked as casual labourers were the highest income earners. In Isiolo, women who engaged in charcoal burning were the highest income earners, while in Turkana; caregivers in formal employment had the highest earnings. The majority of women who do business in Isiolo are involved in burning and selling charcoal with some making beaded crafts such as necklaces and earrings and some running small shops referred to as kiosks. Overall, all caregivers involved in business, formal employment and casual labour (except Marsabit) spent more than 20 hours per week at work.

A primary purpose for asking about hours of work per week was to find out about caregivers’ childcare arrangements. Family structure has implications for access to alternate childcare. Women who are living in an extended family with older generation adult women often have options that women in nuclear families do not. For instance, our analysis confirms that in Kitui, caregivers’ mothers (9) and mothers-in-law (7) are playing a significant role in the provision of alternate childcare, especially in extended families. Significantly, children also played an important role as alternate care providers. Most of the married respondents (11 out of 17) living in nuclear family arrangements had alternate care being provided by their older sibling, the youngest being 5 years and the oldest, 13 years. This type of alternate childcare arrangement affects the quality of care. In Vihiga, eight mothers-in-law were providing alternate care, and 5 of these were in situations where their grandchildren were living in a nuclear family. In this county, caregiver-respondents often described the confidence they feel in leaving their IYC with an older, female relative as shown by the following discourse between an interviewer and Nora, a married mother of 3 living with her husband and his family:

- Interviewer: *“I would like to know from you how you organize childcare for the child when you are away for work?”*
- Respondent: *“I leave my child with my mother-in-law to take care of her when I am away.”*
- Interviewer: *“Why your mother-in-law?”*
- Respondent: *“She takes good care of her. She gives my baby the warmth almost equivalent to what I would give. I can never leave my baby with a neighbour.”*

Sophia, another married mother of 3 living in a nuclear family said:

“I study information science and technology (diploma) on part-time basis. I have to attend classes in the afternoon for 3 days of the week in Mbale town. When I leave for my classes the baby stays with my mother-in-law. I prepare meals for the baby before leaving then I leave them with my mother-in-law to feed the baby.”

Dora, another mother of 3 living in a nuclear family and working 35 hours a week away from home said of her mother-in-law:

“My child eats almost everything from my mother-in-law’s house. _____(child) can eat ugali or any food from her but she is very choosy when it comes to eating what I give her. I do not really understand what the difference in my cooking and that of my mother-in-law could be; is it because she has been a mother longer than I have been or is that she teats the child better than I do. Anyway, I respect her for who she is.”

There are exceptions to this remarkable level of support and these statements contrast markedly with those of women for whom lack of an appropriate, alternative caregiver is a source of distress and anxiety (This is discussed further in subsequent chapters).

Socio economic profiles of the households

The socioeconomic characteristics of the households give a picture of the poverty that plagues all five counties. Turkana County had the worst depiction of poverty, with an alarming 85% of the households having an income less than Ksh 4,000 (\$39) per month. Interestingly, one household in Turkana had the highest income across all counties, with the income falling between Ksh 50, 000 and Ksh 100, 000. Similarly, over half (59.4%) of the households in Vihiga earned less than Ksh 4,000. Households in Kitui, Marsabit and Isiolo had slightly higher earnings, with 62.5%, 39% and 50% of the households respectively earning less than Ksh 6, 000 (\$59) per month. Income sources included agricultural farm produce, business, formal employment, casual labour, donations and livestock. Most households in Marsabit derive their income from sale of livestock. Livestock sales are also W a major contributor to income in Isiolo and Turkana, and business was mentioned by almost all (94% and 98% respectively) caregivers in these counties.

All households in Kitui, and all but two in Vihiga (97%), own land. In spite of this, less than half of the households in Vihiga (44%) and a mere 6% in Kitui derive income from agricultural produce. Land subdivision especially in Vihiga, where seven in ten households own less than one acre, greatly hampers the economic viability of land ownership. Consequently, most produce is used for household consumption but it does not meet household needs throughout the year.

In the REGAL-IR counties, the situation is different. Here caregivers report access land rather than land ownership. Access in this context means land is available for use but isn’t necessarily owned by the household. Only a third 11 (30 %) of households in Marsabit have access to land. None of the caregivers reported that they depend on agricultural produce for income at household level, and agriculture is mainly practiced for subsistence. This situation is also reflected in Isiolo and Turkana where 4% and 18% respectively earn a living from farming. This is the case in spite of the fact that considerably more households in Isiolo (81%) and Turkana (69%) have access to land.

One measure of wealth, especially in the REGAL-IR counties, is ownership of livestock. Ownership of domestic animals is an indicator of level of affluence. More than three in four households in each of these counties own goats. Sheep are also owned by majority of the households in these counties. Free range chicken are owned by almost half (48%) of the households, whereas chickens are owned by 91% and 88% of households in Vihiga and Kitui respectively. In Vihiga, only 3.1% of the households own goats. These differences reflect the cultural importance placed on different small animals in the different societies.

Lifestyle consequences of poverty are reflected in lack of access to amenities often enjoyed by better-off populations. The predominant use of kerosene tin lamps as the main source of lighting in Vihiga, Kitui and Isiolo is illustrative. In Turkana, most households use palm leaves for lighting. In the entire study, only 4 households in Vihiga had electricity in their households. This is in spite of widespread ownership of mobile phones. More than four in five households in Vihiga, Kitui and Marsabit own phones. Caregivers were not asked where they charge their mobile phones, but this is probably accomplished either at trade centres or using solar power, which is available in a minority of households in Kitui (19%) and Marsabit (11%). Gas was used as a fuel source for cooking in only one household in the entire study. Firewood is the predominant fuel source (Table 4.1). Very few households (4% or less) in each of the counties use charcoal, except in Isiolo (33%), where charcoal burning is a source of income as well as for cooking fuel at home.

Table 4.1 - Material Conditions and Access

Number of respondents						
Amenities	Turkana N=48	Isiolo N=48	Marsabit N=36	Kitui N=32	Vihiga N=32	
Source of fuel						
Firewood		46	32	34	31	30
Charcoal		2	16	2	1	1
Source of lighting						
Firewood		2	45	7	8	12
Kerosene tin lamp		11	1	4	18	16
Palm leaves		25	2	25	6	4
Torch		9				

Access to portable water is a key concern in IYCF. While half the households in Vihiga have access to potable water, a similar proportion obtains water from rivers (Table 4.2). A similar situation is seen in Isiolo where two in five households fetch water from laggas and rivers. Potable water is obtained from communal wells, pumps/ boreholes and taps, none of which was, at the time of the study, piped to the homes. Interestingly, the highest proportions of households with access to potable water were in Turkana (96%) and Marsabit (94%). This was followed by Isiolo and Vihiga counties (56% and 47% respectively). The county with the least access to potable water was Kitui, where only 19% of households reported access to communal wells and taps.

Comparing ownership of material possessions across counties, bicycles were owned by a greater percentage of households than motorcycles in every community. The proportion of households in the samples who own bicycles is less than half of the respondents in each community. TV ownership was highest in Vihiga (25%), followed by Kitui (15.6%), Isiolo (6.2%), and Marsabit (5.6%). None of the households in Turkana owned a TV. Radio ownership was higher than TV in all communities. Household furniture in Vihiga and Kitui included sofa sets, while those in the REGAL-IR counties included modern stools and tables. Own mobile phones, with lower proportions in Isiolo (72.9%) and Turkana (43.8%).

Table 4.2 - Sources of Water

Kitui		Respondents =32
River		7
Traditional Shallow well		14
Communal well and pump		2
Communal tap		4
Rock catchment and dam		5
Vihiga		Respondents =32
River		16
Communal well		2
Communal pump		1
Communal tap		13
Marsabit		Respondents =36
Communal pump/borehole		25
Communal well		9
River		1
Turkana		Respondents =48
Communal pump/borehole		17
Communal tap		29
River		2
Isiolo		Respondents =48
Communal pump/borehole		21
Communal tap		2
Communal well		4
Laga		16
River		3

Recapping key socioeconomic and demographic characteristics of the samples:

1. The proportion of married caregivers was lowest in Vihiga (66%) and highest in Turkana (91.7%). In all counties the majority of the households had five or more members.
2. The majority of the caregivers in Vihiga, Kitui and Marsabit identified themselves as housewives, unlike in Isiolo and Turkana, where there were none. Income sources included agricultural farm produce, business, formal employment, casual labour, donations and livestock. Most households in Marsabit derive their income from sale of livestock, and this is also the case in Isiolo and Turkana. "Business" was mentioned by almost all (94% and 98% respectively) caregivers in these counties.
3. Although the majority of households have access to/ ownership of land, very few households depend on agricultural produce for income, reinforcing the known issues of low levels of productivity on the land. Livestock owned by households included, to varying degrees, cattle, sheep, goats and chicken.
4. The predominant source of fuel in all counties is firewood, while kerosene tin lamps are the most frequently used lighting source in all counties except Marsabit.
5. The majority of the households earn less than Ksh 6, 000 a month, the worst being Turkana where 85% of the households earn less than Ksh 4,000 monthly.

The foregoing summary reveals humble living conditions, which reflect the poverty that affects caregivers and their families. In subsequent chapters we shall see how this low economic status affects IYCF decisions and practices.

CHAPTER

FIVE

What are Infants and Young Children Eating?

Introduction

In the five county studies our descriptive, ethnographic knowledge about what infants and young children are eating comes from two sources: key informants and caregiver respondents. Key informants were interviewed in Phase I of the FES studies and caregiver-respondents in Phase II. The data were obtained primarily from two modules in the FES manual: i) Data on what key informants think children in their culture are fed (the emic, normative view; and i) Data on what children were actually fed on a “usual day,” which comes from caregiver respondents. The former provides an “emic” answer to the “what” question because it describes cultural expectations about IYC feeding. The latter can be called the “behavioral” answer to the “what” question because it reflects actual feeding behaviors.

With respect to the behavioral dietary data that were collected in our ethnographic studies, it is important to note that they should not be subjected to a nutritional assessment and cannot be used to infer nutrient intake. In the larger FTF project, quantitative assessments were possible because the Opti-food project used larger samples and an analytic method that permits nutrient assessment. The reports from the Opti-food studies provided a basis for assessing IYC diets from the perspective of nutrient intake and nutrient adequacy.

Theoretical Perspective

In this chapter we draw on the concept of “core foods” for both the analysis of data and the interpretation of the results. This concept is well established, particularly in nutrition and in anthropology. In nutrition it has been used to describe various food and nutrition characteristics in populations. These uses include descriptions of food systems, monitoring food system changes over time, analyses to inform policy and program systems, analyses for evaluation of programmes, and as an aid to nutrition education planning. In anthropology, it has been a component of anthropological theory for many decades. It has also been used in applied anthropological research. These uses have included studies directed at informing policy, in planning and in nutrition education activities. For example, in the United States, the Committee on Food Habits, which was chaired by Margaret Mead, and commissioned to provide guidance to the federal government during the Second World War, drew heavily on the concept of “core foods.”

“I would like to know about the kinds of foods that families normally give to their babies when they are about 6 -8 months old and are starting to eat something in addition to breast milk.”

In nutrition the concepts of “core” and “secondary core,” with reference to food, are essentially etic in nature. In other words, the identification of the content of the core and secondary core foods of populations is derived from analysis of quantitative dietary data and/or food supply data. Analytic methods for carrying out these analyses have been developed and tested. However, for the interpretation of the results, particularly the social-psychological significance, the meaning of these “core foods” for the population is imputed rather than directly measured.

In anthropology, the description of “culture core,” with reference to foods, is generally derived through ethnographic interviewing and observation. It does not usually rely on dietary consumption data, except as this is observed in the course of fieldwork. Similar to the approach in nutrition, the social-psychological meaning of core foods is often imputed rather than directly explored. However, occasionally, as in the present study, anthropological investigations may involve systematic elicitation, using cognitive mapping techniques to derive the emic picture (including social-psychological meaning).

The concept of “core foods,” with all of its various meanings, operational definitions, and applications is generally applied at one of the following levels: i) the level of an entire society or ethnic group; ii) the level of an epidemiologically- defined sub-group (e.g. people with diabetes); or, when the goal is behavior change, iii) at the level of individual adults (that is, where the aim is dietary change that involves modifying the individual’s “core foods” in order to shift his or her consumption to a healthier diet.) To date, there has been little exploration of its utility with respect to infants and young children. Moreover, in research on IYC feeding, the relationship of IYC foods to family food, including relationships to “core foods,” has generally not been systematically or adequately explicated in either theoretical or empirical work. It is not typically a subject of investigation in connection with complementary feeding. However, it is often “lurking in the wings” as an issue. The basic concern is: to what extent, in any given society, is there cultural recognition of the concept of “special foods for IYC”? (“Weaning foods” in past nutritional discourse)

Cultural recognition of the concept of “special foods for infants” may facilitate IYC interventions to change feeding practices. The rationale for this supposition is that when the concept is well instituted in a social group, caregivers will be more accepting of an intervention that is specifically designed to improve IYC nutrition because one doesn’t first need to persuade them that special foods are necessary or important.

Method for obtaining the emic IYC cultural core from key informants

To obtain data to construct the IYC cultural core from an emic perspective, we interviewed caregiver key informants to derive an inventory of the foods that people think are given to IYC. We wanted to know what foods have the highest salience for caregivers as foods for children aged 6 through 23 months. To derive the inventory we used an ethnographic technique known as “free listing” .We opened the free listing exercise with a general question to the respondents, which was modified for specific age groups within the range from 6-23 months. For informants who were caring for infants 6 to 8 months of age, the question was: “I would like to know about the kinds of foods that families normally give to their babies when they are about 6 -8 months old and are starting to eat something in addition to breast milk. As you think about that you could start by listing the foods you feed to your own baby”. Follow-up questions probed for foods the respondent did not personally give but that other caregivers of children the same age might give.

After asking about the youngest age sub-group, subsequent questions asked progressively about other age sub-groups (9-11 months; 12-17 months and 18-23 months. Each key informant was asked first about the age group of her own child and then about other age sub-groups.

Method for obtaining the IYC behavioral core from caregiver respondents

To obtain the behavioral data on what IYC were being fed, we interviewed the samples of caregiver respondents with a module in which they were asked to describe everything that had been fed to their child in the previous day. Caregivers were asked to report each “feeding event” separately and sequentially. To qualify as “a feeding event” at least one hour between giving food (except breastmilk)

was required. This was a qualitative dietary recall because our intention was to obtain a picture of typical or usual child dietary patterns. Therefore we also asked whether the previous day had been a “usual day.”

In the next section the results are examined from three perspectives: the IYC cultural core, the IYC behavioral core and IYC diet in relation to household diet. Table 5.1 contains the definitions for common foods mentioned by key informants and caregiver respondents.

Table 5.1. - Definition/Description of common foods

Food	Definition/Description
Animal Milk	Milk from cows, camel and/or goats, typically fresh but also powdered. Source varies between counties
Tea/Milk Tea	Always includes some tea leaves, but content varies from tea prepared only with water to milk flavored with boiled tea leaves, often includes sugar, regardless of amount of milk
Porridge	Includes single and multi-grain, branded infant cereals, locally-milled, purchased flours, “uji” (Traditional porridge made from unrefined maize flour)
Ugali	A stiff maize porridge made by mixing maize meal (maize flour) with boiling water
Rice	Refined white rice, boiled and eaten plain or with potatoes
Irish Potato	Usually boiled in salted water or fried and mashed for younger IYC; or cooked with tomatoes and onions; often cooked together with green bananas; also eaten with boiled rice often mashed with green bananas.
Green Banana	Prepared in same forms as Irish potato

I. Results on the “IYC cultural core”

With respect to IYC cultural core, we had two goals in the analysis of the results from the key informants on what infants and young children are fed: 1) to determine whether the concept of an IYC cultural core exists in the counties and 2) if it did, to determine its content.

i). Is there evidence of an explicit concept of an IYC cultural core in the five counties?

Our interpretation of the key informant results, together with the results from the caregiver respondent interviews, is that the concept of an “IYC cultural core” is present in all five societies. The first piece of evidence is that all of the key informants (a total of 52) readily answered the request to name the foods that are given to infants and young children. Not a single woman began by saying that IYC eat what everyone else eats and then continued by listing usual household foods. Secondly, they often began the listing by saying “porridge,” which is not a family food (see section below on IYC and family foods). Thirdly, in the narratives, the key informants often went on to describe preparations of IYC foods in which it was clear that they were describing procedures that they viewed as uniquely relevant to the foods they had just listed. This latter feature was reinforced in the caregiver-respondent interviews in which we explicitly asked about food preparation. Moreover, throughout the interviews, and especially in connection with food insecurity, mothers described their inability to give their IYC’s foods that they prepared specially for them. Based on the results we conclude that there is an IYC cultural core, independent of the core foods in household diets.

ii). The content of the IYC cultural core in the five counties

What are the foods that comprise the IYC cultural core? Are they similar in all of the five counties? Is there agreement, within a county, about what foods are given to infants and young children? To answer these questions, we analyzed the results of the free listing exercise, the answers to the question described above.

Various approaches have been used to analyze the corpus of free listing responses collected from a sample of key informants. A primary purpose of these analytic approaches is to describe cultural

consensus – the amount of agreement among the respondents about what items constitute the “domain” of concern.) We choose to use a simple tabulation procedure, in which we established a cut-off and in the table below we have only included foods that were named by 4 or more key informants in each site. In Kitui and Vihiga, 4 respondents constitute 50% of the sample. In the others, they represent 1/3 of the sample. Note that the individual areas in Isiolo are treated as separate societies for this analysis. Table 5.2 shows the results of the analysis using this approach.

Table 5.2 - IYC cultural core from key informants(Foods listed by 4 or more individuals)

Food	Location by County				
	VIHIGA	KITUI	MARSABIT	TURKANA	ISIOLO
Porridge	X	X	X	X	X
Milk	X	X	X	X	X
Irish Potatoes*	X	X	X	X	X
Rice	X	X	X	X	X
Ugali	X	X	X	X	X
Green bananas	X	X	–	–	X
Tea	X	–	X	X	X
Eggs	–	X	–	–	X
Anjera	–	–	–	X	X
Avocado	–	X	–	–	X
Beans	X	X	–	–	–
Pasta	–	–	X	–	–
Sweet potatoes	X	–	–	–	–
Green grams	X	–	–	–	–
Cassava	X	–	–	–	–
Bananas	–	–	–	–	X
Tomato	–	X	–	–	–
Pawpaw	–	X	–	–	–
Orange	–	X	–	–	–
Cabbage	–	–	X	–	–
Meat	–	–	–	–	X
Fruit	–	–	–	–	X

There are 5 foods that appear to be culturally core foods in all of the sites: porridge, milk, potatoes, rice and ugali. Green bananas are not included in the high consensus list in two societies and tea is absent in three. Reading vertically down a column, we see that the number of foods for which there was cultural consensus differs from one site to another. The largest number of foods occur in Kitui and Kamba Garba, with nearly as many in Vihiga. In the table, we also see that some foods – eggs, anjera, avocado and beans – are core foods in two sites, but not the rest, while a number of foods reached core status in only one site.

II. Results on the “IYC behavioral core”

All of the caregiver- respondents in the 5 sites were asked what foods their child had eaten in the day preceding the interview. Table 5.3 illustrates the picture of intake that emerges when the results are examined for a single site. In this table we show the compilation of results for one of the sites - Marsabit. Intake is reported by child age (in months), breastfeeding status, and feeding event. An

event was defined emically by asking what the child was fed on waking, and continuing through the day until he/she went to sleep.

Table 5.3 - Marsabit: reported IYC food intake on day prior to the interview

Marsabit County: 24 Hour Food Recall List						
Age in months	BF	Feed1	Feed 2	Feed 3	Feed 4	Feed 5
8	Yes	Tea: (Tea leaves, sugar , milk)	Camel milk	Mashed potatoes: (Potatoes, lard, salt)		
8	Yes	Tea (Tea leaves, Milk powder, Sugar)	Tea: (Sugar, tealeaves, goat milk)	Rice and potatoes: (Rice, Potatoes, Tomatoes, cooking fat and onions)	Tea: (Sugar, tea leaves, goat milk)	Tea: (Sugar, tea leaves, goat milk)
8	Yes	Tea: (Tealeaves, sugar, milk,)	Porridge: (Branded infant porridge, sugar, oil, margarine, goat milk)	Milk	Meat stew: (Irish potatoes with cabbage, meat and sheep)	Anjera (Wheat flour, Yeast, sheep fat, sugar, salt)
9	Yes	Camel milk	Camel milk	Camel milk	Mashed potatoes: (Irish potatoes, onions, cooking fat (Kimbo), salt)	Camel milk
9	Yes	Mashed potatoes: (oil, salt)	Camel milk)	Mashed potatoes: (Irish potatoes, salt and salad oil)	Camel milk	Mashed potatoes: (Irish potato salt)
9	Yes	Tea: (Tealeaves, sugar, milk)	Camel milk	Tea: (Sugar, tealeaves, goat milk)	Camel Milk	Mashed potatoes: (, cooking fat (Kimbo), salt and camel milk)
9	Yes	Tea: (Camel milk, sugar , tealeaves)	Camel milk:	Mashed potatoes and camel milk: (salt, cooking fat)	Camel milk	
9	Yes	Tea: (goat Milk, Tealeaves, Sugar)	Rice with potatoes: (Royco, fat salt)	Tea: (goat Milk, Tealeaves, Sugar,)	Tea: (goat Milk, Tealeaves, Sugar,	Tea: (goat Milk, Tealeaves, Sugar)
10	Yes	Tea (powder milk) and Anjera	Potatoes: (potatoes, lard fat and salt)	Rice and Potatoes: (Potatoes , tomatoes, onions and cooking oil)	Tea: (boiled goat's milk tealeaves, asugar)	

10	Yes	Tea: (powder Milk, Tealeaves, Sugar)	Camel milk	Camel milk: (Boiled and fresh)	Tea: (powder Milk, Tealeaves, Sugar)	Rice with potatoes and cabbage: (goats fat, tomato paste, onion, and salt)
10	Yes	Camel Milk with boiled tea leaves, sugar	Rice: (Boiled rice in fat, royco)	Ugali with kunde: (Maizemeal flour (Dola), cowpeas, onion, fat, salt, tomato	Rice: (Rice, cooking fat, salt and royco)	
11	Yes	Tea: (packet milk (gold crown milk), tealeaves, and sugar)	Tea: (packet milk, sugar, and tealeaves))	Mashed potatoes: (Irish potatoes, salt, and cooking oil (salad))	Tea: (Milk (gold crown), tealeaves, and sugar)	Tea: (packet milk, sugar & tealeaves))
11	Yes	Camel milk:	Tea: (camel milk, tealeaves and sugar	Rice with potatoes: (cooking fat, salt)	Camel milk	Camel milk
11	Yes	Tea: (Milk mixed with tea leave, and sugar)	Goat milk (boiled with water)	Milk: (packet milk (200ml gold crown milk))	Fried rice: (Rice, cabbage, irish potatoes, royco, salt and cooking oil)	Boiled goat milk: (goat milk with water)
11	Yes	Tea (milk, sugar) Anjera	Mashed Potatoes: (Irish potatoes, Kimbo cooking fat, & salt)	Porridge: (Sorghum flour, cooking oil and salt)	Mashed Potatoes: (Irish potatoes, Kimbo cooking fat, & salt)	Camel milk
11	Yes	Tea: (Camels milk, tealeaves and sugar)	Camel milk	Potatoes: (Mashed, salt and milk)		
12	Yes	Porridge: (Uji mix flour, Cooking fat (kasuku) and sugar)	Anjera, goat milk	Porridge: (Uji mix flour, Oil, Salt)	Tea: (goat milk, sugar, and tea leaves)	Tea: (goat milk, , sugar, and tea leaves)
13	Yes	Tea: (Milk, tealeaves, sugar	Goat Milk:	Goat Milk:	Goat Milk	
13	Yes	Camel milk	Goat milk	Goat milk)	goat milk	goat milk
14	Yes	Tea: (Tealeaves, goat milk, and sugar)	Camel milk	Rice mixed with beans: (Rice, beans, salt, Kimbo, water cooking fat)	Camel milk:	Tea: (Tealeaves, sugar, milk)

14	Yes	Tea: (goat milk, tealeaves ,sugar	Rice mixed with beans: (Royco, rice, salt, beans fat))	Camel milk:	Tea: (Camel milk, tealeaves, sugar,	Camel milk
16	Yes	Tea: (goat Milk, sugar, tealeaves)	Goat milk Milk:	Boiled Rice: (salt, Kimbo)	Tea: (Goat milk, tealeaves, & sugar)	Pasta(Spaghetti) mixed with beans: (onions, royco, salt ,Kimbo)
16	Yes	Camel milk	Rice with beans: (onions, cabbage, Irish potatoes and salad oil)	Anjera:	Beans, potato, cabbage stew (onions, salad oil, salt)	Camel Milk
17	No	Goat Milk:	Milk: (Fresh packet milk)	Tea: (Powder milk, tealeaves and sugar)	Ugali: (Water, maize flour (Jogoo))	Milk: (Packet milk)
17	Yes	Tea: (goat's milk, tealeaves, sugar)	Tea: (goat milk, sugar, tealeaves)	Goat milk	Tea: (Tealeaves, goat milk, sugar)	Porridge: (Maizemeal porridge (Jogoo brand), sugar, salt, goat milk and cooking fat (Kimbo))
18	Yes	Tea: (Milk, tealeaves and sugar)	Mashed potatoes and Githeri[1]	Spaghetti (Onions, tomatoes, beans, potatoes, pasta, cooking fat	Tea: (goat milk, tealeaves and sugar)	Mashed potatoes: (Githeri beans (maize & beans), and potatoes, salt and oil)
19	Yes	Tea: (milk, tealeaves ,sugar)	Breast milk:	Mashed beans: (salt and cooking oil)	Tea: (goat's milk, tealeaves, sugar)	
19	Yes	Tea: (Tea leaves, milk, & sugar)	Milk: (Boiled goat milk)	Tea: (goat's milk, tealeaves, sugar)		
19	Yes	Tea: (camels milk, tealeaves and sugar)	White Bread:	Ugali: (Jogoo flour, salt, oil and water)	Goat stew (onions, salt, oil , and potatoes)	
20	Yes	Tea	Anjera:	Ugali and kunde:(Sorghum Flour, salt, fat and onions)	Ugali: (Jogoo maize flour, salad oil, salt)	Goat Meat stew (cabbage, salad oil, salt, onion, Irish potatoes)
20	Yes	Tea: (powder Milk, Tealeaves, , Sugar)	Tea: (packet crown milk, tealeaves, sugar)	Sorghum and Beans: (Boiled sorghum and beans, salt, oil)	Mashed potatoes: (Mashed potatoes boiled salt and Kimbo)	Milk: (Packed cow's milk (crown milk))

20	Yes	Tea (camels milk, tealeaves and sugar)	Porridge: (Maizemeal milk, salt, sugar and fat)	Rice and potatoes (tomatoes, onion, oil and salt)	Goat's milk	Tea: (Goat's milk tea tealeaves, sugar)
20	Yes	Tea: (camels milk, tealeaves and sugar)	Porridge: (Boiled Maizemeal porridge with milk, salt, sugar and fat)	Rice mixed with potatoes: (tomatoes, onion, oil and salt)	Goat milk	Tea: (tealeaves, goat milk and sugar)
21	Yes	Tea: (Camel milk, sugar, tealeaves)	Anjera	Rice mixed with beans: (onions. Oil)	Camel milk	
22	Yes	Anjera	Tea: (Tealeaves, sugar, and goat's milk)	Boiled goat milk (boiled with water)	Ugali: (Maize flour (Jogoo) and goat's fat)	Potatoes with cabbage stew: (Cabbage, Irish potatoes, tomatoes paste, water, salt, onion and goat's fat)
22	Yes	Cow's milk	Ugali with milk: (Jogoo Maizemeal flour, salt, cooking fat) & Goat milk)	Cow's milk:	Tea: (Goat milk, sugar and tealeaves)	Tea: (Goat milk, sugar and tealeaves)
23	Yes	Rice with ndengu (green grams): (potatoes, onion, tomato, salt, cooking oil)	Ugali: (salt, cooking fat and maize flour)	Potatoes and green bananas: (tomatoes, onion, fat and salt)	Ugali and milk	
24	Yes	Tea: (Camels milk, tealeaves and sugar)	camel milk with boiled tealeaves, and sugar)			

Using the data from the 5 sites, we compiled a broad comparative description across the sites. Table 5.4 shows the results of the analysis of the one day diet recalls for the IYC in the samples. The data for the full age range from 6 through 23 months are combined in order to yield a general picture of the foods that comprise the “behavioral core” during the period of complementary feeding.

Table 5.4 - The IYC behavioral core in the five counties (Abstracted from the dietary records)

	No. of households consuming food in past 7 days			
	≥ 5 days	3-4 days	1-2 days	0 days*
Tea with milk and sugar	24	1	-	-
Tea with sugar	3	1	-	-
Maize porridge	3	4	1	-
Wimbi porridge	1	-	1	-
Mandazi	4	4	3	-
Bread	-	4	2	-
Ugali	20	1	4	-
Githeri	1	-	14	1
Rice	2	2	6	2
Beans	-	-	11	-
Green grams	-	6	-	-
Chapatti	-	-	9	1
Irish potatoes	-	3	12	2
Green bananas	-	-	9	1
Sweet potatoes	-	-	7	4
Arrow roots	-	-	3	-
Cassava	-	-	2	2
Fish	1	4	13	1
Beef	-	-	7	3
Chicken	-	-	2	1
Eggs	1	-	1	-
Avocado	4	1	3	1
Ripe bananas	1	-	8	-
Mangoes	1	1	5	4
Oranges	1	2	3	2
Pawpaw	-	-	2	-
Guava	2	-	2	-

In all five societies, five foods- tea/ milk tea, porridge, ugali, rice and irish potato- are salient, reflecting similarity in IYC food across these communities. In three societies, porridge was reported by four out of five caregivers as a special food for IYC. Societal staple diets and agricultural activities to a larger extent influence IYC diets. For instance, animal milk is characteristic of IYC diets in the predominantly pastoral communities of Marsabit and Isiolo, as they were the most frequently reported IYC foods in these two societies. In addition, the use of ugali as a complementary food is highest in Vihiga, a society where this maize meal preparation is a staple food. Although mentioned by a minority, consumption of Anjera by IYC in the Marsabit, Isiolo and Turkana, and not Vihiga and Kitui, also highlights the influence of societal staple food on IYC diet.

III. Relationships of IYC behavioral core to IYC cultural core

We characterized IYC diet in terms of both the “cultural core IYC foods” and the “Behavioral Core IYC foods,” the former consisting of the foods key informants identified as the foods that families give their children, and the latter derived from 24 hour recalls of the foods they actually fed. The data presented in the previous section demonstrate that caregivers have well-developed constructs about IYC feeding.

Although the samples are small, the results with respect to the relationship of core IYC foods, as a cultural construct, and caregivers’ behaviors in feeding their children, are suggestive. In general, the foods that comprise the “core” from a cultural perspective are also “core” foods from a behavioral perspective. In other words, there is considerable concordance between the cultural construct and dietary practice. Consider the following examples:

- i) In Kitui the majority of children (26 of 32) were given porridge on the day preceding the interview. Similarly, 27 of the 32 children received milk in porridge and/or as a drink by itself.
- ii) In Vihiga nearly all of the children were given porridge on the day preceding the interview, and the great majority, starting as early as 6 months of age, received tea. Usually the tea was flavoured with sugar and milk. Note that 2/3rds of the children received both porridge and tea on the same day, a further indication of the core status of these two foods.
- iii) In Isiolo on the day preceding the interview, 36 out of 47 IYC (77%) received animal milk; 28 received tea and 27 received rice.

On the other hand, there is also some dissonance between the cultural core and behavioral core IYC foods. For example, in Isiolo only 20 out of 47 (43%) had Ugali, 10 out of 47 (21%) had porridge and only 8 IYC ate fruits (17%). In all of the samples in the REGAL-IR areas in which the interviews all took place during the dry season, the behavioral core is considerably more restricted than the cultural core. Milk, tea and porridge are the cornerstone of the behavioral core food for IYC.

Moreover, in all of the counties, the findings on feeding behaviors show strong evidence that IYC are integrated into family diets, beginning at a young age. Thus, the two dynamics of core IYC foods and family foods exist side-by-side in the management of infant and young child feeding.

IV. Relationships of IYC diets to household diets: Caregivers' perspectives on foods they share with IYC.

To round out the picture of caregivers' perceptions of the management of IYC feeding, we asked caregiver-respondents to list usual family foods, including those that are given to their infant or young child (Table 5.5). We also attempted to get a picture of how often the family ate these foods, by asking the woman to estimate how many times in the last week each item had been consumed. Table 5.5 is an illustrative example from Vihiga. As can be seen the list from Vihiga includes foods that are only given to IYC, such as Wimbi porridge. We did not ask, item-by-item, whether the index child had consumed those foods, as we felt this would be too onerous. By comparing the compiled previous day recalls of the IYC to the compiled 7-day food records (which include foods given exclusively to IYC) we can identify what household foods, if any, have not been given to IYC. In other words, these are foods that do not appear in the children's food records.

Table 5.5. - Vihiga: usual foods consumed by family including IYC (in past 7 days)

Vihiga	Kitui	Marsabit	Isiolo	Turkana
Githeri	Githeri	Black tea	Githeri	Sorghum with beans
Chapatti	Chapatti	Fermented Goat milk	Kale+ tomatoes	Rice with beans
Sweet potatoes	Sweet potatoes	Chappati	Rice + beans	Ugali with meat+ kunde
Mangoes	Mangoes	Ashir	Bread	Ugali + cabbage and meat
Arrowroot	Mandazi	Qita	Kunde	Ugali+ cabbage+ meat+potatoes
Cassava	Cassava	Rice+ meat+potatoes	Cabbage stew	Ugali + cabbage and potatoes
Guava	Muswa	Rice+ meat stew	Beans + tomatoes	Ugali +kales
Pawpaw	Pancakes	Sorghum	Chapatti	Ugali +yellow peas
Chicken	Goat, mutton		Sorghum tomatoes	Ugali + green grams
	Chicken		Kale stew	Ugali + mrenda (leafy green)
	Bread		Fermented milk	Chapatti + meat
	Oranges		Mwithazi	Chapatti + beans
	Pineapple		Spaghetti + meat	"meat"
			Ugali with meat	
			Chapatti with meat	
			Doughnuts	

*Note: The numbers in this column are households that usually consumed these foods but did not do so in the past 7 days.

Table 5.6 shows these foods for each of the sites. Some of the foods in these lists reflect cultural beliefs about foods that are not considered appropriate for IYC. (See next section). There is a tendency for animal source foods to be withheld from IYC. It is probable that when animal source foods are available in the household and are selectively withheld from IYC, the primary reason for withholding these foods is concern about the difficulty IYC have in chewing foods that are not readily mashed up. Caregivers repeatedly stressed their concerns about preventing choking. Without use of premastication as a cultural practice or access to food grinders, these foods are not easily shared with the youngest children. This interpretation of why animal source foods are withheld is supported by the finding that when animal source foods can be readily softened, as is the case with small dried fish in Vihiga, it appears that they are not being withheld. In Vihiga, in the sample of 32 children in this county, there were 5 daily intake records that included stew made with small fish. Further research is necessary to adequately understand why some household foods are not shared with the youngest members of the household. However, in general, withholding household foods from IYC does not appear to be a significant factor in child feeding in the five counties.

Table 5.6 - Household foods that do not appear in IYC food records

Food	Vihiga		Kitui		Marsabit		Isiolo		Turkana	
	n	%	n	%	n	%	n	%	n	%
Animal Milk	-		10	31	28	78	36	77	2	04
Tea/Milk Tea	25	78	5	16	27	75	28	60	31	65
Porridge	27	84	26	81	4	11	10	21	40	83
Ugali	27	84	21	66	6	17	20	43	5	10
Rice	5	16	9	28	13	36	28	60	7	15
Irish Potato	11	34	9	28	10	28	35	75	5	10
Green Banana	7	22	5	16	-		14	30	-	
Anjera	-		-		7	19	1	02	3	06

V. Foods that are bad for IYC: cultural views

The idea that some foods are generically bad for children can be found in virtually every culture across the globe. Often an outside observer regards these ideas as strange or superstitious beliefs that have no basis in reality. Typically the phrase “food taboo” is used to refer to beliefs that do not correspond with our own views. This phrase often carries a pejorative implication, meant to signal that the beliefs in question are incorrect and unscientific. This is an unfortunate intrusion of ethnocentrism, and it would be much more appropriate to think of cultural ideas about negative characteristics of foods as “problematic foods” rather than “food taboos.”

We use the phrase “problematic foods” to highlight the fact that although some nutrient-containing substances are edible from a biological/nutritional perspective and are regarded as edible from a local cultural perspective, they are, nonetheless, viewed as inappropriate for certain categories of individuals. They are culturally defined as “food,” but judged to be harmful, negative or otherwise to be avoided- not by humans in general but by specific classes or categories of people. For example, some foods may be prohibited to women in general or pregnant women because they are thought to have negative consequences for reproductive outcomes. As noted above, outright prohibition of specific foods for IYC seems to be universal. Even when foods are prohibited to all members of a culture because of religious beliefs (e.g. pork in both Jewish and Muslim communities and beef in Hindu communities) the foods are still recognized as edible.

The phrase “problematic foods” is also intended to highlight the fact that beliefs about the negative characteristics of many foods are changing, often rapidly. In cultures that were previously closed to external information about foods, many sources of communication are bringing in new ideas. These sources include formal efforts to provide nutrition knowledge through multiple health and education channels, as well as commercial mass media channels, advertising, and exposure to urban lifestyles. As a consequence, there is increasing diversity within cultures about what constitutes “appropriate foods” for IYC (or other population categories). Some people reject these beliefs as “old” ideas; some become uncertain, and some retain a firm commitment to the cultural knowledge they acquired as members of the social group. One consequence of this dynamic of change is tension between caregivers about what is right. This is sometimes manifested as tension between younger mothers and older generation caregivers, often grandmothers or mothers-in-law. Another consequence of the diversification process is that the status of some foods becomes ambiguous. Earlier, caregivers had clear guidelines: “This is good. This is bad.” Now there is more uncertainty; hence the label, “problematic foods.”

In our studies, the last topic of the interviews with the key informants was intended to discover whether there are any foods that caregivers regard negatively. The question we used to engage the key informants on this topic was introduced as follows: ***“We’ve talked a lot about foods that are good for children and help them to be healthy and to grow. I have one more thing I’d like to ask you about. Are there any foods or things to drink that are not good for infants and young children?”*** The results from these discussions are summarized below.

Vihiga. In Vihiga the number of problematic foods for IYC is very limited. One food item that emerged as a problematic food was eggs. It is likely that earlier there was a wide-spread belief that eggs should not be given to IYC before the age of two because they were thought to delay child development – specifically to slow the development of speech. Some of the respondents expressed the view that it was best to avoid eggs in order to avoid this problem. Two key informants suggested that eggs could be prepared in a fashion that would make them safe. Others mentioned the idea that eggs could delay speech, but they explicitly rejected this idea and felt that eggs were good foods to give IYC (***“I have heard of the belief that children should not eat eggs, but I still feed my children eggs. To me, as long as children enjoy the foods and are comfortable with them I do not consider any foods to be bad.”***)

Among other foods that were mentioned in Vihiga as bad for IYC were: ugali with mitoo (Sun hemp); githeri (a dish made with maize and beans); chips and other deep-fried foods; omena (sun-dried sardines); beans; roasted maize; cassava, and sweet potatoes, ***“Sweet potatoes and maize are bad for all children because it makes their stomachs ache.”*** Another caregiver said, of sweet potatoes: Another view was that sweet potatoes could cause children to choke, which could even cause death. However, this potential danger could be avoided if sweet potatoes are fed in small pieces, with water or tea on the side.

Kitui. On the topic of “bad foods for children” there was very strong cultural consensus. All of the key informants, without exception, named githeri (the mixture of whole maize and beans that is a family food staple) as bad. Moreover, they all gave the same reason; namely, that IYC cannot chew it because they do not have teeth. One of the respondents added that the beans in this dish could be separated out and mashed, in which case they can be fed. In the interviews with caregiver-respondents about food insecurity, several women described this action as something they do in the bad season when the family is eating a lot of githeri. Giving IYC mashed beans was not viewed as a positive thing to do, but an action that was taken because there was no other choice.

The key informants stressed the significance of foods being soft and chewable as important criteria for acceptability, and essentially equated bad food with foods that are difficult for IYC to chew and that can cause choking. Watching children carefully when they are eating and taking rapid action if they start to choke was also discussed as an aspect of good caregiving and a reason why caregivers must be observant when their IYC are eating.

Chapatti, *muthokoi* and sorghum were also named as foods that are too difficult for IYC. One respondent said that pearl millet was a problem, and went on to explain: *“I have just heard that it causes constipation, but I have not tried it with my children because I do not plant it. Planting pearl millet is so taxing and I cannot borrow this kind of food from my neighbours. Digestion of pearl millet takes much longer than that of other food like maize flour ugali. If you eat pearl millet you will stay full for long compared to eating ugali from maize flour.”*

Two of the women flagged the idea that sodas and commercial, reconstituted juice is not good for children. Also, one woman reported that the doctor told her not to give eggs before 9-12 months in order to avoid allergies. Although we did not ask directly about this belief in the larger sample, we note that eggs are conspicuously absent in the food records.

Another aspect of the discussions in Kitui in relation to “bad foods” is that all of the respondents explicitly denied that there were any foods that were bad for traditional, cultural reasons. The interviewers translated the word the women used as “taboo;” that is, the women were explicit that there were no longer any “taboos.”

Marsabit. The findings from Marsabit reflect strong cultural consensus about foods that are bad for young children. Maize, black tea, animal blood, eggs and chicken were cited most frequently by key informants as foods that are bad for children. Maize and *korankor* (similar to githeri) was said to be bad because they are hard for children to chew it. Also they have no nutritional benefits as they have no fat. Some women said that they are not digestible, even by ‘older’ children. Black tea was cited because it makes children thin, as well as causing diarrhea and vomiting. *“Black tea is bad for young children because it makes them vomit and I also heard it reduces the amount of blood in the body”*. *“Strong tea is also not good for infants and young children because it has no vitamins and it can’t help the child in any way”*.

Other foods that were singled out as bad for children included: beans, which cause stomach ache; eggs and chicken flesh because they are forbidden by the Gabra culture and chicken is a dirty animal; meat is bad for children because they cannot chew it and they can choke; ugali that has not been prepared with milk, cabbage or meat stew is bad because it is hard and children can’t chew it; and pig meat is bad because it is forbidden (*“Pig meat in particular is also bad for every Muslim. We are not allowed to eat pig meat”*.)

Respondents readily explained some of the cultural beliefs connected with some of the foods that are labeled as bad for children. For example, they volunteered the fact that some clans (e.g. the Gabra) hold beliefs about why chicken and eggs should not be consumed.

Isiolo. In Isiolo key informants identified *githeri* as a food that is not good for IYC. In other areas caregivers sometimes remove the beans from githeri, smash them, and serve them to small children, or feed beans in other stews. However, in Isiolo beans are thought to cause constipation and are avoided. Similarly, sorghum is bad because of the husks, which cause poor digestion and stomach pains in young children.

Turkana. Content analysis of the discussions with key informants concerning foods that are not good for children, yielded the following concerning foods to avoid: i) Foods that are hard and therefore difficult to chew by young children, including maize, millet and sorghum; ii) Animal products, such as blood, which was said to be good only for adults but not children because they cause diarrhea and stomachache; and iii) one caregiver suggested that beans should not be given frequently to young children because they cause flatulence. Additionally, wild fruits, such as eshokon. Which are gathered, boiled and eaten in hungry periods when and there are no other sources of food in the household, are regarded as bad for IYC. Unless they are well ground and prepared they cause bloody diarrhea in young children.

VI. Breastfeeding and complementary feeding

Although the 5 county studies focused on complementary foods and complementary feeding, which is defined as the period between 6 through 23 months, we also collected data on breastfeeding. The results are described below, separately for each county.

Vihiga. All the children were breastfed at birth, and the majority of children (80%) were breastfed at the time of the interview. All the children in the 6 – 8 and 9 – 11 months age groups were breastfed, nearly all (7 out of 8) of the children aged 12-17 months were breastfed. More than half of the children in the 18-23 month old group (9 out of 13) were breastfed. Mothers' estimates of the number of times they breastfed in a day ranged from a low of 4 times to more than 10 times a day.

Kitui. All the children were breastfed at birth, and all but two (both aged 22 months) were breastfed at the time of the interview. Mothers' estimates of the number of times they breastfed in a day ranged from a low of 5 times to more than 10 times a day, with half of the mothers saying they breast fed their child 10 times in the previous 24 hours. . It is interesting to note that the children who were breastfed either the least frequently and the most frequently were both 6 months old. One was breastfed only 5 times because the mother left the child in the care of her siblings to "look for food". In her absence the child was fed plain maize porridge. The other was breastfed 20 times and was otherwise fed only once, with millet (wimbi) flour porridge.

Marsabit. Almost all children 35 out of 36 (97.2%) were breastfeeding at the time our study was conducted. Overall, 22 out of 35 caregivers (63%) reportedly breastfed for more than 10 times in a day. Given the general scarcity of food in Marsabit, as in other REGAL-IR program areas, most IYC are breastfed frequently throughout the day to manage hunger pangs.

Isiolo. The great majority of IYC, 42 of 47 (89%) were breastfeeding at the time of the study. Of the four who were not breastfeeding three were more than 18 months, while one was 15 months old. Mothers' estimates of the number of times they breastfed in a day ranged from 8 times to more than 10 times a day

Turkana. All children were breastfed at birth, and 40 of 47 IYC (85%) were breastfeeding at the time of the study. Five of those who were not breastfeeding were more than 18 months, while one was aged 7 months and another 16 months. Mothers' estimates of the number of times they breastfed in a day ranged from a low of 5 times to more than 10 times a day.

Finally, across all counties, it is noteworthy that all 6 month olds were receiving foods in addition to breast milk at the time of the interviews. We did not ask caregivers when they first introduced foods, but the fact that the 6month olds in our samples were receiving complementary foods suggests that foods were introduced prior to 6 months, the age at which WHO recommends the introduction of foods to complement breast milk.

CHAPTER SIX

How Foods for Infants and Young Children are Prepared and Stored

Introduction

This chapter is concerned with how foods for infants and young children are prepared and stored. This information was a primary purpose of the landscape analysis, together with information on what infants and young children are fed, which we have detailed in chapter 4. “What” (food) is an essential part of the information that is required to obtain a picture of caregivers’ practices related to nutrition. Equally important is information on food preparation and storage of foods. To get an in-depth understanding of food preparation and storage practices of caregivers, we intentionally adopted a broader approach that captured information on the conditions in the household within which food preparation occurs, including the critical relevant conditions pertaining to water and fuel used in food preparation and their sources. To acquire this information we systematically asked caregivers about the specific preparation and storage procedures they used for the foods they reported on the 24-hour recall module. As detailed below, the respondents provided simple, clear narratives on how they prepare food.

The manner in which cooked food is stored is another key aspect of complementary feeding practices. It is a critical point through which food can become contaminated and cause sickness in children. In order to understand food storage behaviors, mothers were asked questions on the methods they used to store food, including types of containers, places where foods are stored and for what periods of time.

Theoretical Perspective

In this chapter we used the cultural ecological model to organize the results that pertain to how foods are prepared and stored. This is not only heuristically useful; it provides a theoretical perspective to interpret the data. We can see how each of the basic components of the model are manifest in caregivers’ management and their responses to the challenges of feeding their IYC with respect to food preparation and food storage.

Beginning with the “physical environment,” the availability of firewood, as the primary fuel for food preparation, establishes the conditions for transforming raw foods into cooked ones. The focus on firewood, a product of the physical environment, directs our

“The manner in which cooked food is stored is another key aspect of complementary feeding practices. It is a critical point through which food can become contaminated and cause sickness in children.”

attention to a number of specific challenges. Compared to other forms of fuel, firewood is very demanding of time and energy management. Its acquisition reflects social organization with respect to the household division of labor. Firewood also involves cultural elements relating to caregivers' ideas about cleanliness and food safety.

Water is another primary feature of the physical environment of significance for food preparation and storage. How it is accessed and managed in food preparation and storage is profoundly important for IYC and household well-being. Water is intimately affected by climate and seasonal changes, which are particularly evident in relation to food acquisition, but are also evident as an issue in food preparation and storage. Caregivers' concerns about keeping food safe from unwelcome insect and animal life that are present in the physical environment is another aspect to examine.

Characteristics of "Technology" establish major parameters for preparation and storage. Among the features discussed below we see its primacy in affecting availability of water, styles of cooking and limitations on cooking. The utensils used in preparation and storage reflect technology. The availability or lack of availability of electricity at the household level is another technological factor we find manifest in the topics we are concerned with in this chapter.

Features of "Social organization," which includes economic characteristics of households (including women's employment), as well as a large array of other factors, are directly evident with respect to food preparation and storage. Among the important information that emerged in the Kenya studies in relation to this domain is the role of household composition and the household division of labor in preparation patterns and preparation-related conditions. A related feature is the organization of responsibility for food preparation. Variations in food storage practices are also manifest as functions of social organization, including child care arrangements and household composition.

Turning to the domain labeled "culture," this aspect of IYC feeding in the five counties is reviewed in detail with respect to beliefs and values in later chapters. However, there are also a number of cultural findings to present in this chapter. Recipes, and their associated techniques, are essential cultural expressions. In fact, many food scholars would argue that recipes, and the food preparation techniques through which their expression is realized, are the embodiment of culture and cultural traditions. Across the global many iconic cultural dishes contain essentially the same main food ingredients, but the ways in which they are prepared, including the additions of flavoring agents, make them profoundly different cultural expressions. One of the striking findings in all five sites was the ease with which virtually all respondents provided clear and fluent accounts of their recipes and food preparation techniques. In that realm of activity, "cultural competence" was essentially manifest by all the caregivers we interviewed.

"Social Environment," the world outside the household and the community, is particularly evident with respect to food acquisition, which is examined in the next chapter. However, it is also plays a role in relation to food preparation and storage. All of the tools and equipment that caregivers use for preparation and storage originate in the social environment. Their availability to caregivers, and the limited selection of resources for food preparation and storage, compared to the much larger pool of food preparation and storage technology in the social environment is a function of how these externally-sourced items are marketed, including their pricing.

From the preceding paragraphs, we see that the cultural ecological model provides a theoretical framework from which to undertake an analysis of the study findings with respect to the "how" of food preparation and storage.

Methods

Much of the data on preparation and storage were collected using the caregiver-respondent module in Phase II of the FES, which is devoted to an examination of the foods the IYC had received on the day previous to the interview. In each interview, after the caregiver-respondent had completed her list, the next step was to discuss each of the foods she reported. This discussion was initiated with a series of questions:

- 1) *Who prepares (the food item)?*
- 2) *How do you usually prepare it?*

(3) How much to you usually make when you make _____?

If stored: In what kind of container is it kept in? Where is it kept? For how long is it kept?

(4) Does anyone else in the family eat this food or is it made (or purchased) just for the child? If for the family: Is it modified for the infant (e.g., thinned out, less spicy)?

For each of these questions, the instructions to the interviewers included reminders about probing. As with all of the open-ended questions, women's responses were recorded, transcribed and translated. As with all of the other "text" data, they were coded through an iterative process in which themes were identified, refined, combined or separated as the coding proceeded. In the results below, we do not have separate presentations for each of the study sites. We indicate where specific findings originated, but draw from them to create a composite picture. We do, however, also note when results are strongly different from one county to another.

FOOD PREPARATION

Food Preparation: THE PHYSICAL ENVIRONMENT

Firewood

We begin this discussion with firewood. Throughout the five counties firewood, and/or its derivative product, charcoal, is the fuel households use to prepare food. This basic local resource from the physical environment is essential for the process of transforming raw ingredients into food that can be consumed, and it is required for nearly all of the foods that are prepared for infants and young children. Firewood is so salient conceptually to the preparation of IYC foods that when we asked caregivers the question "How do you usually prepare it [the food item from the recall] many of the narratives provided by mothers in response to our repeated, sequential question began with the phrase: "*I first light the fire*" or "*I light a fire.*"

In all of the counties firewood is much more common than charcoal, although the latter is often preferred. According to respondents the advantages of charcoal include prevention of soot formation on the *sufuria* (cooking pot) and minimal to no smoking. (*Frequencies of types of fuel are shown in Chapter 3*).

Firewood quality; The quality of firewood is important for caregivers because it affects the amount of time that is required for food to be ready, as well as the environment in which the food is prepared. A respondent in Vihiga explains:

"Dry firewood makes cooking easy as the firewood is fast and does not produce a lot of smoke. When the firewood is wet it takes much longer and it's very difficult to cook the food because the smoke chokes and makes one uncomfortable. The cooking may last about one and a half hours when the fire wood is wet."

Firewood and food safety; A number of women across the counties observed that one of the tasks in food preparation is removing contaminants of various types. In addition to small stones, sticks and pebbles, caregivers noted that the cooking fire itself is a source of contaminants. Ashes, charcoal and small twigs have to be removed as part of food preparation.

Water

Water is another essential environmental resource, but its importance in food preparation is often overlooked. It is so fundamental for life itself, for health, for food production, for cleanliness, and so on, that its role in food preparation is much less salient in academic, political and policy discussions.

As would be expected the topics of water scarcity, water quality, the burdens on women of collecting water, the effect of drought on crop and animal production were central themes in caregivers narratives in all of the counties. Less expected were the insights caregivers provided about its role in food preparation. Women described multiple preparation activities involving water. They included descriptions of washing cooking pots and ingredients as initial preparation activities, how much water to use in recipes and ratios of water to other ingredients, and at what point in the cooking process to add water. Water also appears commonly as an explicit ingredient in recipes (See below.) The most dramatic revelations of the importance of water in food preparation occurred in the context of narratives on water scarcity. The following statements by women in Kitui show that the connection between water and food preparation are recognized and highly salient:

Mwende: ***“The water situation is so bad that sometimes people do not eat because there is inadequate water. Though food may be available in the household there is completely no water to cook the food. We are forced to go look for water very far. Sometimes we fail to find water and people are forced to sleep hungry.”***

Faith: ***There are no rains; there is no water, when we have no rain we are forced to buy everything. When there is no water we sleep hungry sometimes. This year I slept hungry because we wanted to cook but there was no water for cooking completely. We went all over looking for water but we were not lucky to get any so we slept hungry. Sometimes one has to walk for 5km just to fetch water only to find a long queue of people looking for the same commodity.***

Lucy: ***Water is equally scarce. The rivers are dried up because of the harsh climate. We have to move very far to get water. This affects the cooking and time available for casual labor.***

Food Preparation: TECHNOLOGY

Water-related technology

There are several manifestations of the effects of household technological conditions on IYC food preparation evidenced in the studies in the 5 counties. The first, and among the most important in relation to the consequences for infant and child health and well-being, concerns water. Piped water inside the house is relatively rare, as discussed in Chapter 4.

The lack of modern technology to bring piped water into the house clearly has an impact on the amount of time women must spend getting water to the kitchen where cooking takes place. In addition to the matter of how the time spent in fetching water reduces the time mothers have for food preparation, the lack of readily accessible safe water requires the use of other technologies to improve water quality. One option that respondents reported they use is chemical water purification tablets. In some communities these are available without cost to households, in others they have to be purchased. In yet others, chemical purification technology unknown, and boiling water is the only technique in use. In some communities respondents suggested that when water appears clear to the naked eye, it is safe, and it is unnecessary to take any measures. Apart from boiling, the use of tablets appears to be the only water purification technology the women we interviewed are aware of.

Food preparation equipment

A striking feature of technology in all five counties is the ubiquity of the modern version of the traditional cooking pot, referred to in Swahili as a “sufuria.”

The sufuria is so central to food preparation that the majority of respondents, in all sites, described getting and preparing the sufuria as an early step in preparing the recipes they reported:

Turkana: *“ I get a Sufuria and clean it, before then I will have lit fire so I place the Sufuria with water on fire and leave it to boil”*

Isiolo: *“I light the fire, wash the Sufuria, then put oil and onions and allow the onions to brown. I then add tomatoes and stir.”*

Kitui: *“ Boil water in a clean sufuria”*

Vihiga: *“Put water in a clean sufuria”*

Marsabit: *“ I peel the potatoes, then I clean the sufuria, after which I light the fire and add water in the clean sufuria”*

Apart from the sufuria, women occasionally referred to other food preparation tools, particularly sieves. For example in Vihiga, one respondent said:

“The water we get from the tap for household use is not so safe for consumption. It has germs. I boil the water to kill germs after that I sieve to remove any particles i.e. sticks that can cause the baby problems.”

A respondent in Isiolo described using a sieve for a related purpose. She explained that she sieves mashed bananas and potatoes *“because the food is usually rough, so I sieve to remove fiber because the digestive system of the child can’t digest rough food.”*

In general the inventory of food preparation equipment in the counties is limited, compared to the variety of items one finds in urban areas of Kenya.

Another important modern technological innovation, which has had major positive effects on women’s time allocation and energy, is the advent of small mills. The rhythmic “thump, thump” sound of grain being pounded, which was once an iconic element of village life throughout Kenya, is no longer heard. None of the respondents included pounding grain to prepare it for cooking as part of their preparation activities. In its place are the small local mills where women can take their grain to be ground for a small fee.

Food Preparation: SOCIAL ORGANIZATION

From the perspective of household roles, obtaining fuel for cooking is an important domestic task throughout Kenya. Household task allocation and the division of labor are fundamental aspects of social organization. In practice obtaining fuel means gathering firewood or gathering and then burning firewood to create charcoal. In rural areas firewood is rarely purchased, although some women engage in firewood collection or charcoal production as an income-earning activity. Cooking fuel begins with women’s interaction with the physical environment, but it is also a central feature of household organization and the division of labor.

In some households it is possible for women to delegate the collection of firewood to older children. This feature reflects another key aspect of household organization – family composition. Delegating firewood collection to school age children has a significant effect on time use of these children, including time availability for schoolwork. While this characteristic of social organization is important from the perspective of child welfare, it also highlights the importance of household composition for the management of IYC feeding, including food preparation. Are there children or other adult women in the household who can gather firewood? When mothers cannot delegate collecting fuel and water to others because there is no one else to delegate it to, or no one who is judged to be appropriate for those tasks, the IYC must either be taken along or left in the care of others.

Shifting attention to the act of cooking once the means to do it are in place, we found that in all of the five counties women saw food preparation of IYC food as their responsibility. This was not only an articulated cultural expectation, but it was also borne out in practice. In answer to our question,

“Who prepares (the food item),” which was used to initiate the description of the recipe procedures, the answer was almost universally: **“I do.”**

Grandmothers, sisters (or co-wives) and older female children in the family were mentioned as family members who assist in food preparation when the mother is away. It was, however, quite clear from the interviews that mothers are particularly keen on both cooking and feeding infants and young children themselves. They only delegate these responsibilities when they have to be away from home, for example, to fetch firewood or water or engage in income earning activities.

Some women described the practice of preparing IYC food and leaving it for others to feed. A respondent in Marsabit said:

“I ensure I have cooked the mashed potatoes and leave it with my co wife to feed the baby when I go to fetch firewood”.

Another mother in Marsabit said:

“When I know I will be away, I prepare anjera and leave them with my sister in law to feed him”.

Mothers explained why they prefer to prepare food for their young children themselves:

“Others in the family cook the porridge differently, and the baby likes my porridge. That is why I prefer to cook it myself”.

“For mixed dishes, I am the one who always prepares the food because its preparation is detailed and it has a tiresome cooking process, which involves peeling of potatoes, preparing cabbage and adding other things”.

Some women trust others to make the food, but leave instructions on how the food should be prepared. An example of the this approach is illustrated in the following quote from a respondent in Marsabit:

“When I am away, I leave instructions on how the food should be prepared because I would like food for my child cooked in the same way that I prepare it myself”

Another mother of an 11-month-old infant said:

“When I am not around my mother in law helps in preparing food for her because she also knows how to prepare the food, and she is available at home”.

In contrast to the situation one finds in some urban areas in Africa, where children are often cared for in crèches when women work outside the home, none of the women in our samples in any of the five counties reported taking their children to be cared for outside their homes. Thus, patterns of food preparation are highly contingent on features of social organization internal to the household.

Food Preparation: CULTURE

We begin this section with an important cultural feature, which we found in all of the counties -- namely women's powerful concerns about food safety and hygiene. This concern was expressed regardless of ethnic affiliation or economic status. From this we conclude that contemporary biomedical ideology, resting on the germ theory of disease, is fully embedded in the medical “explanatory models” of caregivers. As we employed careful sampling frames to ensure representativeness, had almost no refusals to participate, and the economic profiles of respondents correspond to district profiles, it is unlikely that this cultural feature is the result of sampling bias in favor of more “modern” perspectives.

Concern about food safety in food preparation

Women's concerns about the importance of good hygiene during food preparation and feeding IYC emerged in all of the study sites during their descriptions of how they prepare the foods they had given to their child in the previous day. This was particularly evident in their detailed discussions of food preparation and was also prominent in the discussions on how foods are stored (see section below). As reflected in the quotes above concerning the sufuria, food preparation narratives almost invariably mentioned starting with or using a clean pot. The following are typical examples:

"Make sure the utensils are clean so that the food does not get dirty when I prepare or feed the baby. This will keep the baby healthy".

Similarly, in Marsabit, a respondent explained:

"I have to wash [my] hands [before cooking] to clean all germs because they can infect the child. They can cause stomach ache and diarrhea".

The following example from a mother in Vihiga describes food preparation procedures to remove contaminants:

Pick the omena [small dried fish] ... separate the small stones and other items from the omena. Wash in cold water to remove any remaining small stones and mud. Put the omena in a clean bowl of water and leave for a while until the soil settles at the base of the bowl.

RECIPES

Recipes are a primary expression of culture. The discussion of recipes in this section is divided into two parts: i) recipes for IYC "core foods" (the foods that are prepared specially for infants and young children), and ii) recipes for family foods that are also given to IYC. The recipes in this section are illustrative of the rich body of information respondents shared with us.

Recipes for IYC Core Foods

The recipes in this first set consist of 3 typical descriptions from caregiver respondents on preparation of "porridge."

Vihiga: Porridge

- *Put water in a clean sufuria*
- *Take 2 spoons of flour [commercial baby cereal] and water and make a paste*
- *Add the boiling water add milk and sugar let it boil*
- *Remove it from the fire, cool and feed the baby*

Isiolo: Porridge

- *I start by lighting the fire, and then put water in a clean Sufuria to boil; I then prepare the flour paste with cold water.*
- *I then add the paste to the boiling water while stirring to avoid forming lumps. I allow it to boil till ready.*
- *Interviewer: Earlier on, you told me you add sugar, oil and salt to the child's porridge, I would like to know when these ingredients are added.*
- *I normally add them when the porridge is cooked after I remove it from the fire.*

Turkana Porridge:

- *I get a Sufuria and clean it, before then I will have lit fire so I place the Sufuria with water on fire and leave it to boil, once it boils I scoop maize flour and put it in a jug with cold water.*
- *I then stir [water and flour] with a cooking stick till it is well mixed. I pour the mixture into the boiling water and continue to stir till a consistency I desire is attained.*
- *I then leave it to boil for about 20 minutes after which I add sugar and remove the Sufuria from the fire and let the porridge cool down.*

In addition to porridge a number of other foods are prepared specially for IYC and are not shared with the rest of the household. The following examples illustrate recipes for this cultural category.

Isiolo: Mashed green bananas and potatoes

Interviewer: *I would like to know how you prepared the mashed potatoes for [child name]*

- *I start by peeling the potatoes and bananas, then cut in small pieces and wash them. I then peel and cut the onions and fry in a sufuria till brown. When brown, I add the bananas, potatoes, tomatoes and cover to allow them to cook for a while.*
- *Then I clean the cowpea leaves, cut them, clean them again and add them to the cooking bananas.*
- *I then allow them to cook; I add salt during the cooking. When ready, I mash the food, add butter and mash some more. I then feed the child. During the feeding I give the child milk along with the mashed food to prevent choking.*

Marsabit: Mashed potatoes

Interviewer: *I would like us to discuss how you prepare mashed potatoes, but before we start the process of preparation, please tell me all the ingredients used.*

“Irish potatoes, tomatoes, carrot, onions, cooking oil and salt”

Interviewer: *Thank you. Now tell me how it is usually prepared.*

- *I wash the sufuria, light the firewood and fry the onions in fat. Then I add tomatoes and let it cook for a while. Then I add peeled and washed potatoes and carrots.*
- *I add salt, little water and cover the sufuria and allow it to cook for a while. When it's ready I serve potatoes and the carrots into a plate and mash them together to feed the baby.*
- *Interviewer: How long does it take you to prepare this meal?*
- *It takes about an hour.*

Recipes for Family Foods

The process of integrating children into household diets begins at an early age. For example, in Marsabit respondents emphasized that family foods, such as tea, anjera and ugali, are consumed by all members of the family. The discussions about recipes in the records of what IYC received in the preceding 24 hours contain many examples of dishes that were prepared for the family. The following are illustrative:

Anjera

Interviewer: *Now, tell me how you prepare Anjera, but first tell me the ingredients?*

- *I use wheat flour, salt, fat, sugar and water*

- Interviewer: *ok, now tell me how you prepare it*
- *First I ensure that the container for mixing flour is clean. Then I add water and a handful of sugar and a pinch of salt.*
- *I pour the flour into the container, then add water, salt, and sugar and stir it until it mixes properly; then add buko (local yeast) then leave the mixture for 2 minutes, then start cooking.*
- *I take a clean pan and let it heat on the fire, then I scoop fat using a tablespoon and spread it in the pan, then let it melt. After I pour in a little mixture and spread and then let it cook. When one side is cooked, I turn it to cook the other side.*

The following recipe for ugali, from a respondent in Isiolo, describes a dish that is a dietary mainstay on all of the counties:

- *I put water in a clean Sufuria and put on fire, leave it to boil and add flour. I stir and let it cook till it is ready. Then I remove it from the fire.*
- Interviewer: *Which flour do you use?*
- *Shifted maize flour (dola)*

In Vihiga, the only county in our study where fish is a routine part of the diet, one respondent provided the following description of a family food, which she referred to as “Stewed Dried Sardines:”

- *Pick the omena [separate small stones and other items from the omen].*
- *Wash in cold water to remove any remaining small stones and mud. Put the omena in a clean bowl of water and leave for a while until the soil settles at the base of the bowl*
- *Prepare cooking equipment*
- *Wash onions and tomatoes thoroughly, chop them into small pieces*
- *Fry onions and tomatoes, add salt and omena and cook until it softens*

Food Preparation: THE SOCIAL ENVIRONMENT

The fifth component of the cultural-ecological model, the social environment, is particularly relevant with respect to the origins of food, including where foods are acquired but we see many reflections of the social environment in the data on food preparation, as well. One of the most striking aspects of social environment influences was described in the previous section in which we saw that the external ideologies of biomedical knowledge have become an integral part of emic knowledge systems and are deeply influencing food preparation.

In addition to integral recipe components, such as sugar and flavoring cubes, which originate outside of the local environment, another striking feature of incursions from the social environment are the condiments that are added to IYC (and family) dishes after the food has been prepared. Virtually all of the condiments that are added to food because it is felt that they make it the more attractive and more palatable, and thus, more acceptable to IYC originate in the external social environment.

In the next section we turn our attention to results related to food storage, where the components of the cultural-ecological model are also a useful framework to examine them.

FOOD STORAGE

Food Storage: Physical Environment

Although it does not play a direct role in food storage, the difficulties women experience in managing the supply and utilization of firewood as their fuel for cooking means that storing foods to avoid

having to cook multiple times a day is an attractive, and even a necessary, practice. The practice of cooking once, or at most, twice, a day is a direct consequence of the conditions in the physical environment.

Another feature of the physical environment that has an impact on IYC health and well-being with respect to food storage is temperature. Given the need to store food, together with the lack of access to refrigeration, the climate in all of the counties significantly affects the potential for food spoilage after the food has been prepared. Concern about the safety of the foods they give their IYC is probably the single most salient feature in women's discussions about food storage. However, respondents did not specifically point to the temperature at which foods are stored as a concern with respect to food safety. On the other hand, they are very concerned that cold foods should not be served to IYC. This sentiment is expressed repeatedly.

Food storage: TECHNOLOGY

The benefits of modern technology for food storage present a mixed picture in the five counties. The availability of thermos flasks, which are not universally affordable, has modified food storage practices in some households, but not in all. The following two excerpts are illustrative of narratives describing reliance on thermos flasks:

"I cook multiple portions because I have a thermos flask to store the porridge (for six hours). The thermos flask keeps the porridge hot. When the baby wants to feed all I do is just give it to her. The flask is placed on the kitchen table; a raised surface to keep from breakage or from anything else. Keeping food hot saves on time used to warm the porridge; all I do is cool the porridge and feed the baby."

"I prefer the thermos as storage for his uji because it keeps it warm. You know warm porridge is easily accepted by children like Eric. In addition, I keep it in the thermos to maintain its thickness. You see if it is in the sufuria it becomes thicker with time and the child is not able to take it well when it is too thick. I really struggle with feeding because he uses a cup."

Some women practice a mixed storage strategy, using both a thermos and other containers:

"Some portion of the porridge is stored in a jug and the other portion is stored in a flask: when I want the baby to feed all I have to do is mix the cold and hot porridge. The porridge is stored from morning 9.00am to around 4pm."

The interviewer probed for more detail and was told the following:

"You know, when the baby wants porridge and you delay in giving it to her because you have to warm it she cries and throws tantrums. By the time you want to give her the porridge the baby may not even eat it. Whenever my child asks for food and you delay in giving it to her she will give you problems. Sometimes she refuses to eat all together. I have decided to do that to make my life easy. It also helps me save time."

"The porridge is stored in two different containers some of it is stored in a thermos flask, the other portion is stored in a cup. This is done to make feeding easy. When the baby wants porridge all I do is use the porridge in the cup to cool the one in the thermos just before feeding. Reheating the porridge takes much time trying to cool the porridge in the flask may also take long. You know children are not patient especially when hungry. When they ask for food they want it there and then when you delay they may cry, throw tantrums and even refuse to feed."

In households where this technology is not available, women store food in plates or other similar containers. Women's narratives on the use of these other options with respect to IYC foods were particularly instructive in revealing their concerns about various animal and human incursions, as

well as the value of having food handy. (The specific threat of contamination from germs is taken up below in connection with culture.)

Interviewer: *Where do you keep the porridge?*

Respondent: *On the dish rack inside the house.*

Interviewer: *Why do you keep it inside the house?*

Respondent: *There is nowhere else I can keep the porridge because it will either be contaminated or poured by children, chicken or goats.*

A respondent in Marsabit, the mother of a 23 month old, said, in response to a question about what happens to the mashed potatoes that remains?

"I put it in the plate, then place it on the khorbo (A traditional Garba shelf suspended from the roof, which is designed to prevent goats from knocking down food that is placed there.) Every time he is hungry, I scoop some and give him.

Other mothers in Marsabit said:

"I cover and keep it [leftover food] so that she can eat it later. Sometimes I can also eat the remaining food or my younger children eat it".

"It will be stored and the baby will eat the food left when she gets hungry. She will do this until she finishes the food".

"I give her the same tea that remains later.

Interviewer: *Is there anything that is done to the tea that remains in the cup before giving it to the child?*

R: *Nothing, I do not even heat it, she takes it as it is because she feeds frequently".*

An important feature to note about the food storage technologies that are available to households in the study areas is the absence of technologies to store food at lower than ambient temperatures.

There is no indication in any of the narratives that women return left-over food to a boiling temperature before they put it into the thermos flasks. Thus even the use of this technology does not ensure food safety and may actually exacerbate the growth of harmful bacteria. Unless the food is boiling at the point at which it is placed in the closed containers, it becomes an excellent medium for bacterial growth.

Food storage: SOCIAL ORGANIZATION

Social organization affects access to food for families in diverse ways, depending on the context. In the REGAL-IR counties, livestock, which form a significant basis of food security for families including young children, are typically driven away from the homestead in the search for water and pasture during the dry season, which lasts for months. While a few goats are often left behind to cater to the food needs of the family, this practice often results in limited access to milk. Milk is a core food for infants and young children, which is "stored" on the hoof (animals). When herds are away for long periods, this effective 'storage' system disappears and the result is the necessity to feed IYC with foods mothers termed as 'inferior foods'.

During periods of food stress, one of the key coping strategies of caregivers is to reach out to relatives and close friends for food support, as seen in the following quotes from mothers in Turkana:

Interviewer: *“What do you do when you do not have food?”*

Respondent: *“I go looking for food from my people.”*

interviewer: *“What do you mean by that?”*

Respondent: *“I visit my relatives looking for one that has food to assist me feed the baby and our family”.*

Respondent: *“There is not enough food to feed Jane.”*

Interviewer: *“How do you deal with this problem of lack of food?”*

Respondent: *“I borrow or take foods on credit.”*

The ability of people in these networks to offer the necessary support is influenced by their own capacity to store food. When close friends and relatives do not have some food stored themselves that they can share, families, especially infants and young children suffer. Ability and capacity to store food is therefore inherently linked to food security and ultimately the well-being of young children.

Scarcity of financial resources sometimes leads families to sell home produced stored foodstuffs to raise money to meet other household needs such as health, education. This means families are food secure immediately after harvest ,but extra food is being sold off gradually. Apart from loss of home produced foods through sales, in Kitui, caregivers expressed concern and reservations about use of pesticides on stored foods as they do not believe these products are safe.

Food storage: CULTURE

In the previous section on culture and food preparation, we described women’s strong concerns about protecting their children from illness and we specifically linked their concerns to their actions to protect food. We noted that these concerns appear to originate in international biomedical cultural constructs, which have now become an integral part of women’s explanatory models of illness causation. However, it is also likely that the sources of these beliefs include ideas from older cultural traditions. For example a respondent in said: *“I was told by my mother-in law that saliva from cat is poisonous and not good from one’s health.”*

Taken together, the narratives on food storage practices from women in all five counties provide a rich body of evidence concerning the high salience of concern about food safety, disease transmission and child health. Here are a few examples, beginning with the mother who expressed concern about diseases from cats:

“The food is stored in a covered plate. Then it is placed in a covered sufuria to avoid cat sand rodents, which can contaminate the food. If food is not covered a cat could transfer germs from its mouth to the food... In addition not covering food exposes it to dirt. Consuming contaminated food could cause stomach problems and even diarrhoea.”

“It is stored in a covered container to avoid germs and help keep it free from germs, from any insects or dirt. It is kept from lunch time to around 4 pm”

“My house is made up of thatch (roof) hence produces a lot of dust. I cover the food to prevent contamination with dust. Dust can cause diarrhea, in case the child consumes this food she cries a lot due to stomachache.

“The food is stored in a covered sufuria; this is done to avoid germs from contaminating the food. If a child consumes contaminated food they are likely to suffer from diarrhea. Also the baby may choke if a stick or any other dirt comes into contact with the baby. You see if you do not cover food you have no control of what drops in the food.”

“I usually store the remaining rice in a plastic container. This is the only container I have available for use. Then I cover it and place it on the stool in the bedroom. This is to make sure children do not eat or touch the food... this can transfer germs from their hands into the baby’s food. If my baby eats dirty food she may develop diarrhea. Diarrhea causes the baby to suffer from dehydration; also the baby tends to lose weight making her too look small.”

“The food (Irish potato soup) is stored in a hot pot (a bowl with metallic lining that keeps food warm) to keep it warm. The baby does not like cold foods. The hotpot is placed on a table in the sitting room to avoid breakage, contamination by flies and to prevent attack from safari ants. Consuming contaminated food causes diarrhea.

Food storage: SOCIAL ENVIRONMENT

Storage of food for infants and young children outside the home is affected by a general absence of refrigeration facilities in the local stores. This explains the absence or very limited presence of perishable foods, such as vegetables and fruits in the diets of young children, especially in the REGAL-IR counties. In addition to the long distances of study sites from the county or sub-county towns, lack of facilities for refrigeration in nearby smaller shops and markets means that families cannot access these until a member of the household travels to these larger towns. This happens infrequently. This finding highlights that what is available for purchase in the social environment is heavily influenced by poor storage facilities outside the home.

To conclude: In this chapter we have reviewed the complex picture of food preparation and storage beliefs and practices that are involved in the preparation and storage of infant and young child foods and feeding. The data suggest that closer attention to the “how” components of IYC food in planning and developing nutrition interventions is warranted.

CHAPTER SEVEN

Food Acquisition and the Effects of Seasonality on Foods for Infants and Young Children

“Equally important for infant and young child feeding is the fact that the social environment is the locus of the social institutions that enable, moderate, constrain, and otherwise condition and control the flow of external foods to households.”

Introduction

The “where” and “when” aspects of infant and young child feeding encompass a large number of factors that fundamentally shape infant and young child feeding. Potentially, an examination of “where” with respect to IYC feeding could include a wide variety of topics ranging from where foods are acquired, including home food production, sources of food purchase and purchasing patterns to the physical locations in which food is fed, including locations inside the home, examined from the perspectives of food safety, comfort and distractions, and feeding outside the home in crèches or other childcare locations or caregiver workplace. The “when” aspects are similarly broad. An examination of “when” could potentially include issues of when complementary feeding is initiated, when IYC are integrated into family diet, feeding frequency over the course of the day, to larger patterns of IYC diet composition that are associated with seasonal differences in the household food supply, seasonal differences in what is available in the market place and patterns of fluctuations in household economic resources that affect their ability to acquire foods and constrict food choices.

Expanding on the matter of food acquisition, a focus on “where” can include examination of the balance between household produced versus purchased foods, beginning with the question of how much households rely on home produced foods. It also lead to examination of the types of foods that are available in “the marketplace,” and the ease or difficulty of physically accessing foods from different sources. Financial and time costs of accessing food resources outside the home are important elements of “where.”

With respect to food preparation “where” directs attention to the issues of where the food is prepared (e.g. by the mother in her own home or prepared by others elsewhere and brought into the home “ready to feed”). “Where” can also include attention to the physical locations and characteristics of the environments in which IYC are fed, encompassing questions of where breastfeeding occurs, where the primary caregiver is physically in relation to the IYC when feeding occurs, as well as matters of food safety and hygiene in the feeding environment.

Given the breadth of potential topics and the richness of data that an

FES generates, it was necessary to restrict the focus of this chapter to a few key issues. We decided to combine the discussion of “where” and “when” because the key findings we want to highlight are their intimate relationships in the households in the five counties. This close relationship is due largely to the fact that seasonality powerfully affects where foods are acquired and when they are eaten, often shifting food consumption patterns dramatically. In other environments, in which agricultural activities do not play a role in household diets, or where climate is more favorable for extended food production, the relationship may be less tight. In this chapter “when” is essentially represented in our discussions of the larger cycle of “when” that is created by the effects of seasonality. However, we conclude with a short section on “when” that summarizes the picture with respect to frequency of feeding over the course of the day.

Theoretical Perspective

The cultural-ecological framework, in which this research is grounded, is well suited for the tasks of analyzing and organizing research results that are embedded in the “where” and “when” aspects of infant and young child feeding.

Beginning with the dimension of “Social Organization,” the first set of factors to consider are characteristics that affect the extent to which households have access to land for food production. These factors include social and cultural patterns of land tenure, inheritance, household needs for cash, the labor available to use land to produce food, the availability of financial resources to support agricultural production, and the physical capacity of household members to carry out agricultural tasks. All of them influence the extent to which household food production provides a viable base for household food acquisition. All of them vary within and between households and research areas in the five counties.

A major feature of “Social Organization” at the household level that directly and indirectly affects “where” and “when” characteristics of IYC nutrition is household composition. Household composition influences the allocation of the household’s division of labor into investments in food production and to income earning, which are important influences on where food is acquired. Household composition also influences childcare arrangements, including childcare tasks directed to food preparation and feeding of IYC takes place.

Moving from Social Organization to the two environmental domains – “the Physical Environment” and the “Social Environment” -- household interactions with their physical and social environments are clearly fundamental to food acquisition. With respect to the physical environment, the essential features of water availability and soil quality are primary factors for production of plant foods, while the availability of water and grazing land rank high as prerequisites for animal production. For both modes of production, seasonal fluctuations in water availability establish the basic parameters for the length of time households can rely on their own food production. All other factors held equal, the effect of seasonal variations on household capacity to produce food cannot be over-emphasized.

The obverse of household food production to meet household needs is the extent of household dependence on foods produced elsewhere and that acquired with cash (or a combination of cash and credit). This brings us squarely back to the domain of the “Social Environment.” In this domain we find the foods that augment household food supplies that increase dietary diversity, that sustain households when their supplies are gone, or that, in some households, are the sole source for food acquisition. The social environment is also the domain where we find the foods that have brought major changes to “traditional diets” in the five counties, with all of the implications, positive and negative, for household health and well-being that externally sourced foods present.

Equally important for infant and young child feeding is the fact that the social environment is the locus of the social institutions that enable, moderate, constrain, and otherwise condition and control the flow of external foods to households. They include a large range of actors and institutions, from small-scale informal economic sector entrepreneurs, traditional markets, kiosks, to small stores to large marketing endeavors. These institutions are the vehicles through which externally grown and produced foods reach households and their infants and young children. The location of these external food acquisition sources, as well as the infrastructure required to access them (e.g. roads,

transportation systems), are other factors that are fundamentally controlled by the external social environment.

Delocalization. No society on the face of the earth today has a totally localized food system. Even the most remote and isolated communities experience multiple incursions of external foods, and incorporate them into household diets. Consider, for example, the presence of Coca Cola and instant Ramen noodles in the regular, daily diets of nomadic herders in Tibet. The “delocalization” of food systems is a fundamental and accelerating process in all societies. It involves both the outflow of local foods and the influx of foods produced elsewhere. For the analysis of the results from the five counties, delocalization is essentially about “where,” but it is also observable in the analysis of “when” because of the association with seasonality.

In addition to the significance of delocalization with respect to the domains of the physical and social environments, and the incursions of external technology, its importance for cultural aspects of infant and young child feeding has been, appropriately, a major focus of research. In this domain there is a large literature on the effects of delocalization, particularly how the introduction of bottle-feeding has affected breastfeeding. Currently there is growing attention to its influences on caregiver perceptions and practices related to complementary feeding.

Methods

The data that are presented in this chapter are drawn from a number of the modules in both the key informants and the caregiver respondent protocols. The reader is referred to Chapter 3 for a description of the various methods and the focus of each of the modules. The data that we review in this chapter come primarily from open-ended questions, in which an initial question is used to direct the respondents’ attention to specific topics, followed by probing to draw out nuances and details.

In many respects this chapter, and the following one, were the most challenging for the investigators with respect to data analysis, synthesis, and writing. Often the topics that are covered here were also psychologically difficult for participants and interviewers. The difficulty lies in the emotional experiences of everyone involved with respect to discussing food insecurity within the context of seasonality. Inevitably describing the lived experience of food insecurity can be emotionally challenging. For many of the households in the five counties food insecurity becomes severe during periods of seasonal food shortage. In fact, some women drew contrasts between how much easier it is to feed their children in periods of greater seasonal food availability than in periods of food shortage.

For some households securing the nutritional security of children is always a distressing challenge, but for nearly all of the respondents in all five sites the seasonality of food availability, coupled with lack of financial resources to purchase foods, is a source of emotional stress. Thus, exploring these issues required sensitivity on the part of the interviewers. An extended period of training before the fieldwork commenced included attention to potential emotional reactions, as well as discussions about the contrast between conducting research using survey methods and ethnographic interviewing. When the research supervisors identified individual fieldworkers who were not sensitive to the social-emotional aspects of interviewing, they were removed from face-to-face interviewing responsibilities.

Where IYC Foods Are Acquired

Most households in our samples in the five counties have some land and engage in some agricultural production for home consumption. To a lesser extent, many households also use the sale of home produced food as a means of generating much needed cash. None of the households were food self-sufficient, and all households purchased the majority of foods that are specially prepared for their infants and young children. A small minority of households produced staple grains that lasted through many months, but all households of participants are dependent on the market for many of the foods in their household food basket.

One of the striking features of the results we presented earlier on “what” foods are given to IYC is that many of the foods are produced outside the household, including foods that are part of the “IYC cultural core.” Here we turn attention to a fuller examination of patterns of acquisition sources. Tables 7.1 and 7.2 describe the patterns in sources of acquisition for Vihiga and Kitui. Table 7.3. Shows acquisition sources reported by caregivers in Marsabit, which is located within the arid land areas, and contains pastoralist communities.

The results for Turkana and Isiolo, the other two counties in the REGAL-IR program area, are similar to those of Marsabit. The results from Marsabit document the heavy reliance on acquiring IYC foods from external sources. The notable exception to households’ almost total reliance on externally sourced foods is milk. However, even in Marsabit, where animals are a primary source of livelihood, a considerable proportion of children receive purchased, as well as home produced, milk. The reason for this pattern is discussed in the next section on seasonality.

Caregivers’ reports about the foods that were fed to their IYC in the 24 hours prior to the interview, and the foods that were eaten by the household over the past seven days, show that nearly all foods came from outside the household and most involved purchase or exchange of food for labor. The sources of purchased foods, in decreasing order of importance, were:

- 1) **Purchased from local village stores, kiosks, and markets**
- 2) **Acquired through food for work programs;**
- 3) **Donations and**
- 4) **Purchased from local farmers.**

The designation “purchased from local stores and markets” does not mean that the foods themselves were locally produced. To the contrary, many of them come from distant sources. Among the food items purchased by the majority of households were: sugar, tea leaves, salt, maize flour, cooking oil, beans, maize and fresh milk, as well as items that are regarded as flavor enhancers, salt, onions, tomatoes and Royco (a commercial spice blend in bouillon cube form). Tomatoes and onions, which are also purchased, are regarded as flavor enhancers, in contrast to cowpeas, cabbage and kales, which are purchased but regarded as vegetable ingredients for stews.

Table 7.1. - Sources of IYC food in Vihiga County

Food/Ingredient	Source		
	Home	Local*	Market/Store
Millet			XX
Mixed grain flour			XX
Maize/maize meal	XX		X
Tea			XX
Irish potatoes	X		X
Green bananas	X	X	
Rice			X
Milk (cow/goat)	X	X	
Kale	XX	X	X
Cowpea leaves	XX		X
Jute mallow	XX		X
Dried sardines			X
Tomatoes	X	X	XX
Onions	X	X	X

Note: The double X indicate that the majority of respondents reported this

Table 7.2. - Sources of IYC food in Kitui County

Food/Ingredient	Source		
	Home	Local*	Market/Store
Primary core			
Millet/mixed grain flour for porridge			X
Milk (pasteurized)			X
Milk (fresh cow/goat)	X	x	x
Irish potatoes			X
Green bananas			X
Rice			X
Secondary core			
Maize/maize meal Ugali	x		X
Beans	x		x
Kale	x	x	X
Cabbage			X
Tea			X
Sugar			X

*This includes relatives, neighbors or other local producer

Table 7.3 - Sources of IYC Foods in Marsabit County

Item	N	Home Produced	Home produced & purchased	Purchased
Milk	43	24	15	4
Maize	35	0	0	30
Beans	33	0	0	32
Sugar	32	0	0	32
Rice	30	0	0	30
Cooking fat	27	3	0	24
Irish potatoes	27	0	0	27
Maize flour	25	0	0	25
Tea leaves	24	0	0	24
Onions	22	0	0	22

Factors That Influence Where Foods Are Acquired

Setting Kenyan food production in an historical and cultural context

Before we look at respondents' views on factors that influence the amount of food they can produce in their fields, it is important to set this topic within the larger context of women's responsibilities in food acquisition. It is essential to begin by recognizing the longstanding emphasis throughout Sub-Saharan Africa on women's roles in assuring the food supply for their families. Historically women have had primary roles in food production, which typically includes activities in planting, tending and harvesting crops and substantial responsibilities in animal care. These activities are

embedded in an even more fundamental idea; namely that women are responsible for feeding their families. This begins with responsibilities in raising food, but it does not end with food production. Responsibility is often broadly interpreted as extending to all aspects of food procurement, whether that is in producing it or buying it.

In many communities throughout Africa, and very clearly in the households in the five counties, the emphasis on women's responsibility for assuring that the family has the food it needs, regardless of its source, means women often need to obtain cash to purchase foods. Thus, in addition to ensuring that purchased food is available in the household, in the current environment in which caregivers are increasingly exposed to new ideas and new knowledge about what to feed their children to ensure healthy growth and development, the responsibility for food purchase decisions includes responsibility to purchase wisely. A respondent in Isiolo explained it as follows:

“According to our culture, women are responsible for feeding the family, so I have the responsibility of knowing what foods to buy for my child and the family.”

In earlier times, when most food was acquired through home production, women's food acquisition activities centered on farming and animal husbandry. Today they still include this component, to the extent it is feasible and compatible with the other strategies women utilize to secure foods to feed their families.

Based on common perceptions of the dichotomy between “rural” and “urban” areas, all of the counties in the study would be regarded as rural; they can be characterized as “agricultural” in contrast to “industrial” in their fundamental economic organization. Historically, throughout the world, growing crops and/or raising animals as a means of acquiring foods for household consumption has been a defining feature of rural populations. However, obtaining food through home production is only one of the sources households in the five counties utilize in their efforts to acquire food. In the following sections we turn our attention to the study results that help to shed light on the balance between home production and food purchase among and between households. Many factors influence where foods for IYC and their families are acquired. Here we focus on three of them: 1) Household characteristics related to food production; 2) Seasonality; and 3) Child age

Factors Related to Household Food Production

In this section we consider how differences among households influence acquisition of foods from household production. These insights are not derived from quantitative analysis in which agricultural productivity or length of time households can rely on home produced food is statistically related to household characteristics. Rather, it reflects the ideas respondents shared with us – their emic perspectives – on the challenges they face in their household food production activities. Two features that respondents stressed were: i) access to productive land and ii) access to water.

i) Access to productive land

In respondents' discussions about food production activities, a common theme was the quantity and quality of land they had available on which to plant crops. Within the samples differences in the amount of land women had access to were apparent in the the basic household socio-demographic information. In addition to quantity, respondents often commented on the importance of characteristics of the plots they worked as a determinant of how much they could produce. Access to water is a particularly important feature that differentiates more favorable from less favorable plots.

ii) Access to water

Water is becoming an increasingly prominent topic of discussion across a wide range of interests, from climate change, equity and social change, to our very survival as a species and our current life ways. Therefore it should not be surprising to find that while characteristics of land were often included in respondents' discussions about their food production activities, nearly all conversations

focused on a highly salient, essential element of food production, namely water. In fact, however, water entered into respondents' discussions' about most of the topics we covered in our examination of infant and young child feeding. In addition to food production, water was spontaneously discussed in connection with food preparation, child health and food safety, women's organization of their time, and household budgets.

As a resource for food production, access to water figured most prominently in women's discussions of seasonality and food insecurity, a topic we take up in the next section. It was also invoked in connection with the amount of food a household can produce. In farming systems that depend on rainfall, and in which there is little, if any irrigation, differences among households in access to the location of natural water sources are important considerations. Some women explained that they are able to produce more food because their fields are located close enough to springs and streams to make extra watering feasible. In some circumstances they are also able to extend the growing season when rain can no longer be counted on.

Seasonality and Food Insecurity

In all households in all of the counties in the FES studies, season of the year is a fundamental determinant of what families, including their infants and young children, are eating. This is hardly a surprising finding because seasonal variability in diet has been a fundamental characteristic of human diets from the earliest evolution of *Homo sapiens* as an omnivorous, hunting-and-gathering species. The absence of marked variations in seasonal diets is a very recent phenomenon, which is characteristic of only a tiny minority of economically privileged households scattered in enclaves throughout the world. In fact, seasonal rhythms and dietary change over the course of the year is a feature of life that is celebrated in religious and artistic cultural expression everywhere. What makes seasonality so significant and so challenging in the communities in our studies is its direct relationship to food insecurity.

We have already discussed the fact that all households are purchasing some food products throughout the year. However, when home produced food is completely unavailable, including even the fruits that are gathered from trees, everything must be purchased. The problem is compounded by the fact that the price of food in local areas rises during the periods when home food supplies have been exhausted and nearly everyone is purchasing all of their food. During the worst periods, obtaining even basic staples to feed family members strains households' marginal financial resources and results in major adjustments to diets. In many families the adjustments result in significant reductions in dietary diversity, including diversity in IYC diets:

(I give)" Maize porridge without milk. They hardly get fruits."

"During the worst time, I give her uji without milk. I put just a little sugar in her uji. Other times her uji has no sugar. Her uji is made of maize meal flour instead of wimbi."

"There is no blueband (margarine) in his uji: it's plain and made of maize meal not any other flour since this is the most available and at a lower cost compared to wimbi flour."

"We change the ingredients: porridge without sugar, little or no fat in vegetables, no tomatoes or onions with the vegetable."

"Sometimes when we have no food completely, she stays on breastmilk only, not eating."

In some households the lack of money to purchase foods not only requires changes in the content of the household diet, it also requires reductions in the frequency of eating and the amounts that are served. These dietary restrictions are particularly borne by women and men, as parents attempt to buffer their children from the worst effects of seasonal food insecurity:

“Children cannot withstand hunger. When they are hungry they disturb people, and hunger in children makes them vulnerable to diseases. They look sickly and weak”

“At times we have to reduce the portions of food that is served for the adults, at times we just take porridge in the morning and at lunch and that helps us preserve some flour for the evening meal.”

“I would rather be the one to sacrifice (go to sleep hungry, miss meals) and suffer, but not my baby.”

“When ... there is no money, we only cook for children and the rest of us sleep hungry. We just persevere because there is nothing we can do.”

The special case of pastoralists

In all of the counties women described the challenges that seasonal changes in water availability have on their ability to maintain household economic well-being. The challenges are not limited to family members. Like human members of the household, animals need water too. Respondents discussed the additional burdens on strained household budgets created by the need to provide water for both household use and for animals.

“During the dry season, there is no pasture for animals (camels and goats) so they have nothing graze on. They produce little or no milk at all. Food is also very expensive and the water pan has also dried up, so we are forced to buy water from the borehole”.

“There is no water for domestic use. It is very costly to obtain water for household use”.

One of the most striking findings in the REGAL-IR FES studies was the significance of seasonality on diets of IYC in pastoralist households. Animal milk plays a critical role in IYC nutrition in these communities (see Chapter 5). Both water and pasture disappear in the dry season. This creates a major crisis for the survival of the animals on which households depend. The only solution, which is the solution that pastoralists have always employed from the beginning of pastoralism as a food system, is to move the herds to places where water and pasture are to be found. Setting aside the issue of global warming and the increasing difficulty of finding pasture and water in arid lands, this seasonal adaptation creates a major crisis for infant and young child feeding. Today many of the pastoralist households in the REGAL -IR program areas do not migrate with the herds. Only the men and older boys leave to find pasture and water. The women and children remain at home. In effect, the primary complementary food of infants and young children – animal milk – are removed when their acquisition resource is no longer available.

Caregiver strategies to cope with food insecurity

Caregivers in the five counties are not passive in the face of food insecurity. They employ a number of different strategies to secure food for their children during periods of food insecurity. These strategies can be classified in two main categories:

- I. Income earning activities
- II. Non-income earning food acquisition strategies

Under the category of income earning activities, we identified the following:

1. Engaging in entrepreneurial activities as a primary or secondary occupation
2. Selling farm produce and milk during periods of agricultural productivity to earn cash that can be used to buy food and to provide a cushion for food purchase in periods when all food must be purchased
3. Engaging in craft activities and small-scale manufacturing

4. Engaging in short-term activities locally to earn money by providing services for neighbors (including gathering firewood, carrying water or helping in fields). Depending on location and other factors, some women travel further to population centers to find casual labor.
5. Participating in “Food for Work” and/or informally organized groups who offer their services

Under the category of non-income earning food acquisition strategies, the following approaches were identified:

1. Receiving money from husbands and fathers to purchase food
2. Receiving credit from local stores to buy food
3. Borrowing food and/or money from relatives and/or neighbors
4. Foraging and hunting
5. Receiving donations from social welfare programmes

iii. Child Age

Another factor that influences the balance between home produced versus purchased foods in IYC diets is child age. However, compared to the factors we discussed above with respect to “where,” child age plays a relatively minor role in the extent to which the sources of foods for IYC are external as contrasted with home produced. On one hand, the special foods for infants, which are regarded as most appropriate in the early months of complementary feeding, are almost entirely from external sources, regardless of county and ethnic group membership. Therefore, one would expect to see a shift toward greater reliance on home production as children get older and are more fully integrated into family foods. The high cost of consistently feeding young IYC with preferred, externally source, IYC cultural core foods means that most infants are already received family foods, albeit modified, before their first birthday.

As IYC get older and become more fully integrated into household diets, caregivers try to give them foods they regard as healthful and growth-promoting. (See Chapters 8 and 9). Many of these foods are externally sourced, so the need for cash to purchase them continues throughout the period of complementary feeding.

Where foods are purchased: Acquisition patterns for food purchase

The exploration of the characteristics of markets and caregivers interactions with food purchasing alternatives was outside the scope of our FES studies. However, some features of their interactions are so central to their management of IYC feeding that they were recurrent themes in virtually all interviews and all sites. We have already stressed the fact that a central feature of IYC feeding in all the counties is the extensive reliance on external markets for preferred IYC foods. Moreover, as we have repeatedly noted, although most of the households in the study are rural, much of their food is acquired from the social environment, not from home production. This fundamental feature means that characteristics of local marketing systems – what foods are available, how they are priced, how prices fluctuate, and the amounts in which they can be purchased, as well as the availability of credit, have profound effects on what households purchase and what foods IYC are given. In other words, by definition, the “private sector” is profoundly related to what happens within households with respect to IYC feeding.

In this section we consider the issue of “where” foods for IYC are purchased. There is a wide range in the types of places that respondents utilize to obtain their purchased IYC foods, but they fall into three main types: i) local kiosks or rooms in people’s homes; ii) intermediate size shops and markets, and iii) large stores and markets in urban centers.

- i) In many small villages there are options within close walking distance, which consist of small, free-standing kiosks or rooms in a private home that has been converted into a minimal store. These highly local purchasing options represent entrepreneurial opportunities for women who themselves travel further to obtain goods and then make them available to their neighbors at a small mark-up.
- ii) The second type of outlet for food purchases, which is utilized by many respondents, is the somewhat larger shops and markets that are found in small towns and larger settlements. These food purchase resources have a greater inventory compared to the smallest local outlets. Generally the owners are local and are not managing sales for a larger company with headquarters in some distant urban area. These stores owners and market sellers are fundamentally important for caregivers because they are the places where women can sometimes obtain credit when they do not have cash. For many women, buying at small stores and markets require vehicle transportation, which itself involves some cost.
- iii) The third category for food purchases is the large stores and markets that are found in major urban centers. Here the prices are often significantly better, particularly if one can buy in larger quantities. Women whose husbands are working in these centers and come home frequently (e.g. on the week-end or every few weeks) obtain some of the food for their IYC from these resources. The husbands purchase the items and bring them back to the household.

Credit – an essential aspect of acquiring purchased foods

Although caregivers buy their foods with cash, and the food acquisition system would be considered a “cash economy,” in reality credit is an essential feature of the acquisition of externally sourced foods, including foods for IYC. This does not mean that the usual acquisition pattern is to obtain the food with credit. Typically women buy in very small quantities, requesting to purchase only as much as they have cash in hand to cover. They forego items they need and continuously make substitutions when they find themselves without the necessary cash.

Credit becomes important in two ways. First, when caregivers are temporarily short of cash but expect to have it within a day or two they will request short-term credit from the shopkeeper. During the period of severe seasonal food insecurity, having a relationship with a shopkeeper who will give them more extended credit sometimes makes the difference between having nothing to eat and eating the minimal diet, with all of the restrictions that characterize this period of the year.

The following examples from respondents in Kitui are illustrative of the types of statements we heard in all of the counties:

“We buy food on credit, then pay later when we have money. I know some people may be forced to work for the shopkeeper in the event that they are unable to pay for the items purchased on credit, but I have not been in that situation because I always try to pay my debts in good time.”

“There are times I obtain food on credit from the shop and make payments at the end of the week. Not always. Sometimes you hope that you will have succeeded within the agreed time but it doesn’t work. You have to delay the payment. Some of them understand, though others don’t. They are angry at you and refuse to assist you the next time you need help.”

Two other respondents, also from Kitui, described a balancing act that requires juggling their activities as entrepreneurs, as thoughtful members of the community, and as mothers who need help to secure food for their own children. Judith is an example of a woman who engages in entrepreneurial activities, gives credit to her neighbors, and also needs it herself:

“Yes, I give a lot of food and other items on credit and that affects my business. As a family we also start getting foodstuffs on credit. Sometimes when things become really tough we may resort to selling family property, like goats, to buy food.”

Similarly Mwendu said :

“I also obtain food on credit from a shop which I pay later depending on the time that we have agreed. If I will not have gotten the money before the set date, I use the money that is meant for buying more stock [for her own small non-food business] to clear my food debt. This troubles me. Then later when I get the money, I restock my business.

In Isiolo respondents said that some shopkeepers allow credit for agreed upon periods of time. Nearly half of the caregivers who obtain food on credit reported that they have credit payment plans whereby they are allowed to pay for food in installments. Credit periods range between one and six weeks. Two caregivers reported settling credit ‘whenever they had money.’ As a last resort when debts are high, women sell domestic animals, such as goats and chicken, to raise money to settle credit accounts.

A striking implication of caregivers’ discussions of the importance of credit for securing household diet, is the significance of the social ties, on one hand, and the constraints on where women can buy food, on the other. Thus, establishing and maintaining relationships that give caregivers access to credit is, for most households, an essential element of managing food acquisition,

Where food is fed to IYC

As noted in the introduction to this chapter, one aspect of “where” with respect to IYC feeding is the physical location in which children are fed. In some cultures infants and young children accompany their mothers throughout the day. They are taken to the fields when women do farm work; they are carried along when women collect fuel and firewood, and when they go to markets to buy food. In some societies they are taken along when women engage in income earning activities. However, the results from the FES studies suggest that, for the most part, this is not the case in the five counties. Only young babies are in the constant company of their mothers.

Once infants are routinely receiving foods in addition to breastmilk, acts of feeding them can be more readily separated from the presence of their mothers. The use of animal milks, including the ubiquitous use of tea and milk tea, expedite feeding IYC when mothers are absent. In the previous chapter we noted the emphasis women placed on preparing and leaving foods to be fed to IYC by others. We also discussed how the “where” and “when” of feeding IYC is manifest with respect to food storage. Caregivers take great pains to store foods for their IYC in a manner that not only saves time when they themselves are going to give the food, but that also facilitates feeding IYC when they are not at home.

When: Patterns of feeding over the course of the day

In this section we take up the matter of “when” in relation to feeding over the course of the day. WHO recommendations on the number of times per day infants and young children should be fed change with child age. In the period from 6-8 months, infants should receive complementary foods 2 to 3 times a day. For the period 9-11 months, this increases to 3-4 times a day, where it remains for the period from 12-23 months.

Within counties we found substantial variation among households in the number of times a day children are fed, as well as variation from county to county. There was also variation between counties with respect to this indicator of adequacy of IYC practice:

- Marsabit:** *The number of times complementary foods were fed to IYC in the Marsabit sample ranged from a minimum of two to a maximum of five.*
- Turkana:** *The number of times that complementary foods were fed to IYC in the Turkana sample ranged from a minimum of one to a maximum of three across the entire age range from 6 to 23 months.*
- Isiolo:** *The number of times that complementary foods were fed to IYC in the Isiolo sample ranged from a minimum of one to a maximum of four solid and semi solid foods, excluding milk.*
- Vihiga:** *The number of times complementary foods were fed to IYC in the Vihiga sample ranged from a minimum of three to a maximum of eight.*
- Kitui:** *The number of times complementary foods were fed to IYC in the Kitui sample ranged from a minimum of one to a maximum of seven.*

Analysis of the twenty four hour dietary recall records provided by caregivers show that, for the most part, infants and young children in Isiolo and Turkana did not receive the recommended number of feeds relative to the WHO guidelines. The frequency of feeding children in Marsabit, Vihiga, and Kitui was, on average, close to or in line with WHO recommendations. However, across all the counties, there was little relationship between child age and feeding frequency. In view of the fact that the majority of children were also receiving breastmilk, one should be cautious about drawing nutritional conclusions from these behavioral data. Of much greater significance from the perspective of “when” patterns, is the profound stresses on IYC and household nutrition of food insecurity that is produced by seasonal variations in food availability and economic instability in all five counties.

CHAPTER EIGHT

Exploring Infant and Young Child Feeding from the Perspective of Caregiving

Introduction

This chapter is concerned primarily with issues that, until recently, have received less attention from nutrition researchers than have many of the other topics we take up in this monograph. With the exception of “who” controls household decisions about the acquisition of foods for IYC, questions related to “who” with respect to IYC feeding have generally been less salient and less systematically investigated by nutrition and public health scientists in their efforts to understand the determinants of IYC nutrition. However, with the growing interest in nutrition and public health to expand nutrition education activities and behavior change communication to include household members, in addition to mothers, better understanding of family dynamics of childcare, particularly of fathers and grandmothers is increasingly receiving attention. The roles, activities and values of household members, as well as those of relatives who live outside the household, are direct manifestations of “who” in infant and young child feeding.

The topic of “who” is actively engaged in feeding children, as contrasted with who makes food acquisition decisions, has taken on new meaning with the pioneering work of developmental psychologists and nutritional anthropologists. Their studies are aimed at understanding the dynamic interactions between caregivers and children during feeding and around food. This research is providing critical insights into the development of obesity, feeding problems and poor acceptance of food, as well as the persistence of under-nutrition and child development delays in low-income households. Research on these important topics has employed a range of methodological strategies from randomized controlled trials to epidemiological assessments to evaluations of program interventions.

An important avenue of research involves studies that focus attention on caregivers’ physical and mental health in relation to nutrition outcomes in children. The relationships of maternal depression and child feeding, including responses to nutrition intervention programs are being investigated with the ultimate goal of improving both maternal and child health and nutrition. These concerns fall squarely within the purview of “who” is feeding and caring for infants and young children.

“Household composition is of major importance because it is intimately related to the issue of who can share child feeding and care responsibilities.”

Apart from the foregoing topics, another aspect of “who” concerns how households organize caregiving for their infants and young children. Here a fundamental determinant is household composition. This is particularly important in rural environments where mothers usually do not have access to childcare facilities. It is important in poor populations generally, even in urban areas, where financial resources to “purchase” alternative care are lacking. Household composition is of major importance because it is intimately related to the issue of who can share child feeding and care responsibilities. This is especially critical in the frequent circumstances in which the mother cannot be with the child all of the time. When this is the case, the “who” question becomes: “who can the primary caregiver count on?” That question goes beyond arrangements for childcare to include issues of whom she can rely on for social and emotional, as well as financial and other functional support.

With respect to social and emotional support, we note that in order to keep the FES studies within manageable limits, our research was limited to “who” from the perspective of the respondents themselves. However, viewing support through the lens of caregivers it becomes clear how important partner’s roles are and how the strength of kinship ties and obligations outside the immediate household affect child feeding.

Theoretical Perspective

From a theoretical perspective this chapter is concerned primarily with two domains of the ecological model – household organization and culture. Some aspects of household organization and infant and young child nutrition have been extensively studied for decades. Particularly notable are the massive efforts that have been invested in studying the links between household economic status (an aspect of household organization) and child nutrition. In the cultural-ecological model the component we refer to as “Household Organization” includes household economic status and the main elements that economic status is comprised of, namely income, access to income producing resources, and access to food producing resources. These are classic “variables” or “factors” in analyses that link household economic conditions to infant and young child diet and nutrition, and have been extensively studied – as indeed they should be given the primacy of economic factors for nutrition and food security.

Household division of labor, as it relates to income generation and agricultural productivity, has also been an important topic of nutrition research that aims to understand how economic factors relate to nutrition. Some other elements of household division of labor, which go beyond income generation, per se, and which concern aspects of childcare, have also received extensive examination; two areas – maternal employment and child caretaking by children – have been particularly salient. Maternal employment outside the home, and its consequences for breastfeeding, have been a subject of intense concern, research and social action for many years. Also, the consequences, for older children, of delegating childcare responsibilities to siblings is receiving both research attention and advocacy action.

The conceptual model of the cultural-ecological model that provides the underpinning for the FES is centered on the household as the unit within which infant and young child nutritional status resides. Other iterations of cultural-ecological models can be constructed aimed at understanding and encompassing larger social units (e.g. villages, communities, regions, counties, etc.) An exclusively household focus inevitably creates artificial boundaries with respect to the organization of feeding and care of infants and young children. The now famous phrase, “it takes a village,” provides an important reminder that households are embedded in larger social and cultural units that play fundamental roles in child nutrition. Thus, for a more complete assessment it is essential to understand macrolevel-microlevel linkages, and to complement the data and analyses from these household- level studies with studies of the larger systems in which households function.

The influence of culture on infant and young child caregiving – of the beliefs, expectations and social commitments that follow from them – have deep roots in historical-cultural traditions. Differences between ethnic groups in values and expectations, which are evident in every continent and every country, reflect complex sets of historical and ecological circumstances. As human groups organize life to secure survival for themselves and their offspring, the accumulated legacies of older values

remain evident, even as “value conflict” between older and newer values occurs. There is a rich social science literature on value conflicts, which are inevitable, particularly when social change is occurring rapidly, as is increasingly the case all over the world, including Kenya. Multiple examples of continuity of cultural values and expectations, as well as value conflict, emerged from the discussions with respondents in all five counties. These are particularly powerful with respect to caregiving and food security. Food security, per se, was not an overt focus in the research plan for the five counties, but the insights that emerged from the various topic-focused modules reveal how women manage the challenges of caregiving in environments of food insecurity. The examples reinforce the utility of ethnography as a research approach, especially because they give respondents the opportunity to give voice to their concerns, experiences, needs and desires. Consequently the research revealed essential issues that were not necessarily anticipated or understood to be important from the perspective of the investigators.

Methods

The data that are presented in this chapter are drawn from a number of the modules that were used to interview key informants and caregiver-respondents. As with the other chapters in the monograph, they are derived mainly from discussions that used an “open-ended” questioning mode, based on guiding questions. A topic was initiated with a specific lead-in question or set of questions and was then explored with probes requesting more discussion. Following the procedures that were employed for all of the modules, an audio recording of the exchanges associated with the data we utilize in this chapter was transcribed and translated in order to create a “text.” Before leaving the field the transcripts were checked for ambiguity or potential inaccuracies, and interviewers returned to respondents when necessary to correct or clarify. The data were then analyzed using text analysis techniques. The text was coded for themes, facilitated by the use of the Atlas.ti software program. Text analysis is an iterative process and continued throughout the period of analysis and report writing.

The household composition data were obtained with a standardized module, in which a matrix was completed, initiated by the question “Who lives here in this household?” The interviewer proceeded through the matrix, asking questions on age, sex and occupation for each individual who was identified as living in the household. The question on occupation provided the opportunity to ask caregivers how many hours a week they worked in activities other than domestic and childcare activities. From these data we can estimate the number of hours they were not available to engage in direct care of their infants and young children.

Household composition: the bedrock for organizing caregiving

In this section we begin with household composition. Household composition establishes the basic parameters within which caregiving of infants and young children is organized. Table 8.1 shows the large range in household composition within counties. This variability is evident in all five counties. In each sample we see that at one extreme of size and complexity are the single-parent households that consist of a woman and her dependent children. At the other extreme are complex, extended family households that contain a number of adults, often an older couple, their grown children and their spouses and children, unmarried and widowed siblings, sometimes also with children. Between these two types, we find nuclear families (a married couple and their children) as well as various other organizational arrangements.

An important feature of household composition, which is not reflected in the household composition tables, is that in many nuclear and extended families, adult men are not living routinely in the household. From the perspective of the respondents these husbands or partners are household members even when they are rarely present. In all of the counties some of the male members of the household are present on a daily basis. However, many others are working away from home, sometimes at considerable distance. Some men return weekly, some return monthly, and some come back much less frequently. Many of them are strongly committed to the welfare of their families and are working to support the household from a distance. However, the extent to which fathers/

husbands who work away from home remain active and committed members of the family is also highly variable. Thus, household composition, alone, does not provide a reliable picture of the functional household structure.

Table 8.1 - Comparison of distribution of selected demographic characteristics of caregivers from all counties

Characteristics	Proportion of respondents (%)				
	Turkana	Isiolo	Marsabit	Vihiga	Kitui
Age of index child (months)					
6 – 8	25	25	25	19	25
9 – 12	25	25	22	19	22
13 – 18	25	23	22	31	25
19 – 24	25	27	30	31	28
Age of respondents (years)					
<20	10	6	3	3	3
20-29	52	58	49	59	50
30-39	31	33	37	28	44
>40	6	2	11	9	3
Educational level of respondents					
None	81	56	86	6	-
Standard 1-4	8	8	6	9	6
Standard 5-8	6	27	6	50	59
Incomplete secondary education	0	4	0	-	13
Complete secondary education	4	4	3	25	13
Tertiary	0	0	0	9	9
Total household size					
2	0	0	0	3	0
4-Mar	19	19	31	16	22
6-May	48	25	36	34	28
8-Jul	19	35	25	25	34
≥9	15	21	8	22	16
Number of children of respondent					
1	13	6	-	25	16
3-Feb	33	23	9	34	44
5-Apr	39	40	41	22	22
7-Jun	13	25	44	13	16
> 7	2	6	6	-	3
Number of children under 6 years					
1	31	21	42	25	31
2	33	54	52	50	44
3	23	23	6	22	25
4	-	2	-	3	-
5	-	-	-	-	-
	6	-	-	-	-

Mothers' work activities in addition to caregiving

Across all five counties, one of the most striking findings is the extensiveness of women's work activities in addition to domestic tasks and childcare. Just as the idea of the "self-sufficient" peasant household, living from its labors on the land, is a myth, the vision of a woman who devotes all of her time to taking care of her children, cooking and cleaning and otherwise engaging in domestic maintenance is equally a myth in the areas where our research was conducted.

In previous chapters we discussed women's activities in food production and cultural expectations about their responsibilities for obtaining food for their families. Although part of this responsibility is met through farming and animal keeping, much of it is met through income earning activities. As we have already seen, cash to buy food is an essential component of food acquisition, even without considering other household needs for cash.

For instance, almost all (46) the caregivers interviewed in Turkana County identified themselves as “doing business.” Of the 46 caregivers, a total of 40 reported “business” alone, while the remaining 6 are combining business and other activities (Table 8.2).

Table 8.2 - Caregivers’ occupation and hours worked per week (Vihiga, Kitui and Turkana)

Occupation	Number	Hours worked/week (Average)	Hours worked/week (Min. – Max.)
Vihiga			
House wife	17	7.60 ± 12.42	
Formal employment	2	35.0 ± 21.21	
Business	5	24.6 ± 17.02	
Farmer	1	12	
Casual labour	5	23.4 ± 8.9	
Kitui			
House wife	11	6.1	0.5 – 14 .0
Formal employment	0	-	-
Business	7	19.0	9.0 – 36.0
Farmer	3	29.0	15.0 – 36.0
Casual labour	7	20.5	4.0 – 37.0
Unemployed	4	5.8	0.5 – 14.0
Turkana			
Business	40	29.9	6.0 – 60.0
Business and others	6	40.5	15.0 – 84.0
Casual labour	1	9.0	-
Farmer	1	42.0	-

In Turkana no respondent identified herself as a housewife by occupation. In Isiolo, more than half (26) of the caregivers identified themselves as businesswomen. This designation was followed by self identification as “charcoal burner.” As in Turkana, no respondent in Isiolo identified herself as a housewife, in contrast to Marsabit where almost all the caregivers 31 (91%) were “housewives.” Other occupations mentioned by caregivers in Marsabit were: business (1 respondent), casual labour (1) and student (1). In Kitui Eleven of the 32 women identified themselves as housewives; 7 said they were engaged in business and 7 gave their occupation as “casual labor”.

The answers women gave to the question about their own occupation require some interpretation. While some women self-identified as farmers or entrepreneurs, others labeled themselves as housewives, even when they spent a substantial amount of time on income-earning activities. Therefore the data are not a good indication of the amount of time women have available for non-childcare and domestic activities. They reflect cultural identities. We also think that for at least some respondents, the designation of “occupation” with respect to their own identity was a foreign concept, although no one had difficulty in labeling the occupation of their male partners. Rather than spending precious interview time probing their initial answer, some interviewers simply noted the respondent’s answer. In the case of women who had well-defined income-earning activities, particularly women who had small businesses or, in a few cases, salaried jobs, there was much less ambiguity about their “occupation.” On the other hand information on the many ways in which women engaged in income-earning activities emerged over the course of the interview.

Husbands' roles and the struggle women have when fathers are not active

In previous chapters we discussed the long standing cultural roots of women's responsibilities for providing food for their families. This feature of social organization should not be interpreted to mean that men have no culturally derived responsibilities for the welfare of their families. That would be a serious misinterpretation and a grave distortion of the complex forces in contemporary family dynamics that Kenyan parents face today. Many families are able to establish a household economy that does not require men to be absent from home; others are in circumstances in which men are working outside the community but at short distances that are not disruptive of family life. However, when these conditions do not exist, the kinds of adjustments that need to be made require longer-term absences of men from their families. Such absences can sometimes lead to situations in which household maintenance and establishing a supportive environment for child growth child is no longer a shared responsibility.

In place of a household economy in which, conceptually, money that is earned by men outside the community is routinely returned to the household, minus men's costs in earning it, financial support, when it occurs, takes on the character of remittances. The Oxford New English Dictionary defines a remittance as: "a sum of money sent, especially by mail, in payment for goods or services or as a gift." Apart from how it might be used to buy food, supporting the household to meet its cash needs (for its multiple requirements for cash) male contributions lose their fundamental role. In short, women become de facto the head of single parent households.

At the extreme of de facto abandonment the discussions with respondents produced statements of despair, such as the following:

"Sometimes I end up with migraines. I spend sleepless nights thinking of the way forward. I sometimes wonder whether I should keep by my husband's side or divorce and go away from here to look for a job so that I can support my child on my own. I feel extremely bad. Sometimes, I re-think my decision about marriage did I make a wrong decision getting married without having any reliable source of income?"

At the other end of the continuum are men who are committed to their families and to supporting them, regardless of where they are living. For example, the following quote illustrates the complex set of activities that men use to support food for their families when they are away:

"My brother in-law gives me 2 pumpkins a week. My husband works away from home. He sends me food through neighbours, my mother and father in-law or through his workmates. Whenever I get food from my brother-in-law I do not pay for them. My husband shows him appreciation in kind when he comes home. When my husband comes he brings them sugar; other times he gives them 200 sh. This is done once a month."

Other expressions of support, even in difficult circumstances are contained in the following quotes:

"Though he may not be here everyday, when he is around he supports me in feeding the child. He also provides the food we feed the child."

"I usually discuss with my husband the way forward. Some days we sleep hungry; other times we find something to eat. That is life for us."

Support from kin, especially mothers and mothers in law

The role of close kin living outside the household in taking care of IYC when mothers are engaged in activities away from their children did not emerge in the direct question on "who feeds (index child)" as we had expected it would. The normative and nearly universal response to the question "who feeds" was "I do." The ubiquity of this response reflects the cultural expectation in all the counties that mothers feed their infants and young children. However, after some thought, some women

were explicit in naming their mothers or mothers in law as providing help with feeding, as in the following:

“Many times my mother-in-law helps me in feeding the child. I get a lot of support from her.”

None of the “working mothers” who were engaged in income-earning activities on a regular daily basis used the question on who feeds the child to describe their child arrangements. On the other hand probing about the organization of child care suggests this was not a sensitive issue. Simply that it was not directly salient with respect to “who feeds.” The following exchange from an interview in Vihiga illustrates the importance of close older generation female kin in caregiving:

Interviewer: “I would like to know from you how you organize childcare for _____ (child) when you are away for work?”

Respondent: “I leave my child with my mother-in-law to take care of her when I am away.”

Interviewer: “Why your mother-in-law?”

Respondent: “She takes good care of her. She gives my baby the warmth almost equivalent to what I would give. I can never leave my baby with a neighbor

We also get a small window on “who” with respect to child feeding from the questions on food preparation and storage. The reader will recall from previous chapters that several women commented that their mothers in law or mothers understood how to prepare foods for their child, so it wasn't necessary for them to do so when they were not going to be a home when the child needed to be fed.

The relevant discussions on support for child care in the context of discussions about food storage more ambiguous. Often the purpose of storing prepared foods was to keep the items hot so they would be quickly available to give when the child was hungry. Similarly, another motivation for preparing more food than the child would eat at a single sitting was to avoid the need to light a fire to make a new preparation. On the other hand, food storage was also practiced in order to ensure there would be food available to feed the IYC when the mother was away.

The clearest evidence of the importance of social support from kin (mothers, mothers-in-law and other family members) emerged in the discussions about food insecurity and what respondents do when they don't have food or money to buy food. The following quotes are illustrative:

Mothers turn to relatives for help as seen in this quote from a mother in Turkana:

“I go looking for food from my people. I visit my relatives looking for one that has food to assist me feed the baby and our family”.

A mother of 5 children, said:

“Sometimes I go to my mother-in-law and say to her: ‘Mother, give me some maize flour so I can cook porridge for your grandchildren. Then I cook for them, and they eat it for the day, before I can get something else for them to eat by the end of the day.’”

Assistance from own parents as captured in the following quote:

When we have no food, I go to my parents, who give me money or a goat that we sell to buy food”.

Help from husband's relatives, as well as from the husband who is working away, is reflected in the following quote:

“Relatives help out. My mother-in-law and my brother-in-law's wife give me money to buy food. Sometimes my husband has to dig deeper into his pocket and send me money to buy food

for the children. We always find a way out; none of us sleeps hungry because of lack of money or lack of food.”

A respondent described getting help from her own parents, as follows:

“When times are hard I even have to ask for food from my parents and relatives. They help by bringing or giving me food, like millet flour to make porridge. Borrowing food is not the best way to survive though because it can never be adequate. I can’t keep on borrowing or asking for food from people.”

Relatives do not always have the means to assist, as in this example:

“When I don’t have money I ask my mother, and she tells me: ‘My child, what can I do? Even me, I don’t have much in the house.’

The extent to which caregivers’ male 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 mentioned by a number of respondents. It is apparent that women without partners or whose husbands live elsewhere, and women who cannot look to their husbands for support face much greater uncertainty with respect to food acquisition and greater food insecurity, especially during the difficult months of the year.

Moreover, the presence of caregivers’ mothers or mothers-in-law, either in the house itself or resident nearby is considered vital social support by some mothers in Vihiga as it makes it possible to share feeding and supervision. However, not all women have this luxury and those living in the nuclear family households often have to rely on alternative care from other children, some of whom are themselves young enough to require alternate care. When babies get older, these alternative caregivers play a significant role in permitting mothers to work outside the home and bring critical economic resources into the household.

In both Vihiga and Kitui, gifts of food from relatives especially during food scarce times was not a common theme.

Based on the data in the narratives related to food acquisition, it appears that, in both Vihiga and Kitui routine food acquisition strategies do not rely heavily on foods that are produced by relatives. The exception that emerged in Kitui however, is the practice of relatives, especially mothers-in-law allowing mothers with young children to milk their goats/cows without paying for the milk.

Social support from the larger community

Social support from governmental and non-governmental programs in the REGAL-IRStudy Areas

Throughout the REGAL-IR study areas, there is a diversity of food support programs for households in general and for IYC in particular. Similarly, in Vihiga and Kitui there are also programs that are available to some households. A mapping of these resources and the distribution of access to them was outside the scope of this report. However, there are two points that need to be made with respect to this topic:

- i) Respondents did not generally volunteer information about social support programs that help them to acquire food, and information about accessing these resources usually only emerged in connection with their discussions about what they do to obtain money to buy food. In those discussions various forms of “Food for Work” opportunities were occasionally spontaneously

volunteered. Thus, what little information emerged about the importance of social programs was the result of direct questioning. In every site we asked respondents explicitly about participation in social programs to support food acquisition in the exploration of food acquisition strategies.

- ii) In all of the sites, respondents tended to express ambivalence about the social support programs, including concerns about unequal and ambiguous rules on access. Caregivers were particularly articulate about their concerns related to supplementary feeding programs that are tied to eligibility related to child nutritional status. Caregivers' unhappiness about supplementary feeding programs emerged spontaneously rather than through direct questioning.

In discussions about "healthy foods" in the REGAL -IR sites, several mothers said that they want to give their infants foods that help them to grow strong so that the child would not be admitted to a supplementary feeding program. Women felt that having a child singled out for a supplementary feeding programme (SFP) is a reflection of their failure as a parent to provide good food. For example, the following discussion with a caregiver in Turkana is illustrative:

Respondent: ***"Adding meat to child's food will make him strong so that when I take him for the weight monitoring at the clinic, he will not be enrolled in the supplementary feeding program"***

Interviewer: ***"What is the problem if the child is enrolled in SFP?"***

Respondent: ***"I don't want my child to be given that porridge. It is embarrassing because it will show I have failed as a woman. It will show that I am very poor."***

Social support from governmental and non-governmental programs in Kitui and Vihiga

In Vihiga, nearly all respondents appeared to be unaware of social support programs. Only two respondents mentioned that they had heard of programs providing orphans and widows with food. These two did not have any further information on these programs. In Kitui on the other hand, some caregivers obtain social support in food acquisition by participating in "Food for Work" programs, as seen in the quotes below.

"I go for katulu [food for work] and other times I work for people. Then I am given food that is equivalent to the work done."

"We used to open up roads (clear bushes, and open roads along the road) grading and repairing roads. Also work in shambas. Then we are given food, such as maize and rice. The food we are given lasts about 3 months or less. I was a beneficiary in 2011 but for now I am not in the programme."

Social support is also obtained from the government during periods of food shortage but also otherwise targets the vulnerable as seen in the quotes below:

"During the worst times like now, the government gives relief food mostly maize and beans to all the families who want food. Even today we are getting maize and beans. I send my mother to get my supplies."

"Relief food from the chief - people are given maize, oil and beans on a monthly basis. Since I am not a beneficiary I do not know much about these. The programmes target the needy, widows, orphaned families, expectant mothers and the elderly."

Unfortunately, most respondents in Kitui feel aggrieved by the manner in which government targets those it deems as in greatest need of relief food, as articulated in the following quote:

"I would like the government to spread this support to other households which are not being covered now and especially during the dry spell. Because it is not only the vulnerable who suffer, others seem to be okay, yet they suffer a lot."

The emotional costs of food insecurity

Interviews with caregivers revealed the emotional stress that mothers experience when they are unable to provide the type of foods they know are good for health and growth of their children. The deep frustration emanating from this was evident from responses of caregivers in all of the counties. The fact that the challenges are, at least to some extent, predictable, because they are tied to the conditions and effects of seasonality does not make them easier to cope with, but it has probably helped women to develop a repertoire of strategies. Although caregivers possess a repertoire of coping strategies in the face of challenges that curtail access to food, this does not necessarily reduce the stress that chronic food insecurity creates. In this section we present examples of the emotional costs of food insecurity that are reflected in the narratives. The comments were elicited during the course of the interviews through various follow-up questions that were designed to encourage respondents to express their feelings. Sometimes the follow-up question was direct, as in the following example:

Interviewer: *"You mentioned that during the worst times, you are forced to do away with some foods because of lack of money. How does this make you feel?"*

Often, however, the follow-up question was a more general encouragement to the respondent to express her views and feelings, as in the following exchange:

Interviewer: *Do you ever have a time when you don't have enough food for the family?*

Mary: *I would like a clarification from you because I am not sure that I got it. Do you mean when food is less or when there is no food at all for this family?*

Interviewer: *Yes you have understood it well, it could mean any of them, I won't mind hearing about your story.*

Below, we present lengthier quotes from the transcripts to provide the reader with more contexts about the caregivers' expressions of emotional stress.

Sarah: *"I feel bad and am lamenting...I keep wondering what will happen. I feel like moving away from this house."*

Interviewer: *"Please go on."*

Sarah: *"Other times I keep asking, If only I were at work, I would not be suffering like this. I actually regret having left my job. If only I didn't listen to my brother, things would be different."*

Interviewer: *"From what you have told me, I can see that you regret leaving your job. If you don't mind I would like to understand what happened that made you terminate your job."*

Sarah: *"Initially I was married and employed in Mombasa where we were making clothes for sale. My husband died due to sickness and this made life difficult for me and my children because the little pay was not enough to sustain the family. His relatives did not give me any support. They chased me away and I had to struggle with the children alone. A time came when my mother (Maternal) got sick. My brother advised me to come stay with my mother since she needed some help. I followed foolishly and terminated my job to come home. My mother later passed away. Since I had already resigned, I couldn't get back to my previous job. It was also not easy to find other job there. Coming back here didn't help me either in terms of dress making business; there is no business here." Sarah is silent for some time and wipes tears from her eyes as she says: "If only I would turn back the clock. Anyway, life continues."*

Like the previous respondent, the following quote also illustrates the way in which complex relationships within the household affect caregivers' ability to manage food acquisition within a cultural context that can put them at a serious disadvantage and restrict their ability to pursue their goals:

Christine: It's very painful not to be able to feed your children. Sometimes I sit down and cry because I look at my unhappy children sitting around me, yet I can't give them anything. Children do not have school fees and there is no food. I feel sad. No matter how much we work to get money we never have enough.

My mother-in-law made the matter worse; she got my husband a second wife. Before my husband married a second wife we were okay. We had a lot of wealth and we were comfortable.

My mother in-law forced this woman on my husband. She wanted me to go away from here but I refused, and the chief and my brother had to step in to solve the case. Sometime back I tried committing suicide when things were out of hand. When it failed I decided not to kill myself. I wanted to kill myself because I had no money and food to feed my children. Imagine leaving your husband when you have 11 children, where do you take them? My husband got me out of primary school, I was hoping he would take care of me, but he does the opposite. Sometimes he works and he does not bring anything home. He goes to the other woman, yet we sleep hungry. I could not take the pain anymore.

My brother and the chief helped solve the problem. So I am here to stay and have to bear with the situation.

Several of the respondents described the effects of emotional stress on their physical health. The following respondent was particularly articulate, and in her comments we also see the importance of social support from friends:

Interviewer: *How do you feel when you lack enough food?*

Nduku: *"I feel very bad and I have lots of pain in my heart. I get stressed."*

Interviewer: *"You mentioned that you get stressed. How do you know you have stress?"*

Nduku: *"My head aches because of thinking a lot. I keep worrying because I do not have food and I do not know where to seek help. I think, yet I do not know what to do. Sometimes the headaches and the body feels weak and sick. Other people develop high blood pressure and ulcers. At one point I visited the hospital and the doctors told me I was developing ulcers and high blood pressure, I was advised to stop worrying about my situation. They even told me not to eat spicy food. I am glad I have recovered over time. The doctors made it clear that I will develop stress if I can't stop thinking."*

Interviewer: *"Is there anyone who helps you deal with this problem?"*

Nduku: *"Yes, my friends' advise me on how to deal with the problem. They give me support. They keep telling me I am not the only one with this problem. They give me spiritual support, guide me and edify my soul. They always encourage me that God is there for me, and some day the situation will change and blessings will come my way. God will open ways for me. Friends guide and counsel you. They tell you words that encourage you."*

Interviewer: *"Is there anyone else who helps out?"*

Nduku: *"Some friends give you food when you tell them you have nothing to feed your child. This year it has happened frequently. I have received food donations several times. But if you do not work hard you will keep depending on others. I do not like relying on donations, so I prefer to ask someone to give me a job instead of asking for favors from people so that I do not become over-dependent on others."*

Situations force you to be a perpetual borrower. You borrow food on some days of the week then you leave two or three days to pass then you go back to the same household to ask for food. This is sad, yet you have to do it because you do not want people to suffer."

Mutea, the respondent in the following quote, describes her unhappiness that her husband is not able to help:

Mutea: I feel bad about my situation. I feel sad. I sometimes even talk to myself while walking on the road. I keep asking myself questions on how I will get food for my family; I worry about finding food for my family.

Interviewer: *“Is there anyone who helps out?”*

Mutea: “Though my husband helps out, sometimes when I ask him for money to buy food he says he does not have it. This makes me feel worse. I get so annoyed. Since there is nothing I can do I just sit there and watch. You know I have children I cannot run away and go back to my family home. I know well that going back to our home won’t help. Who will provide for my children? When the situation becomes worse I cannot ask for help from my father, he also has his own problems. The only solution is to stay around and take care of my children. I usually discuss with my husband the way forward. Other days we sleep hungry; other times we find something to eat. That is life for us.”

The role of religious faith in mediating the emotional costs of food insecurity was a theme in the discussions with some of the caregivers. The following quotes are examples:

“I feel very bad when I think about my situation. I usually pray to God for help. I always pray that God may provide for us. Whenever I pray he answers me. He answers in many ways. Sometimes he helps me get more customers to plait. This is how I get extra money. I also get casual jobs. I do hope for the best in my life. I hope my husband can get a job so that our financial situation can improve, it is not easy to go through tough times but I am glad all is well.”

“When I can give Caroline wimbiuji, with milk and sugar, I am happy. I am at peace and I thank God for his favor. I can afford a smile.”

“I am happy because God has enabled me to feed the child with good food.”

Finally, we conclude this section with the role of nutrition and health concerns, which are a major source of stress for nutritionally aware mothers. For example, one caregiver said:

“I feel bad because giving the child these foods may affect how the child grows. For example, they might take longer to walk or to talk than other children of this age, and you might not know whether there are also bad things happening to their bodies. [In the best season] I feel happy because the baby is doing well. The child is eating food to give her energy. Thus she can gain weight and grow well.”

Another women explained: “I feel bad because I know my children are not growing well. These foods add nothing to the body.”

The experiences described above capture the unintended consequences for mental health of better and improved knowledge on what foods are good for their children when women do not have the means to give them a good diet. The emotional pain this causes is explicit in these narratives. The deep frustration borne out of lack of means to act to change this situation is palpable. While numerous studies have pointed out the role of inadequate access to food as an important pathway to poor diets, this study through deep probing highlights a second consequence, the impact of this on maternal mental and emotional health.

To conclude: Identifying and initiating interventions to address the issues that are raised in this chapter need to be seriously considered as part of efforts to improve the welfare of children and their mothers.

CHAPTER

NINE

Exploring Caregivers' Perspectives on Key Concepts Related to Infant and Young Child Feeding

Introduction

This chapter is devoted to an exploration of the meanings caregivers hold with respect to five key concepts that are relevant for understanding infant feeding behaviors. The concepts are: i) cultural beliefs and knowledge concerning the “healthiness” of IYC foods; ii) cultural perceptions about the financial costs of foods for IYC; iii) cultural perceptions about IYC acceptance of foods during the period of complementary feeding; iv) views about the accessibility of foods that are given to IYC; and v) Perceptions about the convenience or level of ease associated with preparing and feeding IYC foods. In this, and the subsequent chapter, these concepts are referred to: as i) healthiness; ii) cost, iii) child acceptance; iv) ease of access; and v) convenience.

Several of the modules in the Focused Ethnographic Study for Infant and Young Child Feeding are designed to reveal aspects of the domain in the cultural-ecological model referred to under the rubric of “culture.” Investigation of IYC caregivers’ perceptions related to the five concepts is part of this larger exploration. The rationale for building them into the study is discussed in the next section on Theoretical Perspective. The purpose of the questions in the module, whose findings are presented in this chapter were: (1) to understand what the concepts connoted from the perspectives of caregivers and (2) to prepare respondents for the mapping exercise in the subsequent module, in which they were asked to rate specific foods in relation to each of the concepts.

Theoretical Perspective

Epidemiological and social science investigations have produced impressive bodies of literature on the factors that affect what infants are fed. As noted in the introduction to the monograph, these factors can be organized into broad domains that reflect fundamental features of the organization of human societies. As a means of organizing and structuring research to inform interventions, we find it helpful to use the cultural-ecological framework, which identifies domains that have been labeled “physical environment,” “technology,” “social organization,” “social environment” and “culture.” A key feature of the

“With the increasing interest in women’s time, issues of “convenience” and “ease of access” are specific manifestations of variables that may be measured more broadly.”

culture-ecological model is the recognition that “determinants” rarely reside exclusively within any one domain, but are usually produced by multiple interactions among domains. Thus, locating a particular direction of inquiry in a single domain is essentially a heuristic decision.

As the box labeled “culture” refers to those aspects of human experience and functioning that involve ideas - values, knowledge, beliefs, and motivations - we classify the materials we present in this chapter under the heading of “ culture.”

Clearly our predetermined focus on the five concepts --

- i) healthiness;
- ii) cost,
- iii) child acceptance;
- iv) ease of access; and
- v) convenience - represent the imposition of an etic framework on our investigation of this aspect of infant feeding.

We deliberately asked respondents their views about them and did not wait for them to surface (or possibly not surface) in the interviews (Table 9.1). We decided to examine them, specifically chose these concepts because they have emerged again and again in research on nutrition and feeding as issues that affect caregivers’ behaviors. They are found so widely that they may be essentially universal.

Table 9.1 : Food Rating

Food Rating	Value Dimension	Rating				
		5 /☺ /+	4	3	2	1/☹ /-
Health	Healthiness	Most healthy				Least Healthy
Cost	Cost	Most important				Least important
Child acceptance	Child acceptance (tasty, well cooked)	Most tasty/ Well cooked				Least tasty/ least well cooked
Convenience	Ease of feeding	Easiest to feed child				Most difficult to feed child
	Ease of preparation	Easiest to prepare				Most difficult to prepare
Acquisition	Ease of acquisition	Easiest access				Most difficult to access
Influence of others	Influence by husband	Most influence				Least influence
	Influence by mother in law	Most influence				Least influence

However, more systematic research is required before such a conclusion could be reached.

We do not suggest that these concepts are the only concepts that matter to caregivers and are the only important “drivers” of food selection or food choice behavior, or that they are even the most important from the perspective of cultural determinants of what IYC are fed. Moreover, in quantitative studies designed to examine associations or predictors of IYC feeding these concepts are not often specifically identified with the five labels we used to designate them, but we see them reflected in the variables that are commonly used in surveys. With the increasing interest in women’s time, issues of “convenience” and “ease of access” are specific manifestations of variables that may be measured more broadly. The role of cost (of specific food items) is ubiquitously recognized in nutrition research. While women’s assessments of the “healthiness” of specific foods are often not directly examined, measures of such beliefs are more common in studies of IYC feeding and are used in interpreting dietary choices.

The expanding emphasis on “care” and “infant-maternal interactions” is also producing greater research attention to infant responses and caregiver interpretations, of these responses, including most recently in evaluations of multiple micronutrient powders. Apart from the arena of nutrition research, one or more of the five concepts are commonly employed in the design of BCC content, in economic policy decisions, and in private sector product development and marketing.

While the concepts we examine are etic, a fundamental step for utilizing them in a study requires an exploration of their meanings for the members of the society. In other words, one needs to understand their content from an emic perspective. In the FES we think of these concepts as “values.” In the module whose results are reported in this chapter, we sought to describe caregivers’ perceptions about these basic values. The module was aimed at obtaining information on how women perceive characteristics of foods from the perspective of the five value dimensions. In the next chapter we examine these values as dimensions that have a positive to negative valence or a valence that varies between important and unimportant. In that examination we also sought to understand how caregivers view specific IYC foods in relation to their cultural values.

For operationalizing the investigation of the five concepts we used guided questions with probing. We began with the concept of healthiness, and the question we used to initiate the discussion was: **“When you think about the healthiness of foods, what are some of the things that make a food healthy?”**

The content analysis of the results revealed that most respondents answered the question as we had intended, talking about the qualities or characteristics of foods that make them healthy or contribute to their health-giving qualities. Some respondents immediately began to list qualities and attributes of healthiness. Some of them began by first naming specific foods and then talking about the qualities and characteristics that made them healthy. A small number of respondents did not immediately understand our intent. For example, in Kitui one caregiver said **“I’m not sure I got what you are asking. Do you mean foods which are healthy for the baby?”** Another respondent thought we were trying to test her nutrition knowledge and said “I don’t know exactly what is in them. When Sarah was sick the doctor told me to give her these foods and they will make her healthy. On the other hand, she did go on to say **“Milk is specifically good for the blood and has vitamins that are good for the child because of raising appetite, though I don’t know the name of the vitamins in it.”**

To explore the influence of cost in 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”.**

In this chapter we have organized the findings in relation to the five concepts, with data on all the counties amalgamated under heading. To reiterate, the five concepts are:

- i. Healthiness, whose focus was cultural beliefs and knowledge concerning the “healthiness” of IYC foods
- ii. Costs, a concept which elucidated the cultural perceptions about the financial costs of foods for IYC
- iii. Child acceptance which delved into the cultural perceptions about IYC acceptance of foods during the period of complementary feeding
- iv. Ease of access collated views about the accessibility of foods that are given to IYC
- v. Convenience focused on perceptions about convenience or level of ease associated with preparing and feeding IYC foods.

I. Healthiness

Sub-dimensions of Healthiness

The dimension of healthiness was a dominant theme throughout the discussion with respondents. In general, caregivers have clear views about the meanings of “healthiness.” Their views reflect nutritional concepts and include ideas of energy giving, bodybuilding, and foods that play a protective role. These are the foods every caregiver aspires to give their children if resources allowed. There is a strong belief that foods, such as milk, meat and other animal source foods are regarded as body building foods that make children grow strong and tall.

In the course of discussing foods, key informants expressed a number of different features, which we have explored as “sub-values or dimensions” of healthiness. In this chapter we focus on caregivers’ statements and interpretations. Their statements are described below in relation to five sub themes:

i.) Energy giving foods/ Vitamin rich

In Kitui respondents named specific macro and/or micronutrients that particular foods contained and explained that this is why the foods were healthy. Some of them went on to describe the actions in considerable detail. Apart from macronutrients, more than half of the caregivers explicitly flagged the idea that healthy foods are foods that “give energy.” Many of the women also described the feature of promoting growth. In Marsabit, foods associated with weight gain include milk, potatoes, rice, pasta and maize meal. A respondent in Turkana had this to say about foods that give energy and strength:

“I do not know about the modern foods, but I know milk and milk cream gives a child strength”

Yet another mother from Isiolo felt that:

Respondent: “The things that make foods healthy are when you add tomatoes, onions, cooking fat, spinach, kales and beans.

Interviewer: Why do you think these things make food healthy?

Respondent: Because they have vitamins, like others have vitamin A which is very good because it makes children healthy”.

ii.) Growth promoting and body building foods

The commentaries related to physiological actions covered the gamut from nutritionally correct statements, such as “milk contains calcium, which helps the bones to grow and be strong,” to statements that reflect an alternative understanding of physiological actions, such as “Salt helps the bones to be strong.” A caregiver in Turkana thought:

“The fatty meat of a donkey and sheep. Fat makes the child grow fat and that means she is healthy”

A caregiver in Marsabit said:

“Beans make foods healthy when added to food because they add blood to the body”.

iii.) Organoleptic function

In Kitui, some foods, particularly sugar and margarine, were felt to be healthy because they tasted good and thus encouraged children to eat. Fat and oil were universally believed to make the food tasty. In addition, caregivers in Turkana and Isiolo felt onions and tomatoes contributed to healthiness of food by making it flavorsome. Respondents in Isiolo felt potatoes had a similar effect on IYC food. Generally caregivers also said that salt was a taste enhancer.

Caregivers from Isiolo explained that when food is tasty, a child will like it and eat well. One mother shared her thoughts as follows:

“I think things such as cooking fat, tomatoes, potatoes and onions are things which make food healthy because they make food to be delicious and when the child is given, she is able to feed well. Foods such as rice mixed with potatoes have good taste, so when I give to the baby she eats well”

iv.) Food safety

Some mothers in Kitui, Isiolo and Turkana highlighted the importance of ensuring the foods were well cooked to destroy germs. In addition, they stressed the importance of cleanliness of utensils and food before cooking. Observing hygiene by washing hands before cooking food, as well as before feeding a child were frequently mentioned as ways of ensuring foods fed to children are healthy.

One respondent in Marsabit said:

“Uncooked food can make children sick. When food is cooked well, it becomes healthy.”

Another respondent commented that:

“Ensuring that purchased cereals and legumes foods do not have weevils or stones make them healthy.”

When asked why cleanliness was important to making food healthy, a caregiver in Turkana replied:

“Cleanliness prevents diseases like cholera, typhoid and other stomach complications”.

Other responses that explained the role of food safety in health include:

“Food is healthy when it is well cooked. Uncooked food may cause illnesses such as diarrhoea and vomiting”.

“I ensure proper hygiene of the food I prepare by making sure that I wash food before preparing and also cleaning the utensils that I use to cook and serve food”.

“It’s important to store the cooked food in a clean dish with a lid to prevent germs that can make the child sick”

Caregivers also expressed the importance of giving fresh and “non expired” foods to infants and young children. In Marsabit, one mother said:

“I check on expiry dates of foods that I buy from the shop like Jogoo (a brand of processed maize meal), rice and spaghetti because expired foods are not healthy for children”.

v.) Diet quality

Apart from its effect on increasing consumption, many women felt Blueband (a local brand of margarine) was a very healthy food because it contained vitamins. Mothers also felt that foods were enriched through addition of animal fat, principally lard from sheep/goats as shown by this response from a mother in Marsabit:

“When food has milk and lard it is good and healthy for the child”.

In Turkana the addition of oil, tomatoes and onions were said to enrich food with nutrients (vitamins) making it healthy. Adding milk and milk cream, sugar, and blueband to porridge and ugali was cited by a number of caregivers as a way of making these foods healthy.

“Adding Royco, tomatoes, oil and onions to food enriches the food with nutrients and makes the food healthy.”

A few respondents could name nutrients that make specific foods healthy. For instance, this mother from Isiolo:

“Milk has its own fats which helps the child become healthy. When it is added to black tea, it makes the food healthy because milk has nutrients”.

It emerged that caregivers understood the importance of having balanced meals as reflected in this comment by a caregiver in Marsabit:

“The food must be well balanced; it should have carbohydrates, proteins like meat and vegetables and fruits like mangoes”.

In Isiolo, giving children a variety of foods, including fruits such as passion fruit, oranges and pawpaw, was cited as a way of making foods healthful. Asked what makes fruits healthful, one caregiver said that fruits add blood and water to the body. Another conversation yielded the following:

Respondent: ***“Foods which have vitamins, carbohydrates and proteins make a child look happy and become brighter in class.”***

Interviewer: ***“How else do they help?”***

Respondent: ***“The child becomes resistant to diseases.”***

Interviewer: ***“Which are these foods?”***

Respondent: ***“Greens like kales, mashed bananas and potatoes and milk”.***

In Turkana, mothers felt that giving young children balanced meals made them healthy. They felt such meals should include foods such as milk, meat, eggs, “Plumpy nut” and fruits. This is reflected in the conversation below:

Interviewer: ***“In your opinion what are some of the things that make food healthy?”***

Respondent: ***“Foods like milk, meat, eggs and Plumpy nut are healthy foods. Fruits also are healthy”.***

Interviewer: ***“Why do you think they are healthy?”***

Respondent: ***“I think they are healthy because when they are fed to a baby makes the baby healthy”***

Interviewer: ***“What do you mean by healthy baby?”***

Respondent: ***“Baby is not sick and adds weight.”***

Another mother had this to say:

“Mixing a variety of foods e.g. rice, beans and potatoes will make the food healthy. Feeding the child on a variety of foods like milk and fruits will make him healthy too”.

Adding meat or milk (livestock products) to food is considered by many caregivers as a way to make meals healthy for children. Several mothers mentioned adding meat broth to foods and appear

to equate its value to that of meat. The addition of foods that are perceived to be nutrient rich is considered a food preparation strategy that enhances the healthiness of diets. For instance, several women suggested that adding tomatoes to IYC preparations improved the “healthiness” of what they fed. Margarine was similarly described as enhancing foods nutritionally, apart from its role in encouraging consumption. One woman suggested that cooking different foods together increased the healthiness of the individual items, implying a concept of synergy of ingredients. This is illustrated in the conversation with a mother from Turkana:

Interviewer: *“What else can make a food healthy?”*

Respondent: *“Cooking a variety of foods mixed together e.g. meat, spaghetti, potatoes and rice makes the food to be healthy.”*

Finally, we note that a number of caregivers could not explain exactly what made foods healthy, but from their experience, they knew children become healthy when fed these foods. One mother from Isiolo said:

Respondent: *“I add carrots, pumpkins, kales to the child’s food”.*

Interviewer: *In your perspective what do these things have that makes the food healthy?*

Respondent: *I do not know, what I know is that it adds good health to the child.*

A lack of clarity about what characteristics of foods contribute to health, is captured in this comment from a woman who could not offer anything more concrete than the statement that:

“The healthiness is determined by its ingredients.”

II. Cost

To explore the influence of cost in 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”. Caregivers’ responses clearly show that cost of foodstuffs is a central issue, especially because most of the foods they give their IYC are purchased. Most caregivers said that cost influences what foods are bought for IYC. The majority emphasized the need to buy what is affordable, and to adjust what is fed to the IYC when they have insufficient money. Availability of money therefore emerged as key in types of food purchased for infants and young children. A respondent in Marsabit suggested: *“The price of food determines what food Mary will eat. When I can afford a particular food, I buy it regardless of the price”.*

Coping strategies

With respect to cost, respondents described various coping strategies to obtain what is necessary for a child. Clearly, all families value children and are willing to “go the extra mile” to purchase foods they deem are necessary for their IYC. The overriding desire to provide what children require is reflected in the comment of one respondent. *“When I have money and my son needs some type of food, the cost will not matter. I will buy the food.”*

The importance of cost is seen in the following comments:

“Cost is important because I have to buy food for the child. Therefore if food is cheap, then it means that I will go home having bought enough food for the child as compared to when it is expensive where I will be forced to buy only what I need”.

“Cost is very important because when the prices are high, I have to sacrifice the family foods so as to buy food for IYC as compared to when prices are low and I am able to buy food both

for the family and IYC”.

“Cost is one of the factors that I consider when buying food for the baby since it determines the kind of food I will buy for her. For example, if the price of the food that I want to buy has gone up, I may have to buy less food or buy something else to substitute what I wanted to buy”.

Mothers therefore use different coping strategies to acquire foods for IYC when they do not have sufficient money. Coping strategies include:

- i.) Opting to purchase only foods they can afford/ selecting cheaper alternatives
- ii.) Purchasing food from cheaper vendors or sources
- iii.) Sale of charcoal in order to obtain food for purchasing IYC food
- iv.) Purchase on IYC food in bulk, thereby reducing total cost
- v.) Purchase of food on credit when one does not have any money at all
- vi.) Resorting to locally available foods as opposed to travelling to far off markets in order to save on transport fare.
- vii.) Lowering of quality of IYC food purchased

The following comments are illustrative of the coping strategies employed by caregivers:

“Sometimes, some foods like spaghetti, meat and blue band (margarine) are very costly and I can't afford to buy for them my child. I feed her on the foods I can afford”.

“I look at availability of money. When money is available I buy foods where they are sold at a cheaper price”

“Cost is crucial. When I don't have money, I buy foodstuff that I can afford, but when I have the money, I buy what I can afford regardless of the cost”.

“ I like buying food from cheap sources, I also look at availability of food and which foods are cheap even if I have to go and buy from Marsabit e.g. potatoes. I consider both the fare and the cost of foods. I also tell my husband to buy foods from Marsabit in bulk and foods that will last long”.

“I source for cheap food, so that I buy more food and this results in me saving and using the money for other things like buying her clothes”.

“At times when I don't have enough money, I buy from a shop which is slightly cheaper than others”.

“I buy foods which are cheap, those which I can afford. I also prefer to buy in bulk rather than buying small items every day. For instance, I buy 1 tin (of 20 kg) of potatoes at ksh 250 rather than 5 pieces at ksh 25 because it will be expensive at the end of the day.”

“Although I buy food based on the amount of money that I have; I do not fail to buy food for my child because of money. Sometimes I can get the food on credit, to pay later”

“When I sell charcoal, I buy the child's food first. What remains is what I use to buy food for the rest of the family”.

“When the food I receive from Child Fund is finished, the little money I get from charcoal goes all to food and because it is not enough, I buy low cost or cheap food, but when I have the Child Fund food, the charcoal money is enough to buy the expensive foods once in a while”.

Not all mothers are concerned about cost. One mother from Marsabit asserted that she buys whatever food she deems necessary for her child because she can afford it. *“I am not concerned much about cost. If am buying his foods (child), I must buy whether cheap or expensive”.*

A caregiver from Isiolo explained:

“The cost of food does not matter when I am buying food for the baby, I will go for foods which will give good health to my baby whatever the cost; provided the child accepts them and they have energy/strength”.

The manner in which mothers prioritize the health of their IYC was explained by this mother from Turkana:

“Most healthy foods are expensive, but Mary is very important to me so whatever the cost, I try to acquire the healthy foods for her”

Mothers frequently pointed out that when they have money, they buy good quality foods for their children even when it is expensive.

“When you buy good foods for the child even if it is expensive, it is good for the child because the baby grows well (to her growing well means the child adds weight, he start to talk, walk”.

Another respondent said:

“When I have money, I buy for him all the foods that he wants. When I do not have money, I will take food on credit. However, my baby is more important than money.”

A respondent in Isiolo said that foods that are more expensive are healthier (more nutritious). As a result, she buys rice which retails at Ksh 70 per kilo believing that it is better quality food for children than maize meal for Ugali which retails at Ksh 40 per kilogram. However, since most mothers she knows buy rice for young children, she believes it is fine to buy the same rice others are buying:

“I do not know but I find everyone around buying rice for their children, so it appears that rice has better value than Ugali and that is why I go for the same”.

III. Child Acceptance

Nutritionists and public health professionals who work in the field of complementary feeding know that child acceptance of foods is a major issue for parents, everywhere. Infants and young children’s reactions to new foods are often not predictable, and the complex psychological and physiological dynamics involved in the process are still not well studied or reliably understood. What caregivers understand is that it is often a problem to get children to accept all of the foods they would like to feed them. Some children are much more difficult to feed than others, and the concept of a “poor” or “fussy” eater has emerged in all of our previous FES studies.

Regardless of whether the idea of a “difficult eater” is present as a well-defined cultural construct, the notion that foods may differ from each other in the dimension of “child acceptance” is important to pursue as part of mapping caregivers’ cultural beliefs/knowledge. We approached this by asking: “In your opinion, what are some of the things that make a child accept food?”

From our analysis of the discussions that were generated by this question, we identified two distinct categories of response:

1. Central concepts about **food characteristics** that lead to child acceptance
2. Central concepts about **managing the feeding process**

1. Central concepts about food characteristics that lead to child acceptance

There appear to be two primary concepts in this category, as well as two secondary concepts. The primary concepts are “tasty” and “well-cooked.”

“Tasty”

Giving “tasty” foods is achieved in the food preparation process. It does not apply to individual foods, per se (with the possible exception of fruit) but to the caregiver’s actions to create “tasty food.” There are a number of different ways in which foods are made tasty through the addition of ingredients. Primary taste enhancers are sugar and salt. Sugar is used to make foods sweet, as children are seen as more accepting of sweet-tasting food. Salt is used to avoid foods being too bland, and are also added to many IYC foods. A number of other ingredients are used to increase the tastiness of foods for IYC. In Kitui and Isiolo, these include: margarine, milk, oil, onions, tomatoes, and flavor cubes. Fat, spices and milk also comprise ingredients that enhance taste of food in Marsabit. Thus we see that additions to basic foods, including porridges, which are done through the preparation process, are a way in which caregivers avoid child rejection. Ways of making food tasty are illustrated by the following comments by caregivers:

“Adding sugar to foods like Anjera, tea and milk make children accept foods because the food is sweet and tasty. All children like sweet things”.

“Frying food with onions, tomatoes, royco, and cabbage makes food tasty and the child eats better. Also adding salt to mashed potatoes makes the food tasty hence easily accepted by the child”

“Adding sugar to his milk and porridge. When it is sweet, he drinks a lot of milk and porridge compared to when it has less sugar on no sugar”.

Affordability was mentioned as an impediment to the addition of other ingredients. In Marsabit the addition of tomatoes, onions and other vegetables, such as cabbage, was said to be done by ‘town’ people *“Children accept food cooked with vegetables like people in town do, for example cabbage, carrots and tomatoes.*

Several respondents in Marsabit also referred to some foods as ‘good or ‘sweet’ tasting. Such foods were said to be easily accepted and enjoyed by infants and young children.

“Giving the child ‘sweet’ foods like rice, potatoes, beans mixed with potatoes and meat soup”.

“They like sweet foods like bananas, milk, meat, Anjera and pasta”

“Well-cooked”

There are several food preparation techniques that are characteristics of foods that are well-cooked from the perspective of caregivers. To avoid problems, IYC foods should be soft, easily chewed, not raw, not burned, not bad smelling, not dirty, served warm and not cold, as well as being well-seasoned (“tasty”). Giving well cooked and soft foods was mentioned by a number of caregivers as a way of enhancing acceptability of food by young children:

“Giving him soft foods like ugali and mashed potatoes, as well as adding fat to make food soft will result in the child accepting these foods”.

“When I want to feed him ugali, I add milk or soup to make it soft and easy to feed him.” Adding fat/lard also makes the food smell good and she eats properly and even adds more”.

“She likes soft foods like potatoes mashed with milk. Children easily accept soft food because they have no teeth to chew hard foods. Softness of the food therefore determines whether the food will be accepted or not.”

“When the food is cooked until it is soft, or when it is mashed, the baby is able to chew and swallow it easily therefore will accept it. It easily therefore will accept it.”

Other, secondary concepts, which were mentioned by some respondents relate to “attractiveness” and “diversity.”

“Attractiveness”

IYC are more likely to accept foods that are attractive, which is primarily achieved by adding color. Tomatoes are particularly good for this purpose because they also contribute to taste. Zumula is another option to add a little color to white uji. In Marsabit, for instance, mothers feel that making the food colourful and appealing to the child enhances child acceptance of the food. Examples included adding tomatoes and carrots in rice giving it a nice colour.

“Diversity”

Another feature of IYC feeding that can be classified under the heading of “food characteristics that lead to child acceptance” is diversity. In caregivers’ views this can be achieved by putting several foods on to the plate from which you are feeding the child. It also reinforces the idea that one shouldn’t eat the same food every day. Varying the foods given to a child is also felt to increase acceptance, as explained by this caregiver from Turkana:

“Giving the child different foods rather than the same kind of food every day will help the child to accept the food easily”.

The fact that nearly all of caregivers talked about the importance of “tasty foods” and “well-cooked foods” indicates that they are deeply embedded in the culture. Taken together these four concepts help to underscore why the period of food shortage in the “worst months” is so anxiety provoking for caregivers. In addition to not having money to buy staples, they are prevented from buying the additions they regarded as very important in circumventing feeding problems. For example, the shift from frying to boiling means that foods are less “tasty.” Similarly, not having money to buy sugar and milk affects taste. Lack of tomatoes means that IYC foods are not only less tasty but are also less attractive. Diversity is seriously compromised, as well.

2. Central concepts about managing the feeding process

The second set of concepts we discovered through the interviews relate to the management of the feeding process. These can be classified in three categories:

1. Child centered:

These include: state of child health, state of child hunger, children’s individual preferences, and the degree of familiarity (what the child is “used to”).

2. Caregiver child dyad-centered:

These including talking with the child, playing, holding the child while feeding and generally making feeding pleasant, fun and comfortable.

“When I am feeding, I talk to her in a nice way, play, and laugh with her. When she is relaxed, she tends to accept whatever food I have prepared”.

“Singing for them while giving them food will make them not to refuse eating”.

3. Environment-centered:

These involve social facilitation, particularly feeding the IYC in the presence of other children who are also eating.

“When am the one feeding the baby she accepts the food because she is used to my hands. Also, the presence of my mother in law makes her to eat the food because she loves her and is used to her too”.

“Serving the food in her plate (the small one) makes her accept it; she is used to her plate”.

“I feed the child myself because when I do it, she eats the food. She likes to eat food in my presence. When I am around, she eats more food”.

Other strategies included:

- i.) Limiting breastfeeding: Several caregivers argued that limiting breastfeeding increases hunger, thereby encouraging children to eat more. “When the breast milk is inadequate-the child feels hungry, so they accept to eat more easily”.
- ii.) Feeding when the child is hungry. “When you want the baby to accept food, feed him when he is hungry. That way he will eat well and not waste food or your time time.”

It is important to point out that the list above is derived by amalgamating the individual responses of different women from the different counties. It does not mean that all individual caregivers have these concepts or follow these practices. (In fact, in a spirit of criticism of other mothers in the community, a couple of the respondents suggested that some mothers did not observe these “rules” for good feeding to encourage children to eat well.) The list we have derived reflects the collective, cultural knowledge. What is most striking about this list is that it covers nearly all of principles of good feeding behavior, as identified by nutritional/biomedical knowledge and captured in the WHO Guidelines. In other words, the principles of the Guidelines are embedded in the cultural wisdom in the community. It is probable that this feature reflects long-standing cultural traditions rather than recent introduction of new ideas.

It is also important to note that respondents in Marsabit and Isiolo also pointed out that in many instances, there is insufficient food and when children are hungry, they do not choose but eat whatever they are offered. They accept whatever food is available without any struggle.

Finally, we note that the insights we gathered from the question: “In your opinion, what are some of the things that make a child accept food?” were not ideas we had anticipated. They provide valuable perspectives on how caregivers organize and perceive the challenges of their roles as mothers and grandmothers who are responsible for their child’s nutritional wellbeing. The results also reveal aspects of caregiver’s strategies on dealing with and preventing problems in child acceptance of foods. As with the results of the question on “healthiness,” the responses on “child acceptance” indicate that this is an appropriate concept to use for mapping caregivers’ knowledge structure.

IV. Convenience/Ease of access

To introduce the discussion of convenience/ease of access we asked:

“In your opinion, what do you consider to be convenient in the feeding of your child?”

(Kwa maoni yako ni mambo gani unayo angalia unapo fikiria kuhusu urahisi wa kumlisha mtoto wako?)

The question was readily addressed, and the responses fell into a limited set of categories, which can be summarized as follows:

- Preparation time/ease of preparation
- Cooking time
- Ease of feeding
- Ease of acquisition

Ease of access

Several respondents suggested that “easy access” was an important characteristic of “convenience.” In Kitui, easy access was not discussed in relation to food purchases, but was described as foods that are available in the shamba or in the kitchen garden. Only one respondent suggested that convenient foods are foods that can be cooked in larger quantities so that portions could be temporarily stored for later feeding.

In Marsabit, easy access was discussed in relation to food purchase, as shown by the response below:

“When it comes to convenience in feeding the baby, I buy food which is nearest to me where we are”.

Another respondent said:

“For me convenience means having available and affordable foods. I look for foods which are locally available and those that I can access”

In Isiolo and Turkana, ease of access was described in terms of ready availability. Foodstuffs that are readily available, for example food commodities that are available in shops within the community, were regarded as convenient since caregivers wouldn't have to walk long distances to obtain them.

“According to me, easy acquisition of food for my child is very important because I won't have to walk for long distances looking for food but should be able to get food for my child within the community”

Another mother from Turkana said:

“I prefer food that I can get easily from the shops here and prepare very fast for the baby”.

Access to food on credit was identified by some respondents as an aspect of convenience, as well as a strategy to deal with economic constraints.

Convenience

Ease of preparation: For many respondents “ease of preparation” refers to the amount of attention a food needs while it is cooking, as well as the number of ingredients in contains. In Kitui, rice and porridge are the clear winners in this category. In addition to these foods, caregivers mentioned ugali in Isiolo, porridge in Turkana, as well as milk and tea in Marsabit. Consider Mwendé's typical comment:

“It is convenient for me to cook porridge. It does not require lots of ingredients while cooking. Rice does not require lots of attention while cooking, boil water add rice and let it cook.”

On the other hand, a few women suggested that vegetables are easy to cook. Carolyn said:

“I look at the preparation procedure. In my opinion I think kales are easy to cook and take a shorter time to cook than meat. It's more demanding to cook meat. Serving my family kales is easy compared to meat.”

In all the counties, many respondents highlighted the amount of time that is required to cook a food as a primary criterion of convenience. The best foods for fast preparation in Kitui are rice, porridge, uji and Weetabix, while in Turkana they include tea, rice, potatoes and spaghetti. Foods deemed as convenient in Marsabit included potatoes, pasta, ugali and milk. In addition, ripe bananas were mentioned in Isiolo. No one mentioned saving fuel as an advantage of faster cooking time. However, several caregivers noted that fast cooking time means that the baby doesn't have to be kept waiting long for the food to be ready.

Sarah: *"I prefer to make her uji because it's easier to cook. It's just mixing the flour and within no time you have it for her."*

The time required for pre-preparation of a food was another consideration for convenience:

"It is convenient for me to cook food that is clean and that does not need a lot of sorting because I will not spend a lot of time before cooking".

A few women suggested that fruits, such as bananas, oranges, are convenience foods because they do not require any preparation. It was however pointed out that these are available when one has made a trip to the towns. Several mothers also mentioned that ready to eat foods bought in shops and markets are convenient:

"Packed foods bought from the shops like cakes, biscuits and bread are also convenient because they do not need any preparation".

"It is convenient to buy and give my child milk that is packed because I do not need to boil it".

"I also buy her bananas and oranges from the shop because the child can eat them any time she needs them provided they are ripe".

Women reiterated that the time factor is important given the multiple chores they undertake in a day. Typical comments include:

"Because I have many things to do, I would prefer food that takes only a short time to cook. Also my child will not cry much as compared to when the food was to be cooked for longer".

"I cook foods that take a short time to cook so that the child does not sleep before eating his food and also so that my child doesn't cry a lot because of hunger".

Ease of feeding: For a number of the respondents in all the counties the concept of "convenience" related directly to the process of feeding their IYC. In other words, "convenient foods" are foods that are "easy to feed." Two qualities that characterize these foods are that "they are soft" and that "children like them."

"I choose foods which can be fed using my hands because it makes work easier"

When asked what she considered to be convenient with respect to feeding her child, a mother from Turkana explained:

"Food that is easy to prepare and easy to feed the baby like Nang'aria, rice, potatoes, tea, and porridge."

In conclusion, while the criteria for convenience are not uniform within and across societies, all of the respondents readily provided commentaries in response to this question. No one asked for further clarification. Therefore, in asking women to assess the convenience value of foods we were not imposing a concept they could not relate to. In fact, as part of their discussion, they often volunteered their judgments about specific foods that they regarded as convenient. However, it is important to note that ease of access and convenience is a factor that is also affected by cost when acquiring IYC foods.

CHAPTER TEN

Caregivers' Perceptions and Perspectives about Qualities and Characteristics of Foods and "Food Selection Values" IYC Diets

Introduction

This chapter expands the discussion of cultural aspects of IYC food and feeding in the five counties to present the results of two "cognitive mapping" exercises that were conducted with caregivers in Phase II of the FES studies. The purpose of the first exercise was to examine caregivers' perceptions about specific foods from the perspective of the five basic concepts: i) Healthiness, ii) Cost, iii) Child Acceptance, iv) Ease of Access, and v) Convenience. The purpose of the second exercise was to understand caregivers' perspectives about how these concepts affected their "food selection" decisions.

Our rationale for focusing on the five concepts is presented in Chapter 8. To summarize that discussion: we selected them because of their potential influence on families' decisions about the foods they acquire and prepare for their infants and young children. In each county, our selection of the specific foods to use in the first cognitive mapping exercise was based on the results of Phase I. From a cultural or psychological perspective, the concepts we examined with the caregivers have been approached from an "evaluative" perspective. That is, they pertain to "values" in the sense identified by the dictionary definition as "the importance, worth, or usefulness of something" (Oxford New American Dictionary). Thus, we assume that an implicit numerical value, representing a more positive to less positive assessment of a food on each of the concepts, plays a role in caregivers' food acquisition and preparation decisions. Because of their evaluative nature, in the rest of this chapter we refer to the concepts as "dimensions" in order to signal the fact that they vary along a value dimension.

We introduce the concept of "food selection values" in this chapter in order to highlight the significance of the difficult decisions caregivers have to make as they balance competing values in making decisions about feeding their infants and young children (c.f. Peltó and Armá-klemesú 2012). Often these decisions are fraught with value conflicts, which originate from the fact that individual foods are unlikely to share the same value position in relation to the five dimensions. Therefore, a primary motivation for including a module designed to "map" the values caregivers' ascribe to different foods was to reveal these tensions so that they could be considered in intervention planning and programme development.

"One of the greatest changes brought about by globalization is that it has established conditions in which interpreting and understanding the perspectives of "the other" is becoming a universal challenge to societal maintenance and functioning."

Theoretical Perspective

Changing the diets of infants and young children as a means of improving their nutrition is not the only mechanism for improving nutritional status, but it is a primary one. Behavior change communications (BCC), which provide caregivers with new knowledge and/or new motivation, are an essential component of any intervention aimed at improving nutrition in infants and young children because children's dietary intake in this early period of life is totally dependent on their caregivers' decisions and behaviors. Thus, whether an intervention includes providing caregivers with new knowledge or attempts to influence motivation through appealing to psycho-social norms, influencing caregivers' behaviors is a fundamental link to improved IYC nutrient intake. Often motivation and new knowledge alone are insufficient to support dietary improvement, in which case we can say that it is a necessary, but not sufficient, condition.

Designing communications that will be effective in changing caregivers' IYC feeding practices requires attention to the many determinants of these behaviors in the context in which the intervention is situated. However, even when barriers to embracing new behaviors have been identified and are being addressed, BCC is unlikely to achieve intervention goals if the content of the communications is not understandable, meaningful and acceptable to the people to whom it is directed. If they are not, the messages will not be actionable for the recipients, any more than they would be if they were delivered in a foreign language. Recognition of this fact is now deeply embedded in public health and nutrition planning and is often expressed by the principle that "messages have to be culturally appropriate." But how does one derive culturally appropriate messages?

Social science theories from multiple disciplines, as well as philosophical reflections on the nature of human thought, suggest that humans everywhere are prone to see the world and construct their realities through lenses that are conditioned by language and culture. It is generally difficult for people to move outside of their own cognitive frameworks and imagine the extent to which others "see the world differently" or construct their reality differently than they do themselves. This apparently basic human tendency is a major source of conflict and poor communication. One of the greatest changes brought about by globalization is that it has established conditions in which interpreting and understanding the perspectives of "the other" is becoming a universal challenge to societal maintenance and functioning.

In public health and nutrition developing and applying methods for improving comprehension of messages by intended recipients has become a significant focus of intervention-related research (Patton 2002; Maibach and Parrott 1995; Davidson et al 2013). In nutrition programs today nearly all projects invest some effort in developing culturally-appropriate materials (Pelto et al 2015a, Pelto et al 2015b). Moreover, the earlier general recommendation to "pilot test" messages has evolved, and now formal methods, such as "cognitive interviewing," are being recommended (Willis 2004).

Apart from the recent developments in public health, there are extensive bodies of knowledge and methods, generated in multiple fields by scientists interested in social and psychological aspects of cognition, as well as in marketing research. These are directly relevant for the challenges we face in improving BCC in nutrition. The investigations have produced powerful techniques for mapping cultural domains, knowledge frameworks, and the connotative dimensions of people's cognitive worlds. Many of these techniques have been adapted for use in non-literate populations (Bernard, 2011). Applied ethnography is increasingly drawing on and adapting these techniques in research to support intervention development in a number of areas, including health and nutrition (Schensul and LeCompte 2012; P Pelto 2013). The FES for Infant and Young Child Feeding contains modules that draw on these approaches, and the research results presented in this chapter are based on them.

Methods

Rating Foods

The cognitive mapping method utilized to assess IYC foods requires a set of dimensions and a list of specific foods. Respondents are asked to rate each of the foods in relation range (e.g. on a scale from high to low, good to poor, favorable to unfavorable). For this exercise we utilized the same dimensions that are the subject of the previous chapter (see Chapter 9). In each county the specific foods that were selected for the mapping exercise were based on the results from Phase I. The foods for the formal rating exercise, which was conducted in Phase II, included IYC cultural core foods, as well as family foods and modified family foods. While the 5 dimensions were the same in all counties, the numbers of foods and the specific foods to be rated were not.

In the interviews, the rating module followed immediately after the module in which caregivers discussed the meanings of the 5 dimensions. Consequently it was not necessary to introduce them to the respondents. To start this exercise, the interviewers explained the purpose of the module and how it would be conducted. They showed the respondent a set of cards, each containing a picture of a food we wanted her to assess.

The procedure was carried out as follows:

1. On a flat surface the interviewer placed a board with 5 slots in front of the respondent, putting a card with a plus sign (or happy face) at one end and a minus sign (or unhappy face at the other).
2. A card illustrating the first dimension to be rated (healthiness) was also set out on the surface.
3. The respondent was handed a card with a picture of a food and asked to place it in the slot that best described her view: ***“If you think this is a very healthy food for babies, put it here,” indicating the slot at the positive end of the board. “If you think it is not healthy, put it here,” indicating the negative side. “If you think it is somewhere in between, put it in one of the other slots.***

The respondent was handed cards sequentially. When all the food cards had been placed on the board, the values were recorded and the cards were then picked up and shuffled. A second dimension card was placed on the board and the procedure was repeated. The cards were handed to the respondent one by one. Care was taken be sure the respondent understood the procedure and reassure her that it was not a test. She was encouraged to comment on her ratings as she went along and the audio recording of her comments was part of her narrative record.

Rating Dimensions

Following immediately after the food ratings, we conducted a second exercise in which the respondents were asked to assess the influence of the dimensions on their own IYC feeding decisions. As the caregivers had just been asked to rate individual foods with the five dimensions, we used these same dimensions to ask about their perceptions about influences on their behaviors. For this exercise we modified the maternal time-related dimension, breaking it out into three separate values: “easy to acquire,” “easy to prepare” and “easy to feed.” Also, we added one other dimensions, asking caregivers to evaluate the “influence of others” as a determinant of their decisions.

In designing the exercise on the influence of the dimensions on decision-making we felt it was important to avoid a “forced choice” situation in which respondents would be required to create a hierarchy among the dimensions. The forced choice technique is often used on the grounds that one gets a better understanding of how multiple factors are regarded. However, reflecting on one’s own reactions to the experience of being required to make forced choices on a questionnaire, one

recognizes the discomfort a forced choice situation can produce. Often, one feels that the response does 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 used for the individual food ratings. We introduced the respondents to the exercise with the following statement:

“All of these are things you might have to consider when you decide what to make for your child or what to feed him/her. 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.”

Methodological Differences in the Studies

In the three REGAL-IR counties there were a few differences in the way the food rating exercise was conducted, compared to the studies in Vihiga and Kitui: i) The number of foods was greater than in the REGAL-IR studies; ii) The full set of food pictures was handed to the respondent at the beginning of each dimension rating; iii) The respondent was told that if there were any foods she did not want to rate she could set them aside. She was asked to place all of pictures on the board where she felt they belonged. Thus, the ratings were more explicitly relative to each other than was the case in Vihiga and Kitui.

As a consequence of the methodological differences in the foods and the procedures we should not directly compare the results across settings. This is not a problem from the perspective of using the results in developing interventions, including behavior change messages, but it limits the appropriateness of a direct comparative analysis.

I. Ratings of food qualitative and characteristics

We begin our examination of caregiver’s perceptions about the qualities and characteristics of foods with the results from Kitui. In Table 10.1 we have organized the foods into organized into 3 categories that reflect their status in IYC diets as **“Specially Prepared for IYC”** , **“Modified Family Foods,”** and **“Family Foods Fed to IYC.”** We treat fruits as a separate category because these are culturally independent of the three part categorization. The three-part categorization reflects both emic and etic features. The category - “specially prepared for IYC ” - is an emic category because it was derived from the results of the key informant free listing exercise and contains items we have characterized as the “IYC culture core.”

Among the striking findings are the differences between plain maize porridge and plain millet porridge. Millet is definitely regarded as healthier. This difference is maintained when milk is added. Adding milk to porridge transforms it from a nutritionally poor food to a healthy one. More than two-thirds of the caregivers gave plain maize porridge the lowest possible score of “1.” Ugali and muswa, which are also based on maize, were similarly negatively evaluated. Thus all three of the simple maize preparations we asked caregivers to assess - ugali, muswa, and maize porridge - received the lowest health rating of all the items. This finding corresponds to what has also been reported for other countries, namely that the traditional staple cereal (in this case maize) is regarded as low in healthiness but affordable. Maize porridge, an IYC dietary staple, is also viewed as very low for child acceptance, but is highly favorable from the perspective convenience and ease of access, as well as cost.

The food rating exercise identified the high regard that caregivers have for Irish potato as a food for IYC. Potato does not rate as highly as millet with milk or as fruit, but it is a positive food from the perspective of healthiness.

For the most part, caregiver assessments of convenience and ease of access ratings are similar. Except for the maize-based staples, foods generally fall into an intermediate range on both value dimensions. Compared to the majority of foods, Irish potatoes and pumpkin are viewed as more

difficult to access and to prepare. The low ratings of potatoes and pumpkin are of particular interest in view of the fact that they are core IYC foods. Taken together with the poor rating of Irish potato on cost, the findings suggest that trying to provide their children with potato and pumpkin is likely to be a source of considerable tension for caregivers.

Table 10.1. Kitui: Caregiver Perceptions about Foods They Give to IYC (N= 32)

Food	Concepts				
	Health	Cost	Acceptance	Convenience	Ease of Acquisition
<i>Specially Prepared for IYC</i>					
Plain maize porridge	1.3	4.8	1.6	4.6	4.7
Maize porridge + milk	3.3	3.8	3.2	4.4	4.6
Plain millet porridge	2.9	3.7	2.9	4.3	3.7
Millet porridge + milk	4.7	2.8	4.3	4.1	3.5
Mashed Irish potatoes	4.3	2.1	4.0	3.2	2.3
Boiled pumpkin	3.8	3.5	3.6	4.0	2.8
<i>Fruits</i>					
Ripe banana	4.7	4.1	4.7	5.0	3.6
Pawpaw	4.9	3.4	4.8	4.9	3.5
Mangoes	4.5	3.4	4.3	4.9	3.3
<i>Modified Family Foods</i>					
Irish potato with soup	3.7	3.5	3.9	3.7	3.8
Rice and soup	3.1	3.0	3.5	3.5	3.6
Rice and beans	4.3	2.2	4.0	1.6	3.3
Boiled pumpkin	3.8	3.5	3.6	4.0	2.8
<i>Family foods fed to IYC</i>					
Ugali	1.3	4.7	1.3	4.2	4.8
Ugali + kales	3.8	3.3	3.6	3.5	4.0
Ugali + cabbage + goat	4.5	1.6	4.1	2.4	2.4
Rice and green grams	4.0	2.1	4.2	2.3	3.3

When rice preparations include a legume, they receive excellent ratings for health. Preparations with meat, is viewed as expensive, difficult to access and not convenient. Nonetheless it is important in the diet as a culturally-valued food. One caregiver commented that: “Sometimes we just decide to treat our selves.”

The rating data on fruits reveal an aspect of beliefs that was not entirely clear from caregiver discussions. From the ratings we have the clear evidence that in Kitui fruit is highly valued as a type of food for infants and young children. It is particularly striking to find that fruits enjoy a favorable status on all dimensions. Although their availability is limited by seasonality, when they are in season they are readily accessible. Two features of their high convenience ratings are that they do not have to be cooked and that they can be easily fed to IYC by others. The sweet taste of ripe fruit is the primary characteristic caregivers noted with respect to their high level of child acceptance. A number of caregivers also mentioned that they had learned from CHWs or other medical sources that fruits are very healthy.

Finally, the results call attention to the fact that, with the exception of fruits, there is an inverse relationship between healthiness and cost that extends to many foods, not just maize-based staple dishes.

Tables 10.2, 10.3 and 10.4 show the full set of ratings for the REGAL-IR sites, Turkana, Marsabit and Isiolo respectively.

Table 10.2 Turkana: Caregiver Food Ratings on the Five Dimensions

Food/Dish	Overall		Mean rating per food dish per dimension				
	Total responses	mean rating for all dimensions	Health	Cost	Acceptance	Convenience	Acquisition
Milk	240	4.45	4.65	3.60	4.67	4.96	4.35
Rice and beans	239	3.21	4.10	2.42	4.17	1.71	3.72
Sorghum and beans/peas	239	2.64	2.44	3.46	2.06	1.27	4.07
Plain maize meal Ugali	238	3.03	1.31	4.48	1.40	3.66	4.43
Ripe bananas	237	4.14	4.65	3.91	4.67	4.88	2.50
Maize meal porridge without milk	237	3.20	1.27	4.63	1.53	4.00	4.59
Ripe mangoes	233	4.05	4.47	4.06	4.55	4.91	2.18
Maize meal Ugali and cowpeas	232	3.41	2.93	3.79	2.83	3.23	4.29
Black tea	232	3.36	1.21	4.70	1.57	4.52	4.93
Pancakes/Anjera with tea	231	3.48	4.68	1.36	4.67	3.24	3.47
Maize meal Ugali and kales	221	3.31	3.07	3.31	3.02	3.11	4.10
Rice, beef stew and Irish potatoes	209	3.68	4.50	1.93	4.83	3.80	3.28
Pasta/Spaghetti mixed with meat and potatoes	114	3.41	4.82	1.04	4.74	4.00	2.52
Pasta/Spaghetti alone	61	3.25	4.00	1.69	4.25	3.25	3.17
Pasta/Spaghetti and potatoes	57	3.67	4.25	1.27	4.67	4.42	3.50
Rice and potatoes	28	3.14	3.17	2.33	4.20	4.00	2.75

Table 10.3. Marsabit: Caregiver Food Ratings

Food/Dish	Overall		Mean rating per dimension				
	Total responses	mean rating for all dimensions	Health	Cost	Acceptance	Convenience	Acquisition
Maize meal porridge without milk	167	2.49	1.50	3.24	1.61	2.65	3.45
Black tea	166	3.08	1.09	3.85	1.09	4.71	4.61
Oranges	165	3.73	4.24	3.70	4.52	4.94	1.27
Avocado	165	3.59	4.00	3.48	4.18	4.97	1.33
Maize meal Ugali with milk	165	3.88	3.79	3.24	3.73	4.30	4.36
Rice and potatoes	165	3.44	3.33	2.97		3.48	3.97
Pancakes/Anjera with milk	165	3.91	4.27	2.94	4.42	3.27	4.64
Pancakes/Anjera with tea	165	3.56	3.33	2.64	4.00	3.33	4.48
Maize meal Ugali, cabbage and potatoes	165	3.28	3.94	2.38	3.79	3.47	2.79
Rice and beans	165	2.81	3.58	2.09	3.06	1.55	3.79
Boiled meat	165	3.17	4.73	1.24	3.97	2.12	3.85
CSB porridge	164	3.65	3.52	4.50	3.55	3.03	3.61
Milk	163	4.61	4.70	4.06	4.94	4.88	4.48
Maize meal porridge with milk	162	2.99	2.97	2.81	2.94	2.56	3.67
Wimbi porridge with milk	162	3.04	4.55	1.66	4.41	3.13	1.48
Wimbi porridge without milk	161	2.92	4.03	2.03	3.79	3.26	1.52
Pasta/Spaghetti mixed with meat and potatoes	160	3.43	4.68	1.18	4.77	2.68	4.09
Bananas	130	3.88	4.32	4.37	4.88	5.00	1.11
Mashed potatoes with milk	116	4.12	4.43	3.41	4.64	4.13	4.00
Mashed potatoes with soup	113	3.37	4.73	1.65	4.57	2.42	3.70
Potatoes with milk	51	4.27	4.64	3.45	4.55	4.80	3.88
Potatoes with soup	50	3.96	4.60	2.64	4.18	4.25	4.30
Ripe bananas	35	3.97	3.75	4.33	4.11	5.00	2.20

Table 10.4 Isiolo: Caregiver Food Ratings

Food/Dish	Overall		Mean rating per dimension				
	Total responses	mean rating (all dimensions)	Health	Cost	Acceptance	Convenience	Acquisition
Rice and beans	240	2.93	4.35	1.80	3.86	1.56	2.68
Maize meal Ugali with milk	240	3.80	3.76	3.27	3.88	3.86	4.33
Wimbi porridge without milk	240	2.55	2.29	2.68	2.28	3.25	2.20
Milk	239	4.80	4.71	4.57	4.92	4.98	4.82
CSB porridge	238	3.13	2.92	3.49	2.63	3.39	3.26
Maize meal porridge with milk	237	3.84	3.96	3.26	4.17	3.84	4.05
Rice and potatoes	237	3.57	4.41	2.45		3.27	3.45
Wimbi porridge with milk	232	3.25	4.24	2.28	4.02	3.35	2.30
Maize meal porridge without milk	232	3.02	1.78	3.69	2.09	3.71	4.03
Boiled meat	228	3.03	4.56	1.47	4.26	2.04	2.55
Ripe bananas	226	4.41	4.3	4.60	4.60	4.91	3.51
Sorghum and beans/peas	224	2.28	1.87	3.94	1.69	1.26	2.62
Maize meal Ugali and soup	223	3.32	3.59	3.04	3.71	3.11	3.16
Mashed potatoes and bananas with soup	222	3.68	4.53	2.65	4.80	3.76	2.49
Rice and milk	222	3.45	3.39	2.85	4.24	3.67	3.47
Plain maize meal Ugali	222	2.80	1.32	3.60	1.29	3.85	4.00
Boiled eggs	221	4.58	4.82	4.13	4.68	4.52	4.80
Maize meal Ugali and cabbage	216	2.82	2.82	3.00	2.56	3.13	2.54
Pawpaw	214	3.83	4.26	3.84	4.07	4.77	1.86

In Table 10.5 we shift attention from the full panoply of foods IYC receive to the foods that make up the IYC culture core. For this discussion we turn to the results from Vihiga to explore this matter in more detail. According to key informants, the IYC core in Vihiga consists of porridges, Irish potatoes, green bananas, rice, ugali with vegetables, ugali with dried sardines and ripe bananas and pawpaw and tea. Table 10.5 shows the mean values for the five dimensions. For this table we selected kale to represent a vegetable combined with ugali because it is a common and popular vegetable ingredient.

A feature of the rating task is that it involved both individual foods, which can be served as separate items to IYC, and combinations of foods that make up “dishes.” It is easy to forget that much of the time people, including IYC, consume dishes and not just individual food items. In these ratings we have a glimpse of the ways in which combining foods to create dishes affects how they are perceived. For example, a dish that combines a maize staple (ugali) with a vegetable (e.g. kales) increases its attractiveness as a healthy food to the same level as potatoes and green bananas. Combining it with fish is seen as further enhancing its healthful qualities, although it reduces its cost advantage compared to plain maize porridge.

Table 10.5. Vihiga: Caregiver Perceptions about IYC Core Foods (N= 32)

Food	Health	Acceptance	Convenience	Cost	Ease of Acquisition
Plain maize porridge	2.3	2.5	4.6	4.3	4.3
Maize porridge + milk	4.7	4.5	4.1	2.9	2.5
Plain millet porridge	4.2	4.2	4.1	3.0	3.2
Millet porridge + milk	3.9	3.7	4.3	3.8	4.0
Mashed Irish potatoes	3.4	3.9	3.8	3.8	3.3
Boiled green bananas	3.5	3.8	4.0	4.0	3.7
Ripe banana	4.7	3.5	5.0	4.5	3.9
Pawpaw	4.6	4.4	4.8	4.0	3.1
Rice + milk tea	2.5	3.6	3.8	3.0	3.9
Ugali + vegetable (kales)	3.3	3.2	3.5	4.5	4.1
Ugali with dried sardines	3.8	3.5	3.6	3.1	3.5

Although black tea, milk tea and dishes made with milk tea are IYC core foods in Vihiga, they were inadvertently left out of the set of foods we asked caregiver-respondents in Vihiga to rate. As we worked on the analysis of the FES results from Vihiga our appreciation of the importance of tea as a dietary mainstay grew. It is such a fundamental part of IYC dietary management that we felt its absence from the rating exercise had to be corrected. Therefore, we asked the fieldworkers to go back to the communities, and back to the respondents, to conduct a brief interview in which the women were asked to rate tea, milk tea and other dishes that are based on involve tea. The results are shown in Table 10.6

Table 10.6. Vihiga: Caregiver Ratings of tea-based foods

Food	Healthiness	Child Acceptance	Convenience	Cost	Ease of Acquisition
Black tea	1.1	1.3	4.3	4.7	4.2
Milk tea*	3.0	3.7	3.9	3.9	3.8
Milk tea & bread	3.9	4.2	3.1	1.8	2.3
Milk tea & doughnut	3.5	4.0	2.5	2.3	2.7
Milk tea & sweet potato	3.8	3.3	2.5	3.0	4.0

*Milk tea, which is milk with previously made tea added to it, normally includes sugar unless the household is short of funds.

Tea without milk and sugar is seen as a poor food from the perspective of healthiness. The addition of milk increases its healthiness, but not to the level of foods that also contain carbohydrates such as bread, doughnuts and sweet potatoes, as well as in porridges. Low cost, convenience and ease of acquisition are its strong points.

The caregiver ratings of foods in relation to the key dimensions provide a more holistic picture of cultural perceptions about qualities of specific foods and dishes than would be the case if multiple dimensions had not been explored.

Finally, to complete this section, we turn attention to milk and its status as an IYC food. In Vihiga and Kitui caregivers were not asked to rate animal milk as a separate food because it was not identified as a unique (stand-alone) food by key informants. However, caregivers in both counties

clearly have a high regard for milk as a component of other dishes. Its role in enhancing healthiness and child acceptance are evident in the ratings, and it was discussed repeatedly in connection with the challenges of managing food insecurity. Giving children black tea or porridge without milk was commonly identified as a critical hardship brought about by lack of money associated with difficult periods of the year.

The results from the REGAL-IR counties are particularly interesting because some of the households in these counties rely on animal milk, not only as a food for children, but as a primary source of livelihood. In the three REGAL –IR counties, milk generally receives high ratings: a mean of 4.4 in Turkana and 4.7 in both Isiolo and Marsabit. These are certainly high ratings compared to other foods, but lower than eggs in Turkana and Isiolo. As in Vihiga and Kitui, milk is also valued as an addition to other foods. Moreover the absence of milk during the dry season when animals are taken to distant pastures creates severe and recognized hardships in pastoralist families. In conclusion: the role of dairy food in IYC diets and the high regard with which they are held in all the counties reinforces their importance in the management of IYC diets in the five counties.

II. Food Selection Values: Caregivers' Perceptions about the Influence of Key Concepts on their Selection of Foods for their IYC

In this section we shift from the focus on specific foods to an examination of caregivers' perceptions about role of the key concepts on their food selection decisions. We examine them from a numerical perspective, as well as through their characterization in the narratives that were elicited in connection with the second cognitive mapping exercise. In the following paragraphs, we examine the results first for Vihiga and Kitui and then for the REGAL-IR counties.

Vihiga

Health and cost receive the highest ratings as factors that affect decisions. They also have the highest level of cultural consensus. Compared to these two, child acceptance and the 3 dimensions related to time management not only receive lower ratings (on average) but they also show substantially more variability among caregivers. Some women regard them as very important, but the majority assign them lower ratings.

We asked women whom they were thinking of when they rated “influence of others.” and the responses are shown below the line in the table. Here we see that husbands are the most important, followed by mothers-in-law in this patrilocal, patrilineal culture. However, note that only half of the women felt they could rate this dimension; moreover, among those who did rate it, there was no consensus on its importance.

Caregivers generally feel that their judgments about the healthfulness of foods play an important role in their decisions about what to feed. The following comments are typical of what they said during this exercise:

“Health comes first.”

“A child's health is top on the list for me always.”

“The healthiness of food is most important; my child should not just eat to finish but rather she should eat foods that help her to grow well and be free of diseases”

On the other hand, the following statements are typical of the respondents who placed cost in the highest category:

“The amount (of money) available affects all other factors.”

“The cost of food is prioritized in considering what to buy.”

“When you don't have the money you don't just choose foods, you start with how much you have first before determining what you give to your child.”

This analysis shows that 10 respondents rated health higher than cost, whereas 8 respondents gave cost a higher rating than health as a determinant of their decisions. Another 10 respondents placed both health and cost in the category of highest determinants. A few respondents explicitly rejected cost as a factor that affects their decisions. For example, one woman said:

“Even though you don’t have money, my child’s health is important. I could have the money and he won’t eat. When he is healthy I am happy and I will have energy to look for more money”

Another respondent, who placed both cost and ease of acquisition in the lowest category, said:

“As much as cost and acquisition are important, I still think it is necessary for me to give the baby food that will benefit his health. At the same time I would go to any extent to feed the baby food especially if it is going to help him. My motivation is seeing the child eating and enjoying the food. I can bear with distance to acquire food and even the cost of food as long as the baby eats well.”

Shifting from health and cost to other dimensions, we see that child acceptance is a determinant for many women. More than a third of the respondents in Vihiga placed it in the highest category as a determinant. A typical comment was: ***“However healthy the food is, if a child does not consume it, it won’t help them at all. The food should be well prepared and tasty to make a child eat it.”***

The three dimensions related to maternal time management –ease of acquisition, ease of preparation and ease of feeding are quite similar in their mean scores and in the distribution of scores, suggesting that they are tapping into the same general set of issues. However, they actually did not routinely fall into the same categories, and most of the women differentiated among them, citing different reasons for their ordering. For example, a few women rejected the idea that easy to acquire should be an influence. One respondent said: ***“You can go anywhere to buy, even if its far, you will go to bring healthy foods like fruits.”*** On the other hand, some respondents placed a higher value on acquiring foods closer to home. One caregiver, who placed ease of acquisition in the highest category, said: ***“Distance to market is a problem and so we end up doing barter trade amongst ourselves.”***

One contrast that emerged from the comments on “easy to feed” was that some mothers defined “easy to feed” as foods that can be given to children without having to supervise their eating, while others interpreted this as relating to foods that are easy for IYC to swallow or digest:

“...The food should be easy to feed so that the baby can feed herself comfortably, especially when I am busy.” Or, from another respondent: ***“Food should be easy to feed and a child should be able to eat without maximum supervision.”***

Contrast these statements with the following:

“The baby should have ample time when feeding...for a child it is much easier to eat Irish potatoes than it is to eat boiled or roasted maze.”

A similar contrast appears in the responses to “easy to prepare.” Not surprisingly, the caregiver whose orientation on ***“easy to feed”*** was child well-being gave the dimension ***“easy to prepare”*** a low rating on importance, saying “For me, it doesn’t matter how much time I take so long as what I give him is eaten well.” Another said: ***“Food might be easy to cook but not helpful in improving a child’s health.”*** In a similar vein, some caregivers focused on speed of preparation from the perspective of being able to quickly meet the child’s hunger: ***“The food should be easy to prepare for me not to keep the baby hungry for long, especially when she wants to eat.”***

On the other hand women who are more concerned about time management, and gave this dimension higher ratings, made comments such as the following: ***“If a food is easy to prepare one can squeeze time and cook it even when you are busy.”***

A few respondents provided another reason for seeking foods that are easy to prepare and easy to feed. A caregiver said: ***“Since often I leave the child with his younger siblings I prepare the meal that is easier for them to feed to him.”***

The ratings on ***“influence of others”*** showed very mixed results. Half of the caregivers chose not to rate it, presumably because it was not a salient determinant. A few took this as an opportunity to reject the idea that they were influenced others. The possibility that neighbors might have any influence, an idea that was introduced by one of the fieldworkers in explaining the concept, was soundly rejected. The idea that husbands and mothers-in-law might influence her decision also elicited negative comments from a few respondents. One caregiver said: ***“I reject some things my mother-in-law says if they do not make sense.”*** Another respondent said: ***“The reason I rated (Influence of husband) low is because most men are not interested so much about how children are fed, as long as he has bought the food.”*** However, that same caregiver said: ***“My mother-in-law’s influence really counts.”***

At the other end of the spectrum, both mothers-in-law and husbands were recognized by some caregivers as important participants and supporters of child feeding, although not necessarily in relation to what is fed. Here are examples:

“Many times my mother-in-law helps me in feeding the child. I get a lot of support from her.”

“Though he [husband] may not be here everyday, when he is around he supports me in feeding the child. He also provides the food we feed the child.”

“My husband supports me a lot. Without his support it would be very difficult for me to feed my child since my source of income is not reliable.”

Kitui

As in Vihiga, health and cost receive the highest ratings and also have the highest cultural consensus. The following comments of caregivers are typical of those who gave “health” the highest score as a factor that influenced their decisions:

“The health of the child is very important; when choosing food for a child one needs to consider foods that will improve the health of the child putting into consideration the money available. One should ensure that they buy food that boosts the health of the child like milk.”

“For the baby to grow well, be healthy, strong and free from diseases, healthy food is necessary.”

“Number one on the list is healthy foods because a healthy child makes a mother happy.”

Examples of comments from women who rated health high and cost low are:

“Though it is an important aspect in choosing food, it’s not a must that the price of food be low all the time. It all depends on the food the baby is supposed to eat. It does not mean that the child should not eat a food because it is expensive. If the cost of food is high you will work hard to feed the child.”

“As much as the cost matters in buying food, some cheap foods might not be nutritious for the baby to grow. So you do not just buy food because it is cheap. You consider how the food will benefit the child.”

“As long as all other factors are achieved, the cost is not important. I go to all the heights [to get healthy food] even if it means selling family property like a goat to feed my child.”

The caregiver-respondents in Kitui tended to downplay the importance of the time management-related dimensions as determinants, as indicated by the following, typical comments:

“As long as the food benefits the child parents should sacrifice and prepare food for the child”.

“Preparation does not matter as long as the food is healthy for the child.”

“It doesn’t matter how long it takes.”

The comments caregivers made in connection with the influence of others reinforced insights that emerged earlier in the interviews. There was considerable diversity within the group on how caregivers felt about the role of their husbands as decision-makers with respect to IYC feeding. Some women felt their husband's opinion was important only because they provided financial support. Others saw their partners as knowledgeable participants. Some respondents made a point of saying that, although their opinion counted, husbands should not have a say in deciding what to buy. Consider the following:

“Because men don’t know about how children are fed, this card [a picture of a husband] should be here (placing it on a low slot on the board). He hardly offers support in feeding well. They think it’s a waste of money to consider a balanced diet, thus if you follow them, your children will have ill health.”

“My husband is the one who supports me financially, so I buy food based on the amount of money he gives me, but he doesn’t tell me what to buy since he does not know how children are fed.”

Still on the subject of influence of others, many respondents commented about the value of advice from older, knowledgeable women. Mothers, in particular, were recognized as important sources of advice and support. Sisters, friends and neighbors were also commonly mentioned as individuals who provide knowledge and hence influence the respondents' infant feeding behaviors. Very rarely, respondents suggested that their mother-in law was a negative influence. One respondent said of mothers-in-law, in general, that:

“They are not quite informed. They tell you to feed the child with porridge before attaining 6 months. When you leave the child under their care you find they have given the baby porridge. I do not consider their advice as important.”

The source of influence that was most consistently expressed during the ranking task was the importance of health personnel. Doctors and community health workers are viewed as sources of reliable advice. One woman went so far as to say: “I only listen to the doctor; others don't matter.”

The REGAL-IR Counties

Isiolo

The results of the rating exercise by caregivers in Isiolo are shown in Table 10.7. Note that there are some differences in the number of respondents for each dimension because respondents were instructed that they should set aside any rating request they were uncomfortable with or unsure about.

Table 10.7. Isiolo: Rating Importance of Dimensions that Affect Decisions about What to Feed IYC

Dimension	Number of times rating was assigned to the dimension					N	Mean
	1	2	3	4	5		
Healthiness	0	0	1	3	42	46	4.9
Child acceptance	1	3	2	10	29	45	4.4
Easy to feed	2	2	5	11	17	37	4.1
Easy to acquire	5	4	6	11	19	45	3.8
Easy to prepare	5	5	10	7	20	47	3.7
Cost	10	6	7	6	17	46	3.3
Influence of Mother in law	5	3	2	0	1	11	2.0

Healthiness as a value, received the highest rating receiving a rating of 5 from 42 of the 48 respondents. Here are examples of comments from caregivers who gave “healthiness” the highest score as a factor that influences their decisions:

“This dimension is very important because the child needs to feed on healthy foods for her to be healthy and by so doing, I will be able to prevent diseases and illnesses that attack my child to prevent her from being healthy.”

“This is a very important...because the type of foods a mother feeds her child will reflect on the outside. If I feed my child on healthy foods, the child will be healthy as compared to when I don’t feed her well, therefore when people see my child healthy, they will praise me as her mother.”

As with the results in other counties, the types of comments made by caregivers in Isiolo who rated health high and cost low stress the primacy of health:

“Cost is not very important to me because however much the cost, I have to ensure that my child eats foods that will make him healthy.”

“When I have money, cost is not very significant to me as long as I can buy the healthy foods for my child, when I don’t have money, then I am able to borrow food and pay later.”

“Cost does not matter to me; whether foods are expensive or not, I will still buy the foods provided they are healthy and are energy giving.”

On the other hand, caregivers who placed cost as a primary determinant made comments such as the following:

‘I buy food based on the money that I have’

‘I buy food for the child when I have money. If I don’t have money the child stays hungry; just breastfeeds’.

‘I normally buy food that is cheap’

‘This is also a very important factor to consider because sometimes a mother may not have enough money to buy foods that are expensive and be able to buy nutritious foods at a low price’.

‘Due to challenges I face in bringing up my children at young age, cost is very important when it comes to feeding young children because the cheaper the food, the easier to acquire’.

Given that many caregivers engage in Isiolo engage in income earning activities, one might expect that time-related values would also be highly rated. However, as shown in Table 10.9, there was a considerable range in the ratings. Generally, all the dimensions except healthiness showed substantial variability among caregivers.

Marsabit

The results of this exercise for the 36 caregiver-respondents in Marsabit are shown in Table 10.8. As in other counties, health received the highest rating. It also had the highest cultural consensus with 33 out of 36 respondents rating it 5. The lowest ratings went to cost of foods and the influence of others on decisions on feeding IYC. With the exception of health, all of the other dimensions showed substantial variability among caregivers.

Table 10.8 Marsabit: Rating Importance of Dimensions that Affect Decisions about What to Feed IYC

Dimension/value	Number of times rating was assigned to the dimension					N	Mean
	1	2	3	4	5		
Healthiness	0	0	0	3	33	36	4.9
Child acceptance	0	2	6	16	11	35	4.0
Easy to feed	4	1	8	10	13	36	3.8
Easy to prepare	3	2	9	12	10	36	3.7
Easy to acquire	0	8	10	9	9	36	3.5
Influence by others	18	5	8	3	2	36	2.1
Cost	15	3	3	8	7	36	2.7

The following are examples of the comments that respondents in Marsabit gave when they discussed their reasons for assigning health a high rating:

'Foods that help children to add weight are good for them. Foods like Anjera and potatoes are good. When I go to buy food I look at these good foods like potatoes, rice, spaghetti, meat and even milk which makes them healthy and have a good body.'

'Healthy foods make child to grow well and taller. The child walks faster'

'When I buy food for my child I will look at the foods that make my child healthy. Healthy children grow faster and they don't always become sick.'

Here are examples from women who rated health high and cost low:

'Cheap foods have nothing. Expensive foods have everything. The cost of food does not necessarily influence the food I buy. I don't look at the cost of food. I will buy for my child everything he likes even if it's expensive.'

'I don't consider cost, if I have money I will buy what is good... when I don't have money I get credit'

The ranking exercise provided an opportunity to fill out our perspectives on the meaning and relative importance of convenience (acquisition, preparation and feeding) issues. Typical comments about these dimensions included:

'Distance is important in making decisions on what to buy. The closer the shop the better for me. My child will not stay hungry.'

'It is good to buy foods that are near. Foods that are far take longer time to get especially when the baby is hungry and needs something to feed on. Foods that are near are easy to get. I can cook them faster and the baby can get satisfied within a shorter time.'

'When food cooks fast the child will not have to wait for food and stay hungry... foods that cooks fast makes [it easy for] me go on with other work'

There was considerable diversity on how caregivers felt about the influence of others in their decisions about what to feed their IYC. Many respondents, who selected the lowest or next to lowest rating, expressed their ideas as follows:

"My mother in law doesn't know anything, she doesn't know much about foods that are good for children. She has never even talked to me about that. She only helps me in taking care of the baby."

"It doesn't matter; I'm not influenced by my husband nor anyone else in feeding my child."

"They know things to do with feeding children. However, things have changed. Long time ago they only gave milk and meat but nowadays we give them potatoes, mangoes, oranges, bananas and liver because they have vitamins. Mothers in law don't know these things."

"I already told you no one can influence me when it comes to feeding my child. My husband

doesn't even know anything to do with feeding children or what they feed on."

"I won't follow what she says. I believe nobody knows more about my baby than myself. Nobody will ever influence me."

Turkana

The results of the rating exercise, which was completed by 48 respondents in Turkana, are shown in Table 10.9. Note that some respondents did not rate all the dimensions and, in contrast to the other counties, only 2 respondents were willing to rate "influence of others."

Table 10.9 Turkana: Rating Importance of Dimensions that Affect Decisions about What to Feed IYC

Dimension	Number of times rating was assigned to the dimension					N	Mean
	1	2	3	4	5		
Easy to prepare	2	0	5	12	28	47	4.4
Healthiness	2	3	2	10	31	48	4.4
Child acceptance	1	0	1	4	7	13	4.2
Easy to feed	0	2	5	12	17	36	4.2
Easy to acquire	3	5	11	6	20	45	3.8
Cost	15	6	5	6	16	48	3.0
Influence of others	1	0	1	0	0	2	2.0

In contrast to the results from the other counties, we find that in Turkana, "ease of preparation" as a determinant of IYCF decisions received the highest average rating, with 28 out of 48 respondents rating it at 5. This finding is best interpreted in relation to the time allocation pressures of caregivers in this county. In Turkana many caregivers engage in time-demanding income earning activities, and the emphasis on time needs to be understood in relation to those obligations. In parallel with that finding, cost has a lower average rating, although it is noteworthy that the scores were bimodal.

Below are comments from caregivers who gave "ease of preparation" the highest score as a factor that influences their decisions:

"Because I come home tired from charcoal burning and the baby is hungry so I prefer food that is easily to make for the baby and family"

"I prefer food that I can prepare easily for baby to feed so that I can continue with other work."

"Food that is easy to prepare ...so that the baby can eat and stop disturbing"

Caregivers' comments in Turkana related to "ease of access" reflected some of the same concerns:

"I prefer food I can easily access so that I can buy come back cook and continue with my other duties."

"First I don't have money to go buy food in ...it is enough to shop from nearby shops. Secondly; I have to go work and come back home tired prepare the food, so where I get the food from must not be far."

"I prefer foods that are easy to acquire because I cannot leave my baby alone and I am usually tired after the day work"

"I consider foods that are easily accessible so that my child does not cry due to hunger. When she has eaten and is no longer feeling hungry that is when I go to get the foods that are gotten from far".

Health and Child Well-being

To conclude this chapter we return to the matter of how caregivers of infants and young children conceptualize health. This issue is particularly important with respect to the development of meaningful BCC messages and materials. A dominant theme in all of the discussions with caregivers was the importance they place on health – on ensuring and supporting the health of their children. This is evident in both of the cognitive mapping exercises - the ratings of individual foods and the ratings of the dimensions. As seen in the results presented in this chapter, health issues have a primary place in the women’s caregiving concerns in all of the counties. These concerns were also an underlying theme or dominant subtext throughout all of the interviews, not only in connection with the specific cognitive mapping exercises, which were administered as the last part of the interviews.

In each of the counties we discussed the meaning of “health” or “healthiness” as a value dimension with respondents. These discussions were conducted in connection with preparing them for the rating exercises. By probing caregivers’ initial responses and inviting them to elaborate on their comments, we were able to get a fuller picture of their ideas and perspectives. Table 10.10 presents a model of the cognitive structure of the sub-dimensions of health of caregivers in Marsabit. We extracted these sub-dimensions from the recorded narratives. Examples to illustrate each sub-dimension are shown in the right hand column.

Table 10.10. Marsabit: Sub-dimensions of Health

Sub-Dimensions	Respondents examples of foods that meet sub-dimension criteria	Caregiver Comments
Energy giving foods	<ul style="list-style-type: none"> Irish potatoes, sweet potatoes, green bananas, meat, ugali, rice, anjera, beans, pasta, macaroni, wheat products, githeri Blueband, kurkude (lard), Soup from meat, milk (goat milk, camel milk), porridge, fermented milk, milk powder, eggs, liver, baby porridge enriched with fat Ripe bananas, avocado, oranges, pineapples, cabbage, carrots, mangoes, kales, pawpaw, Ready to use therapeutic feeds, Cerelac 	<ul style="list-style-type: none"> <i>Meat has fat gives strength and helps children grow strong.</i> <i>Milk makes the body strong. If you drink milk, it will get directly into the body [using word for veins]. Other foods are excreted.</i> <i>Bananas, oranges, and mangoes have vitamins and add blood to the baby and give strength</i>
Body building & growth promoting foods	<ul style="list-style-type: none"> Soup from the meat, milk (breastmilk, cow, goat and camel milks), tea, porridge with fat and sugar Liver, meat, eggs and beans Rice, pasta, macaroni, potatoes, githeri, Goat fat, kurkude (lard), margarine (blue band), cod liver oil Cabbage, bananas, avocado, mangoes 	<ul style="list-style-type: none"> <i>When children are always fed milk, they walking, talking early. You see them adding weight well</i> <i>Tea is good especially when enough milk is added. The milk in the tea makes a baby's bones strong; it also makes the child healthy</i> <i>Beans add blood volume while potatoes make you big</i> <i>When a mother drinks meat soup and breastfeeds the child well, you can see them adding weight and growing very well</i>

Appetite increasing foods	<ul style="list-style-type: none"> • Mashed potatoes, rice, pasta, spaghetti and beans • Meat soup, tea with little or no milk, goat milk, breastmilk, porridge, ribena and fermented milk • Cooking food with fat, royco, salt, onions, tomatoes and adding sugar to tea 	<ul style="list-style-type: none"> • <i>Porridge also makes them have good appetite.</i> • <i>When children eat mashed potatoes, meat soup and beans, it makes them very hungry and they will want to eat more food.</i> • <i>When you breastfeed a child the whole day, she will be very hungry evening and she eats very well.</i> • <i>Fermented milk, black tea and breastmilk gives children good appetite. They burn the stomach (meaning irritate the stomach) thus make one to feel hungry.</i>
Digestion assisting foods	<ul style="list-style-type: none"> • Any milk, camel milk, porridge, commercial juice, water • Lard, cow fat, kimbo fat • Kales, oranges and bananas • Ugali, rice, soup, githeri, beans, diluted chilli sauce, goat meat, fito 	<ul style="list-style-type: none"> • <i>Oranges and bananas are good with digestion, they do not take long in the stomach</i> • <i>Milk, water and soup consumed with other foods facilitate digestion.</i> • <i>When kimbo fat or sheep fat is added to the food it helps indigestion. In addition, you can just place it on their tongue and let them to suck, it helps indigestion; cooking fat given to the babies helps them go for a long call with ease.</i>
Foods that prevent diarrhea and other illnesses	<ul style="list-style-type: none"> • Porridge, potatoes, beans, rice, ugali, anjera, soup and tea • Fito, Liver, livestock blood • Milk, camel milk, soda, fermented/ sour milk • ORS, cod liver oil, honey, crashed coffee berry • Oranges, bananas, ribena 	<ul style="list-style-type: none"> • <i>Camel milk removes all the dirt from the stomach through diarrhoea. It prevents all diseases in children</i> • <i>Fito, [a traditional medicine prepared like tea] prevents cough, stomachache, fever and malaria</i> • <i>Milk when taken by babies prevents them from getting ill</i> • <i>Cod liver oil boosts immunity thus preventing diseases</i> • <i>Goats eat herbs so their meat is medicinal</i> • <i>Animal foods such as soups, milk and meat prevent stomach aches and malaria; meat soup prevents children from getting flus</i> • <i>Honey prevents the spread of measles</i>

Table 10.11 shows the results of the interviewing probes on qualities that define “health” for caregivers in Kitui. We used the narratives that were generated in the discussion to prepare respondents for the food rating task to identify the categories in the table. The quantification of the number of respondents who named or identified the individual categories was derived from coding the narratives. Thus the numbers in the table do not permit one to conclude that characteristics that were not mentioned by a given individual were not recognized by them. However, from the table we can see that some categories were more salient than others. The quality of “giving energy,” as well as specific macro and micro nutrients, and physiological actions of foods are seen by many of our respondents in Kitui as the characteristics that explain their “healthiness.” Food safety and dietary quality were explicitly salient for a smaller number of the 32 respondents in our Kitui sample.

Table 10.11 Kitui Caregiver-respondent qualities that define healthiness of foods (Number of respondents = 32) **

Qualities/Characteristics	No. of Respondents Mentioning this quality
Ingredients	
Named macro and/or micronutrients	19
“Vitamins” (unspecified)	3
Gives energy	15
Growth promoting	9
Physiological actions+	13
Organoleptic	
Soft	3
Tasty*	4
Food Safety	
Clean/ Well-cooked to destroy germs	6
Diet Quality	
Balanced	6
Diverse/varied	5

**** Individuals can be tabulated in more than one category**

+ e.g. Increases blood, improves eye sight, builds bones

* Increases amount of food ingested

In conclusion: the ethnographic techniques that were used to collect and analyze the data we present in this chapter provide an opportunity to gain insights to women’s views and perceptions about the factors that affect their food selection values and behaviors. Understanding their perspectives is, we believe, a prerequisite for designing and developing better ways to communicate, and, ultimately, better ways to support them in environments that present formidable challenges to raising health infants and young children.

CHAPTER ELEVEN

Epilogue:

A Summary of Key Findings from the FES Studies

The primary purpose of this monograph is to present readers with a rich description of the results of the focused ethnographic studies of infant and young child feeding in Vihiga, Kitui, Isiolo, Marsabit and Turkana Counties in Kenya, and a picture of the contexts in which child care giving takes place. Our goal was to identify the challenges that caregivers and their families face in the difficult physical and economic conditions they experience, and reveal how they meet them, drawing from their cultural heritage, creating new strategies and developing their own perspectives and insights. We wanted to generate a record that provides insights into their coping strategies and the strengths and cultural solutions they use. We wanted to give women “voice” to share the joys and sorrows they experience in meeting the challenges of feeding their children.

The goal for the monograph contrasts with the goal of the extensive reports, summary reports and policy briefs that we prepared, based on the studies, which were intended to inform intervention planning, particularly, but not exclusively by the project sponsors. Although the purpose of the monograph and the purpose of the reports and policy briefs are not identical, we want to conclude the monograph with a summary of key findings – findings that we believe are not only useful for planning new interventions, informing on-going activities, and supporting policy development, but also for pointing to issues in infant and young child nutrition that need further investigation in nutrition and public health. We hope that the following summary of key findings will draw attention to the need for better understanding of the “what,” “how,” “who,” “where” and “why” of IYC-related behaviors.

1. Although most households have some land and engage in agricultural production for home consumption and, to a much lesser extent, as a means of generating much needed cash, no households are food self-sufficient, and all households purchase the majority of foods that are specially prepared for infants and young children. A small minority of households produces staple grains that last through much of the year, but all households are dependent on the market for many of the foods in their household food basket.

“Our goal was to identify the challenges that caregivers and their families face in the difficult physical and economic conditions they experience, and reveal how they meet them, drawing from their cultural heritage, creating new strategies and developing their own perspectives and insights.”

2. Food insecurity is an ever-present fact of life for nearly all households. The magnitude of food insecurity varies with season of the year; the “worst months” are the dry season, when food can no longer be grown in fields and gardens. During the worst months of greatest food shortage, caregivers employ a variety of strategies to feed their families. Among the kinds of activities they employ to acquire small amounts of cash to buy food are: gathering and selling firewood fetching water for neighbors, and casual labor, as well as craft production and small-scale entrepreneurial activities.
3. A significant finding of the study is the magnitude of negative changes in IYC diet that occur during the periods of greatest food insecurity. Although caregivers and other adult members of the household buffer children, particularly infants and young children, when food is scarce, their buffering does not compensate for the loss in diet quality and quantity that caregivers report is necessary during the dry season. As is the case in most situations of food insecurity, families make strong efforts to protect their infants and young children from outright hunger. Parents skip meals and reduce intake to buffer their children, particularly their youngest children. Breastfeeding to two years of age is usual and this practice helps protect children from malnutrition.
4. Children’s diets, and those of their households, contain little animal source foods, except for milk in pastoral areas and small dried fish (in Vihiga but not in Kitui). Children receive tea and milk as a dietary staple, at least from 6 months of age.
5. A major finding is that virtually all caregivers have a clear understanding of the importance of food for child health and growth. In many cultures, caregivers are concerned about the connection between food and survival, but do not relate food quality to child well being. In such situations, the first step in behavior change interventions is to help people understand that adequate food to prevent hunger is not enough. This is not the case in the five counties where caregivers do understand the relationship of food quality to child survival and growth, and are strongly committed to providing their IYC with the best foods that they can.
6. A related finding is that many caregivers possess solid nutritional knowledge. There is considerable variability in levels of knowledge. In spite of low levels of formal education, some women articulated views about nutrition, food quality and even digestion at a level one would be pleased to observe in high school graduates. However, not all women have the knowledge to select and prepare IYC foods in a manner that permits them to optimize child nutrition. As part of planning for interventions to improve IYC nutrition it is important to identify the sources where women are obtaining sound nutritional knowledge and values, evaluate how wide spread this knowledge is and who is not being reached. It is also important to ensure that the system that has facilitated this positive knowledge is sustained.
7. Household economic organization places a premium responsibility on women for the acquisition of family and IYC foods through both home production and purchase. Her responsibilities cover the gamut from acquisition through preparation to feeding. Given these multiple sectors of responsibility, caregiver activities in relation to IYC diet have produced 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 they have available for food preparation and feeding of IYC.
8. In all of the counties there is substantial variability in family structure and composition. Some households are single parent households. Some households are extended families in which several adult women caregivers are available. Some households have a low child dependency ratio and are able to direct their resources to one or two young children. These differences in family structure are important because they affect all aspects of IYC feeding and care.

9. An 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 negative consequences for IYC feeding of the current technologies household use include: i) the time requirements on caregivers to obtain firewood, ii) the difficulty of reheating food or preparing hot food more than once a day, 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 because foods are often stored without refrigeration beyond a safe period of time.
10. The organization of labor within households places responsibility on women to obtain water and fuel for cooking, as well as for other household needs. As with the provision of foods, these responsibilities affect the time and other resources caregivers have available for food preparation, feeding of IYC, and other care activities. The extent to which she can delegate these responsibilities depends on household structure and the presence of others who can take on these tasks. In households with greater economic flexibility, these tasks may also be performed by individuals outside the household.
11. Social support for food acquisition is very important for IYC nutrition. In particular the commitment of fathers/husband is essential to buffer food insecurity, as well as to ensure dietary quality and dietary diversity. 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. Women who are alone because of the death of a spouse or other close family members are particularly vulnerable throughout the year and not only in times of seasonal food insecurity.
12. In all of the counties, caregivers in our samples expressed 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 exclusively from supernatural forces or from innate characteristics of the child, it is more difficult to persuade caregivers that their own actions, their "agency," can make a difference. However, there is also a negative side to the cultural value of self responsibility -- it can lead to self blame and judgmental 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.
13. The emphasis on individual responsibility exists side by side with another set of values that extend beyond childcare to many aspects of life, namely, the emphasis on social responsibility and sharing. These are traditional values that support the belief that one doesn't turn one's back when people ask for help, at least not when it comes to food. The response may be structured as a loan, with the expectation that the requester will return the support, either in money or in kind; or it may be a gift. Within the larger family network, there is a strong emphasis on "coming to the rescue" when food is scarce and one has the means to respond. In theory, the cultural value of sharing, on one hand, and the value that one is responsible for the health of one's child, could lead to 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 contrasting cultural features. However, we also note that general poverty places limits on how much and how well others are able to respond to caregiver's needs.

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