

Transformative Engagement Network (TEN)

Building resilience against hunger and climate change in smallholder farming communities through transformative engagement

Masters in Transformative Community Development

Title of Research Paper : Cultural barriers to adequate dietary intake in drought prone areas of Bolero, Malawi.

Student Name : Melina Portia Mtonga

Student Number : MTCD /2C/8/13

Student Email : mtongamelina@yahoo.co.uk

Institution at which student is registered: Mzuzu University

Name and email of supervisor(s) :Dr. Mavuto Denis Tembo, tembo3umd@gmail.com

:Dr. Jean Kaunda, kaundajeane@hotmail.com

I, Melina Mtonga, certify that the research paper is my own work and I have not obtained a Degree in this University or elsewhere on the basis of this Research.

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ABSTRACT

Cultural barriers shape dietary behavior and influence adaptive capacity of rural communities living in climate change prone regions of Sub Saharan Africa. Therefore, the study was conducted to assess the role of cultural barriers on dietary intake among households living in drought prone areas of Bolero, Malawi. The study involved 100 respondents (37 men & 63 women). Sixteen were 16 key informants and 84 focus group discussion (FGD) respondents selected purposively from six villages in Lundu and eleven villages in Bolero-A Sections. More women were targeted because preparation of meals was generally women's responsibility. Mixed methods of community dialogue workshops, desk review, participant's observations, FGD and Key Informant Interviews (KII) were used to collect qualitative data. Data was analyzed by thematic content analysis and descriptive statistics. The study found out that food taboos persisted in both study sites with more taboo adherence reported in Lundu than Bolero-A. Overall, women were most affected by food taboos due to gender dimensions of obedience, dependency and submissiveness which deterred women from making independent decisions on food and livestock production and food consumption. Food taboos might reduce women's adaptive capacity to climate variability and might contribute to consumption of low nutrient diets, leading to under nutrition, especially, in pregnant women who had a range of tabooed foods. Although coping strategies to food taboos were in place, they were insufficient to guarantee access to adequate diets and improved adaptive capacity. Engagement with respondents through FGD's, KII's and participant's observations made respondents aware of the devastating impact of food taboos. Respondents campaigned against harmful food taboos and negotiated for reconstruction of gender contracts. Traditional leaders advocated for elimination of harmful taboos while Government Extension staff re-designed project activities and extension message based on prevailing food taboos for attainment of balanced diets.

Key words: Food taboos, barriers, adequate diet, under nutrition, drought, adaptive capacity, Bolero.

DEFINITION OF TERMS

Food taboos: Food taboos are cultural or religious prohibition against eating certain kinds of food in a particular area, violation of which is believed to be punishable automatically by supernatural means (Chinwendu, 2014).

Under nutrition: Under nutrition denotes insufficient intake of energy and nutrients to meet an individual's needs to maintain good health (Under nutrition in Malawi, 2006:191).

Culture: Culture can be defined as enduring behaviours, ideas, attitudes and traditions shared by a large group of people and transmitted from one generation to the next (Myers, 2013). Culture is also defined as the symbols that express meaning, including beliefs, rituals, art and stories that create collective outlooks and behaviours, from which strategies to respond to problems are devised and implemented (Adger et al., 2012).

Barrier: Anything that causes one to slip up in ones goal of making lifestyle changes, such as changing eating habits (Healthwise, 2013).

Adequate/balanced diet: A combination of six food groups – staples, animal foods, legumes, vegetables, fruits, fats and oils in their right quantity and quality (Mwegereko, 2009; Schoñfeldt & Hall, 2012).

Drought: Refers to a condition of low rainfall over prolonged periods and denotes extreme scarcity of water resources (Qureshi & Mujeeb, 2004).

Adaptive capacity: Adaptive capacity is a vector of resources and assets that represent the asset base from which adaptation actions and investments can be made (Adger & Vincent, 2005:2).

Community of Practice: A group of people with a shared issue, passion, concern or problem, who want to deepen their knowledge and skills through an ongoing exchange (Mataya et al., 2014).

Nsima: Staple Malawian food prepared from maize flour.

CHAPTER ONE: INTRODUCTION

1.1 Background to the problem

A balanced diet is essential for good health. It requires a combination of six food groups – staples, animal foods, legumes, vegetables, fruits, fats and oils. Consuming the right quantities of different foods ensures that a person gets sufficient supply of macronutrients and micronutrients for human, economic, political, educational and technological development (NSO & UNICEF, 2008 & UNICEF, 1998).

In Malawi, a lot of resources have been devoted to crop and livestock production. Policies such as the infant and young child feeding and strategic plans for agriculture and food security have been developed to create an enabling environment for accessing balanced diets. Nutrition education and awareness campaigns on community nutrition, young child feeding and dietary diversification have been conducted by Government and Non Governmental professional nutritionists and health experts in Malawi (Department of Nutrition, HIV and AIDS, 2009). Despite efforts to improve access to balanced diets, most rural communities including Bolero continue to consume low nutrient diets even when alternative nutritive value foods are available and accessible (Department of Nutrition, HIV and AIDS, 2009). There is a growing realization that apart from inadequate knowledge on appropriate food choices, low food availability and access, food taboos emanating from cultural practices and religious beliefs limit consumption and use of certain foods, leading to under nutrition which, in turn, contributes to high morbidity and mortality rates among under-five children (Parmar et al., 2013; Linzie, 2014 & Malawi News Agency, 2014) and decreases ability to cope and adapt to the consequences of climate variability (Tirado et al., 2012).

Literature shows that in Malawi, 47 percent of under-five children are stunted, four percent are wasted and 13 percent are underweight (NSO & ICF Macro, 2011). About 12 percent of children die before the age of five and that 38 percent of those deaths are related to under nutrition (Christensen, 2013). NSO & UNICEF (2008) established that in Rumphu, 14 percent of under-five children are underweight, 35 percent are stunted and 2 percent are wasted. The National Micronutrient Survey 2001, estimates that 10 percent of women are underweight and 25 percent of all adults are malnourished (Department of Nutrition, HIV and AIDS, 2009). Together, these forms of under nutrition exert enormous social, economic and health related burdens on individuals, families, communities and the nation at large, thereby contributing to stagnation in overall national human and economic development (Department of Nutrition & Health, 2015). Although food taboos limit food consumption, they have been under researched in Malawi hence the need for further exploration on how food taboos influence dietary behaviour and adaptive capacity of households living in drought prone areas of Bolero.

1.2 Significance of the study

The study results build on work already done on causes of under nutrition in Malawi through provision of insight on prevailing food taboos, how they shaped dietary behaviour and influenced adaptive capacity. The results of this study form the foundation for carrying out similar research in future, designing of food and nutrition programs that take into consideration food taboos for various communities and act as evidence in carrying out advocacy and lobbying work on elimination or modification of harmful food taboos for attainment of adequate diets and improved adaptive capacity of households.

1.3 Overall Objective

To assess the role of cultural barriers on dietary intake among households living in drought prone areas of Bolero, Malawi.

1.4 Specific Objectives

- To map out prevailing food taboos in Bolero.
- To determine effects of food taboos on dietary intake and adaptive capacity in Bolero.
- To find out coping strategies to food taboos in Bolero.

1.5 Research questions

- What are the prevailing food taboos in Bolero?
- Do food taboos influence dietary intake and adaptive capacity of households?
- How do Bolero community embrace food taboos and adjust their diets amidst food shortage due to climate variability?

CHAPTER TWO: LITERATURE REVIEW

Food taboos are cultural or religious prohibition against eating certain kinds of foods in a particular area, violation of which is believed to be punishable automatically by supernatural means (Chinwendu, 2014). Food taboos include attitudes towards certain foods, food preparation, breastfeeding, infant feeding practices, intra-household food distribution and abstentions which are concerned in the creation and maintenance of culture differences, male authority, age and gender inequalities (Oniang'o et al., 2003; Byaruhanga & Opedum, 2008).

Food taboos differ from society to society. In Ethiopia, pregnant women are forbidden to take white foods such as milk products, fatty meat, porridge and potatoes. Such foods are believed to have plastering effects on the body of the newly born baby (Bekele, 2007). Diets also have gender dimension in Ethiopia. Culturally, priority is usually given to male in food distribution system (Bekele, 2007 & Alonso, 2015). Eggs are a taboo for young girls in Lesotho. It is believed that eggs increase sexual desire and lead girls to seek out sexual relationships with boys (Pérez & García, 2013). Coconut milk is not given to children in Nigeria, because it is believed that the milk will render children unintelligent. In Gambia, pregnant women do not eat eggs fearing that the child will be mute or stuttering and catfish to prevent giving birth to a dribbling baby (Meyer-Rochow, 2009; Pérez & García, 2013). In China, they believe that if children eat beef, they may have a stubborn temper like an ox (Gao et al., 2013). In Malaysia, pregnant women are restricted from eating fused double banana as they result into twin pregnancies (Zahhura et al., 2012). In India, pregnant women are not allowed to eat avocado pears and eggs for fear of miscarriage (Piasecki, 2007). In Ghana, pregnant women are forbidden to eat meat & eggs for fear of having big babies who could cause complications during delivery (Azumah, 2010). Jews and Muslims don't consume pork while Hindu's abstain from eating beef because cows are considered as sacred.

Seventh Day Adventists don't consume cat fish because they are regarded as unclean according to the Bible in Leviticus 10 verse 10 and 11 verses 46-47 (Gadegbeku et al., 2013).

Food taboos prevail for various reasons. Certain allergies and depression are believed to be associated with consumption of certain foods so if such foods are avoided, the health of individuals is protected (Meyer-Rochow, 2009). Taboos may also serve to protect human health directly by preventing people from eating poisonous or dangerous animals (Begossi et al., 2004). Henrich and Henrich (2010) show that temporary food taboos for pregnant or lactating women in Fiji apply to a selected number of marine species that are toxic and that adherence to these taboos decreases the probability of fish poisoning by 30 percent during pregnancy and 60 percent during lactation (Pérez & García, 2013). When food items are considered a taboo for one section of the population, it leads to a monopoly of the foods by the rest of the population. For example, in some places such as Senegal, meat is considered a delicacy for men and a taboo for women and children thereby leading to the monopoly of meat by men (Gardner, 2009). Cultural or religious dietary practices are observed because of a belief that non observance will cause physical or mental illness, slow down recovery from illness, lead to malformations or result in unfavorable characteristics such as stuttering or baldness in babies (Maimbolwa et al., 2003). Food taboos that serve to protect natural resources from overexploitation may contribute to ensuring the availability of food in the long run.

Food taboos are either beneficial or harmful to individuals. With the exception of food taboos protecting health, ecology and resources, food taboos lead to under nutrition that contributes to high morbidity and mortality rates among under-five children, pregnant and lactating women (Picot et al., 2012). In infants and children, food taboos lead to iron deficiency which is associated

with impaired psychomotor development, decreased cognitive function and negative behavioral changes. Food taboos are often related to foods of animal origin (Gadegbeku et al., 2013). Dependence on plant-based foods for iron nutrition may result in high prevalence of iron deficiency (Tatala, & Ndossi, 2004), particularly in areas that experience drought such as Bolero. From a climate variability standpoint, the major challenge for micronutrient deficiencies is decreased crop production and the outcome will be a diet composed of poor nutritional value (Thompson et al., 2010).

There are various ways of coping with food restrictions. The Lese-women in Africa cope by either secretly discounting them or by eating prophylactic plants that supposedly prevent consequences of eating tabooed foods (Bentley, 1999). When women are menstruating, cooking is done by mother in-law, sister in law or daughter, male member or woman from the same village (Sharma, 2013).

While some studies have been conducted on food taboos (Onuorah & Ayo, 2003; Gadegbeku et al., 2013; Parmar et al., 2013 & Demissie et al., 1998), no study has been conducted in Malawi to map out food taboos; how they shape dietary behavior and influence adaptive capacity. Moreover, the studies targeted one category of people, making it difficult to tell the category which was most affected by the taboos within the study population. This study had cut across the whole human lifecycle from conception to adulthood. The study was premised on Modernization and Feminist theories. Modernization theory argues that third world countries cling to traditional social and economic development models which are not conducive to economic development. The main reason for lack of development is third world countries' own practices. The theory, further argues

that the heavily traditional third world societies do not believe in progressive improvement, they just live as their ancestors did which results in subsistence economic structures, widespread poverty and no process towards improvement (Moyo & Gonye, 2011). Feminist theory believes in the social, political and economic equality of men and women, seek to understand causes, means and results of gendered inequality and hope to develop effective ways to improve women's conditions. The theory charge that cultural ideologies favor men and that men benefit from the subordination of women, despite great disparities that exist in the advantages accruing to men in relation to women (Gardiner, 2004).

CHAPTER THREE: METHODOLOGY

3.1 Choice of site and description

The study was conducted in Lundu and Bolero-A sections in Rumphi District, Northern Malawi (Figure 1). Lundu is a remote section where food taboos still persisted while Bolero-A is a Peri-urban section for contrast on prevailing food taboos. The sections were under Bolero Extension Planning Area (E.P.A). The EPA had a population of 58,550 people, 11,710 farm families, 12 sections, 112 villages and an average of 5 persons per household. Women constituted 51% of the population. The main livelihood activity was farming which accounted for 65% of rural poor's income. Average land-holding size was 2.7 hectares per household (Mataya et al., 2014)). Bolero was chosen as a study site because it is predominantly a Tumbuka speaking community (over 95%) whose traditional norms and practices, including farming and food, had been influenced and shaped by culture, identity and social values. Bolero strictly followed a patrilineal system which promoted high respect of man and had defined food and diet for him in its traditional norms, beliefs and taboos. Besides, Bolero was experiencing frequent droughts, which were tremendously affecting household food security and nutrition (DCCMS, 2014).

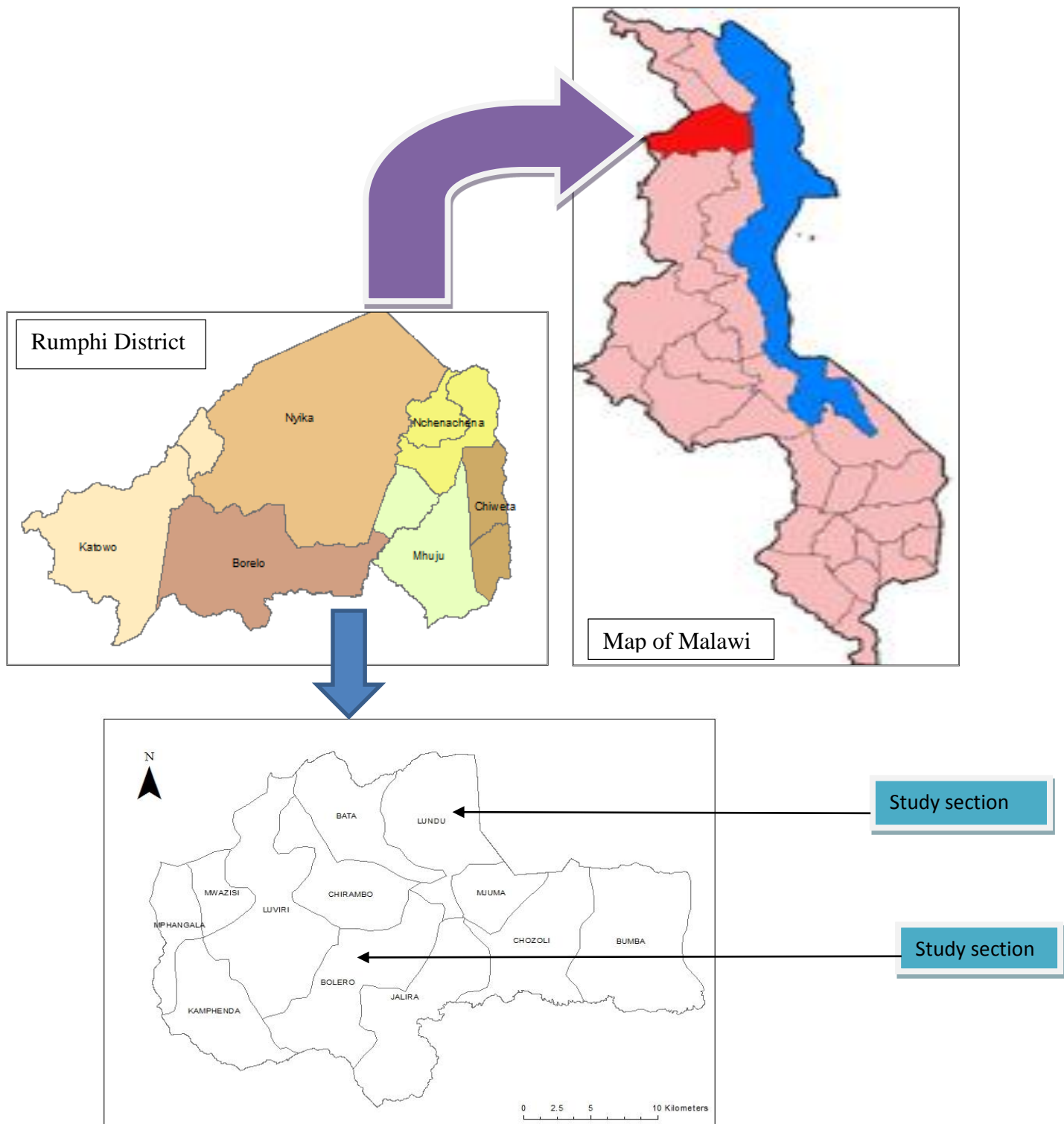


Figure 1: Map of Bolero E.P.A. showing study sections

Source: Mataya, et al. (2014)

3.2 Sample size, description and sampling procedure

One hundred respondents (37 men & 63 women) participated in the study. Sixteen were Key informants from five villages:- Chakoma, Chilongozi, Matupi, Kapingiri and Mwajonyanga; forty-nine Focus group discussion (FGD) respondents were drawn from six villages:- Kapingiri, Chakoma, Magwada, Yapalaka, Cheyama and Magomero in Lundu section while 35 FGD respondents were from eleven villages:- namely Mbabanjala, Chilongozi, Ndembera, Chiziwa, Mtaziwa, Kacheche, Chimbuyako, Kayawinda, Kasawambe, Mwachirimba and Bongololo in Bolero-A section. The villages were selected based on proximity to the discussion venues.

Fourty-two percent of all respondents were aged above 45 years; forty percent between 32-45 years and 18% between 18-31 years old. Sixty two percent of respondents were Roman Catholics. Eighty one percent were farmers. Ninety five percent were Tumbuka's. The majority had attended primary school (63%) while 80% of respondents were married (Annex 8.7). Purposive sampling was used to select respondents who were familiar with prevailing food taboos (Creswell, 2007). More women were involved because preparation of meals was generally women's responsibility (Muwamba, 2014).

3.3 Data collection methods

Mixed methods of data collection were used to increase validity. Qualitative data was collected between June 2014 and January, 2015 to gain an in depth picture of food taboos. Community dialogue workshops, desk review of latest journal articles and internet resource (Web of Science, Google Scholar, NUIM online library, Mzuzu University Library and Freefullpdf site) generated an overview picture of food taboos (Kothari, 2004). Two community dialogue workshops on climate variability, culture and food security were organized for extension staff; Lead farmers;

Traditional leaders and healers; Village and Area Development Committees and Area Stakeholder Panel. The workshops were attended by 81 participants (57 men & 24 women). Information from the workshops and desk review guided formulation of Key Informant Interview (KII) guides. Six KII's were conducted with traditional leaders, healers, Government extension and health staff and women's forum coordinator to gain insights on food taboos (Bernard, 2006). Insights from KII's fed into formulation of FGD guides. FGD's encouraged elaboration and allowed exploration of prevailing food taboos (Wilkinson, 2003; Delyser et al., 2010; Coetzee et al., 2014; Morgan, 1997 & Stevenson et al., 2007). Six FGD's were held in groups of between 6-12 (Ward & Atkins, 2002) older (>45 years); middle aged (32-45 years) and young (18-31 years) men and women to enable participants speak freely especially women (Ambjornsson, 2011). Interviews and discussions were conducted in Tumbuka language using pre-tested guides (Annexes 2-4) with non-participant's households to establish validity (Masadeh, 2012) and recorded using an IC Sony recorder backed up by an Android phone and written notes to avoid losing data (Nielsen & Reenberg, 2010) when the venue was noisy due to rains. The discussions and interviews were professionally transcribed into English to maintain meanings.

Participant observations implied continuous collection of data by way of investigator's own observations on intra-household food distribution (ACAPS, 2012) and informal conversations (Johnson, Dunlap & Benoit, 2010). Before discussions and interviews, respondents completed a demographic questionnaire (Annex 1) on sex, age, religion, ethnicity, educational level, income, occupation and marital status (Murphy & Thompson, 2009) whose information assisted in interpretation of results.

Table 1: Data Collection Methods and type of data collected

Data collection method	Type of data collected
Community dialogue workshops	<ul style="list-style-type: none">• Crop and livestock production taboos; food preparation and consumption taboos• How climate change affect food security and nutrition.• Foods included in the diet due to climate variability
Key informant interviews	<ul style="list-style-type: none">• Prevailing food taboos• Reasons behind the taboos• Impact of food taboos on dietary intake• Consequences of breaching the taboos• Nutrition interventions
Focus group discussions	<ul style="list-style-type: none">• Prevailing food taboos• Reasons behind the taboos• Impact of food taboos on dietary intake• Influence of food taboos on adaptive capacity• Coping/adaptation strategies to food taboos• Foods included in the diet due to climate variability
Participants Observations	<ul style="list-style-type: none">• Intra-household food distribution• Type of meal and composition• Foods included in the diet due to climate variability

3.4 Ethical Consideration

The research was approved by Mzuzu University's Department of Forestry. The purpose, procedure, confidentiality, benefits, participants rights and time period for the study was explained to respondents (Murphy & Thompson, 2009). Informed consent was sought through signed forms after one of the respondents in each group loudly read through the forms (Annexes 5&6).

3.5 Data analysis

Data was analyzed by thematic content analysis, a method of analyzing qualitative data (Stolz, 2011: 44). Responses from FGD's and KII's were typed and cleaned up of any material that was outside the scope of the study. The principle researcher (MM) developed general themes guided by research objectives and assigned codes to operationalize the themes. To enhance validity, the raw text was shared with an independent researcher (KH). The two researchers (MM and KH) independently read through the text several times to gain an understanding of specific themes. Then specific themes were created from paragraphs and sentences in specific text segments and grouped according to general themes by copy and paste. The team shared and harmonized proposed themes (Strauss & Corbin 1990; Corbin & Strauss, 2008; Hruschka et al., 2004; Naidu & Nzuzza, 2014; Thomas, 2003; Puoane et al., 2006; Mwangome et al., 2010 & De Sa et al., 2013)). Appropriate quotes for the most important themes were identified and included in the report. To ensure anonymity, respondents were given pseudonyms (Abubakar et al., 2011). Demographic characteristics data for respondents was processed using SPSS and analyzed using descriptive statistics (Fisher & Marshall, 2009). To further enhance validity, results were shared with Government extension staff and Chikulamayembe women's forum members who commented on the preliminary report. A comparison with previous research findings on food taboos was made for triangulation purposes (Thomas, 2003).

CHAPTER FOUR: RESULTS

Three general themes emerged from the findings: Prevailing food taboos, effects of food taboos on dietary intake and adaptive capacity and coping strategies to food taboos.

4.1 Prevailing food taboos

Respondents cited a number of food taboos which were categorized into four: - Intra- household food distribution, food and livestock production, preparation and consumption.

4.1.1 Intra - household food distribution

The FGD's, KII's and participant's observations revealed that nutritious meals were served to men while woman together with children ate food that was inadequate in quantity and quality. For example, when relish was a chicken, men were served with the best nine chicken parts- drumsticks, breast, back of chicken and upper legs. The woman shared the 11 remaining parts with children which catered for only one-two meals depending on family size. The husband ate the 8 reserved parts for 4 days when the woman and children had resorted to eating vegetables. The chicken back, which Tumbuka's traditionally regarded as the most important part couldn't be eaten by anyone apart from the husband. The part was served last as an indication to the husband that the chicken had finished from the pot. The internal dynamics of serving men nutritious foods was that men required a lot of energy during sex as compared to women. During traditional ceremonies, such as *Tisanguluske Chikulamayembe* which meant making the traditional authority happy, traditional leaders who were all men were given priority by serving them more relish than the rest of the delegates as a way of showing respect.

4.1.2 Food and livestock production taboos

Women didn't plant bananas (*Musa spp.*) in Bolero-A. The belief was that the planted bananas could prevent women from divorcing abusive husbands. In both study sites, women who had not miscarried or had at least one of the child not died before, were forbidden to grow ground beans (*Voandzeia subterranea*) to avoid death of a family member. Menstruating women were restricted from working in groundnut gardens and harvesting pumpkin, bean leaves and tomatoes because plants wouldn't yield. Harvesting of pumpkin leaves, green maize and sugarcanes commenced with ceremonies conducted by elders otherwise thunderstorm could strike people to death and heavy winds could destroy houses.

KCFG (Man>45 years old): *Pambele tindayambe kurya mphangwe ya nyungu, ngoma za syowa na mijuwa, walalawalala wakwenera kukombola dankha chifukwa pala wandakombole, leza wakuwa kweniso mphepo yikuwiska manyumba pachikaya.*

Menstruating women and girls didn't go round livestock kraals else the livestock would give birth to dead litter. Women were forbidden to rear pigeons because pigeons were believed to be marriage binders hence fit to be reared by men only in Bolero-A. However, the internal dynamics for the restrictions was to prevent women from owning assets. Ownership of livestock by women could empower them economically leading to men losing control over the women.

4.1.3 Food preparation taboos

In Lundu and Bolero-A sections, menstruating women and girls were restricted from adding salt to relish and prepare foods that contained fats and sugar (meat, fish, vegetables with groundnut flour, tea and sweet beer). The belief was that those who ate the foods could swell and men's

complexion could turn black. A widow was restricted from cooking for one month to allow decomposition of her husband's body in the grave else those who ate her food could swell and children could suffer from a disease called 'thola' which was characterized by passing out of white loose stools and sunken eyes. The internal dynamics of the taboos were to allow women rest from cooking during menstruation and widowhood.

SCKI (Traditional doctor >45years): *Chokolo chanakazi chikuphika chara kwa mwezi kulindilira mwanalume pasi pala kuti wavunde dankha.'*

4.1.4 Food consumption taboos

To show love and respect to husbands, women were restricted from eating chicken back in both study sites. When probed, men revealed that the major reason for the restriction was *uzukusi*, which meant monopoly.

DCKI (Village head >45 years old): *Wanakazi wakurya chisondoni chara chifukwa chikulongola chitemwa na ntchindi kwa afumu wawo.*

Lundu and Bolero—A menstruating women were discouraged from eating pork for fear of experiencing recurring menstruation. A pregnant woman was restricted from consuming nutritious foods to avoid difficult labour due to fat baby while twin bananas could lead to delivery of twin babies which was shameful to the family.



Figure 1: Twin banana

Eating sugarcanes, bananas and drinking milk could plaster babies skin with white stuff while groundnuts could lead to cracked baby's skin in Bolero-A. Drinking sweet beer could suffocate the baby while eating mangoes could cause baby's yellow skin. Meat bones could delay detachment of umbilical cord in Lundu and caterpillars could lead to delivery of a baby with gray hair and salivating in both sections.

RMFG (Woman 32-45years old): *Pala mwanakazi wapathupi warya mapala, mwana wakubabika na nyivwi kumutu kweniso wakufuma vimadozo rya rya!*

Eating pork and pigeons by pregnant women could lead to delivery of a snoring and shivering baby respectively. Eating mice could cause baby skin rashes in Lundu and Bolero-A. Consuming honey could cause miscarriage or abortion in Bolero-A. The belief was that honey was made up of pollen from poisonous flowers while consuming eggs could lead to delivery of a bald-headed baby.



Figure 2: Eggs

In Lundu and Bolero-A, when a lactating mother had spent a night away from home, she couldn't breastfeed the child again because the child would fall sick after feeding on rotten milk. The internal dynamics of the taboo was to discourage women from leaving young babies unattended. Under five children were forbidden to eat eggs because of the belief that they caused convulsions. In Lundu, pumpkins led to *chitafya*, meaning swelling of the stomach in under-five children. Girls and boys were forbidden to eat testicles of goats for fear of increased sexual desire. Consumption of chicken gizzards and necks could block the birth canal in girls and brought bad luck in boys who would no longer marry the proposed girl. Men were forbidden to eat lamb for fear of salivating. Sheep were believed to be dull animals so if a man ate lamb, would also become dull. Some men didn't consume catfish due to disgust, allergy and vomiting.

PMFG (Man, 32-45years old): *Ine nkhurya milamba yayi chifukwa yikunipa mayawira, meaning that the man didn't eat catfish due to allergy.*

In Lundu, men and boys were restricted from eating food from the pot for fear of developing breasts like women and consuming egg plants (*Solanum melongena*) because of the belief that egg plants caused testicles to swell.



Figure 4: Egg plants



Figure 5: Cowpeas

A daughter in law was discouraged from eating any food before her father in-law to show respect. A son in-law was not served eggs, okra and ground beans by people from the wife's side. Serving him such foods was a sign of disrespect among the Tumbuka and the son in-law would shout at, beat up his wife or send her back to her parents for counseling. Traditional leaders, healers and some men refused to eat catfish (*Clarias garipenus*), okra (*Hibiscus esculentus*), pumpkin leaves, cassava leaves, chicken gizzard and cow peas (*Vigna unguiculata*) in the study sites. It was believed that the foods would dilute traditional medicine that protected bodies from witchcraft harm.

PMFG (Man, 32-45years old): *Traditional leaders, healers and some men fortify their bodies with traditional medicine through tattoos. They can die from witchcraft as traditional medicines are diluted after eating the forbidden foods.*



Figure 3: Okra

Traditional healers refused to eat *nsima* prepared from diesel maize milled flour, foods cooked using three stone method and maize cobs for fear of driving away the spirits that enabled them perform functions of witchdoctor in Lundu and Bolero-A sections.

RCKI (Traditional healer, 32-45 years old): *Zing'anga ise tikurya vakurya vakuphika pamafiya na vyakuphikira vigamu yayi chifukwa vikutitondeska kuchima.*

Seventh Day Adventists were restricted from eating pork, catfish, mice, frying ants, rabbits and ducks in the study sites. The Bible regarded them as unclean in Deuteronomy 14vs 8-10 and

Leviticus 11vs 6-10 so if taken, the foods would reduce holiness. Muslims too didn't eat pork and ducks for religious reasons.

4.2 Effects of food taboos on dietary intake and adaptive capacity

4.2.1 Positive effects

The >45 years old men and women in Lundu and Traditional Authority at Bolero-A stressed that there were no negative effects of food taboos. They wished all food taboos were preserved.

CKKI (Traditional Authority >45 years old): *Extension workers should sensitize the community to preserve the food taboos. Elimination of food taboos is an influence from Western culture.*

The major reason for clinging to food taboos by the elderly might be to preserve culture.

4.2.2 Negative effects

The 18-31 and 32-45 years old men and women in both sections, traditional leaders, Extension and Health workers and members of Chikulamayembe women's forum mentioned that there were no positive effects of food taboos. Food taboos led to low crop yield, less income from sale of farm produce, consumption of low nutrient diets and sometimes no food at all even if food was available.

PCKI (Village headman >45 years old): *Paliye na uwemi yayi wa midauko, paliye, meaning there was no positive impact of food taboos, not even one.*

TMFG (Man, 32-45 years old): *Kuti urye chakurya chakukumbikira mthupi lako, ukurya cha! chifukwa vyakuyenera mthupi lako wukuvikana chifukwa cha midauko.*

The response from young and middle group might be influenced by the nutrition and sensitization messages on the importance of consuming nutritious diets that were disseminated by Bolero Health Centre Staff.

4.3 Coping strategies to food taboos

4.3.1 Discounting the taboos

Most 18-45 years old women from Bolero-A discounted the taboos as compared to the 18-45 years old women from rural Lundu. The women violated the taboos by cooking while menstruating or in postpartum while pregnant women ate tabooed foods in secret. According to the women, reasons for the food restrictions were outdated. The response might indicate good utilization of knowledge on good nutrition disseminated by the Health Centre and Chikulamayembe women's forum unlike Lundu respondents who were a bit far and might not have benefited much from the two facilities.

GKFG (Pregnant rural woman, 18-31 years old): *I'm now restricted from eating meat bones. If I discover there's a bone in the pot, I pick it, rush inside the house and eat it while hiding because bones are delicious.*

The 18-45 years old women in Bolero-A section, sometimes, served drunken husbands any chicken part. The belief was that when drunk, husbands couldn't realize the type and number of chicken parts they had been served.

DMKI (Peri-urban woman, 18-31 years old): *When my husband is drunk, I serve him any chicken part. I have children now and can't manage to keep many parts of a chicken for him alone.*

4.3.2 Cooking by relatives and neighbours

The study revealed that sometimes, a neighbour's daughter was invited to cook or add salt to relish or a daughter, husband or relatives did the cooking in both sections.

MMFG (Woman >45 years old): *When you are not cooking, either your daughter or neighbor cooks for you.*

MGFG (Woman > 45 years old): *If you are only two at home, a husband prepares food for both of you.*

While the strategy was encouraged by the >45 years old women, most of the 18-31 and 32-45 years old women in both sites lamented that the young and middle aged women died of hunger when felt ashamed to engage somebody to prepare food for them.

4.3.3 Abide by food taboos

The discussions and interviews revealed that the >45 years old and most women between 18-31 and 32-45 years old adhered to food taboos in Lundu by not cooking during menstruation and postpartum periods, consuming non tabooed foods only, completely weaning off the baby after spending a night away from home and when pregnant and stayed hungry when women were shy to call upon a neighbour or neighbours child to prepare them food. The major reason for adherence to food taboos was to maintain social status.

4.3.4 Advance food preparation

In Lundu, food for widows, menstruating and postpartum women and girls was prepared in advance to be eaten when care takers were away in the fields or had gone to drink beer.

4.3.5 Use of prophylactic plants and traditional medicine

When traditional doctors travelled outside Lundu and Bolero-A, they applied traditional medicine to foods before eating or inserted the medicine into their bodies through tatoos.

RCKI (Traditional doctor, 32-45years old): *We insert nkhamama through a tattoo on the chest and back to protect ourselves from swelling in case we consume foods prepared by menstruating and postpartum women, girls and widows. Nkhamama is iron oxide found along the river banks.*

4.3.6 Eating alternative foods

Respondents who could afford alternative foods ate small fish locally known as *usipa* (*Engraulicypris sardella*) or soya pieces instead of catfish. However the discussions, interviews and observations revealed that most households could not afford alternative foods due to low income and food production.

DCKI (Village headman >45 years old): *Honestly speaking, people who are restricted from good foods live a miserable life. Often times, no alternative foods are eaten. For example, when men eat eggs, women and children eat dried vegetables.*

CHAPTER FIVE: DISCUSSIONS

5.1 Prevailing food taboos

The study found out that a number of food taboos persisted in both study sites with more adherence to the taboos reported in Lundu than Bolero-A. This means that nutritional deficiencies in Lundu were more likely to be grounded in power structures of gender and that of rising food prices and inadequate incomes in Bolero-A. Reasons behind adherence ranged from preserving identity, monopolize a resource, promote hygiene and good health, sustain marriages, relieve menstruating and postpartum women from cooking, pacify spirits, prevent mothers from delivering deformed babies and maintain holiness. Overall, women were most affected by the taboos due to gender order of the study sections that gave priority to male in food distribution system. This was in tandem with Knox and pinch, (2006) and Coates et al., (2010) who highlighted that the gender order also disadvantages women through gendered food allocation that often privileges males. The gender dimensions of obedience, dependency and submissiveness deterred women from making independent decisions on food choices as a result, men monopolized delicacy foods by declaring them taboo for the women which is in concordant with Ecofeminism that rests on the basic principal that patriarchal philosophies are harmful to women and children and that patrilineal philosophy emphasizes the need to dominate and control females. The gender order might disempower women economically by confining women to the private sphere of the home (cooking) while men were often connected to the public sphere which contradicts the Socialist feminism theory that advocates for equal opportunities for women in the public sphere.

5.2 Effects of food taboos on dietary intake and adaptive capacity

5.2.1 Intra - household food distribution

The culture of serving nutritious meals and many chicken parts to men exposed women and children to high risk of under nutrition, especially pregnant women whose protein requirement was high particularly for growth of foetus. While women acknowledged that men required a lot of energy during sex, it was argued that women too required nutritious meals to meet physiological needs such as pregnancy, lactation and menstruation.

5.2.2 Food and livestock production taboos

Restricting menstruating and postpartum women from harvesting or moving in pumpkins, tomatoes and bean gardens resulted into suspension of small-scale businesses of selling vegetables which might lower income for buying food to supplement production in case of dwindling food production due to climate variability, led to late weeding of the crops and discouraged integration of maize with pumpkins, beans and groundnuts, one of the adaptive strategies for improving crop yields. Restricting growing of ground beans to a woman whose child either passed away or the woman miscarried discouraged young women from growing the beans. Ground beans contained high protein, carbohydrates, vitamins and minerals and provided relatively high yields in soils of poor quality. As drought tolerant crops, the beans might be suitable for Bolero which was experiencing frequent droughts. Restricting women from growing bananas deprived households of income, carbohydrates and folate. Banana plants could withstand floods so if planted along flooding rivers, might improve food availability. Conducting ceremonies before harvesting of pumpkin leaves, green maize and sugarcane deprived households of food especially when the ceremonies had delayed. Forbidding menstruating women and girls from going round goat, pig and cow kraals and rearing pigeons might contribute to reduced livestock ownership, one of the

determinants of adaptive capacity. Culturally, property and power were concentrated on men, therefore, women were not allowed to own property as women were considered having weak minds hence poor property managers.

5.2.3 Food preparation and consumption taboos

The study found out that pregnant women had a range of forbidden foods, mostly for fear of difficult labour; abortion/miscarry; foetus discoloration; delivering deformed babies and vomiting. This contradicts Asian and Indian women who do not avoid any particular foods during pregnancy (Holmes, et al., 2007 & Agrahar-Murugkar & Pal, 2004). The observations that tabooed foods were of animal origin and main source of protein, iron, fat and calcium concurs with findings by other investigators (Hailelassie et al., 2013; King, 2000; Shrimpton, 2006; Fessler & Navarrete, 2003; Nord & Parker, 2010 & Black et al., 2008). Low protein intake might lead to low birth weight in babies who might die before reaching their fifth birthday while low iron intake might lead to anaemia in pregnant women. This confirms literature that indicates that iron deficiency anaemia is the main cause of death in case of haemorrhage during labor among women in developing countries (Lakshmi, 2013; Sholeye, et al., 2014; Yip, 2000; Scholl & Really, 2000). Restricting pregnant women from eating bones could deprive women of calcium, which was essential for keeping bones healthy. According to Das (2010) deficiency of calcium leads to bone deformity. Interestingly, lactating women ate nutritious foods for the health of herself and the baby, contrary to Asian women who adhere to food taboos after delivery (Holmes et al., 2007) and in line with finding that no food taboos existed among Indian lactating women (Agrahar-Murugkar & Pal, 2004).

Abrupt complete weaning off of the baby after a mother had spent a night away from home and when pregnant, might psychologically affect the baby and deprive him/her of protein from breast

milk. Such children might suffer from under nutrition and might later, not positively contribute to national development due to poor performance in school. The findings were similar to that of Ulak et al. (2012); Onyesom et al. (2008) and Onyesom (2007) that breast milk has just the right amount of fat, sugar, water and protein that is needed for a young baby's growth and development. Restricting menstruating and postpartum women, girls and widows from adding salt to relish or cooking and forbidding a daughter-in-law from eating any food before her father-in-law to show respect might lead to low or no food intake for good health, increased work capacity, replacement for lost iron through menstruation and building extra iron for pregnancy and lactation. Traditional doctor's refusal to eat food prepared using maize cobs might exert pressure on women who had to travel long distance to fetch for scarce firewood instead of investing the time in other livelihood activities. Traditional doctor's refusal to eat nsima prepared from diesel maize milled flour led to processing of maize flour through pounding in a mortar which was not only primitive but also labour intensive.

5.3 Coping strategies to food taboos

Bolero community coped with effects of food taboos by using prophylactic plants and traditional medicine just like Lese-women in Africa (Bentley, 1999), engaging relatives and neighbours to do the cooking as in Sharma (2013), abiding by food taboos, advance food preparation, eating alternative foods and violating the taboos which supports the idea that some of the taboos are gradually being abandoned by the population in urban areas (Onuorah & Ayo, 2003). Education might have contributed to taboo violations as most of the 18-31 years old were educated; some had attained secondary school education and most women had received nutrition messages through ante-natal clinics as compared to the >45 years old women. However, if discovered that the taboos had been violated, women were either sent back to their people to be counselled or ordered to pay

a chicken, goat or cow which might exacerbate food insecurity as it might lower livestock numbers which could have bailed households out during hungry periods. By clinging to food taboos, the >45 years old women didn't believe in progressive improvement. They wanted to continue living as their ancestors did which might result in subsistence economic structures, widespread poverty and no process towards improvement as per the Modernization Theory (Moyo & Gonye, 2011). Cooking food by relatives and neighbours had its own challenges. Sometimes, menstruating and postpartum women, girls and widows died of hunger when care takers returned home late from the gardens, drinking beers or when women felt shy to call upon a neighbour to add salt to relish or cook food for them. Advance preparation of meals for the widows was a welcome development. However, women lamented that the food was eaten while cold hence ended up eating less. Diet adjustments was a challenge due to limited food sources and income. Some foods such as cassava, sweet potatoes, bananas, sorghum, millet, maize husks and mice were included in the diets amidst climate variability. However, the foods were still new hence not widely accepted by the community.

CHAPTER SIX: CONCLUSION

The study found out that a number of food taboos persisted in both study sites with more taboo adherence reported in Lundu than in Bolero-A. This means that nutritional deficiencies in Lundu were more likely to be grounded in power structures of gender and that of rising food prices and inadequate incomes in Bolero-A. Reasons behind adherence ranged from preserving identity, monopolize a resource, promote hygiene and good health, relieve menstruating and postpartum women from cooking, pacify spirits, prevent mothers from delivering deformed babies and maintain holiness. Most Bolero-A young and middle aged women violated the taboos which might put them at an advantage of meeting nutritional requirements as compared to adults. . Education might have contributed to taboo violations as most of the 18-45 years old were educated and most women had received nutrition messages through ante-natal clinics as compared to the >45 years old women. In both study sites, the elderly clung to food taboos to preserve identity. By clinging to food taboos, respondents didn't believe in progressive improvement, they wanted to continue living as their ancestors did which might result in subsistence economic structures, widespread poverty and no process towards improvement. Overall, women were most affected by the taboos due to gender order of the study sections that gave priority to male in food distribution system. The gender dimensions of obedience, dependency and submissiveness deterred women from making independent decisions on issues affecting food and livestock production and food consumption. Food and livestock production taboos might reduce women's adaptive capacity to climate variability through reduced yields, income and limited crop and livestock diversification while as intra-household food distribution, food preparation and consumption taboos might contribute to consumption of low nutrient diets, leading to under nutrition especially in pregnant women who had a range of tabooed foods. Although coping strategies with food taboos were in place, they were insufficient to guarantee access to adequate diets and improved adaptive capacity.

Engagement with respondents through FGD's, KII's and participant's observations made respondents aware of the devastating impact of food taboos on dietary intake and adaptive capacity of households. Having realized the devastating impact of food taboos, respondents campaigned against adherence to harmful food taboos and advocated for elimination of the harmful taboos. Respondents, further, recommended that sensitization messages on good nutrition should be intensified and that harmful food taboos should be eliminated or modified through advocacy and lobbying the elderly, men, traditional leaders and healers who perpetuated food taboos for the attainment of balanced diets. Good nutrition would improve quality of life, avert death and reduce pressure on the health system thereby enabling individuals to contribute to economic development of a country through active participation in development activities. Programs should be implemented to empower women to generate and have control over the resources to purchase food and decision-making power on food consumption.

CHAPTER SEVEN: RECOMMENDATIONS

The nutritional status of households in the study areas should be assessed to enrich current findings. Further research should be carried out to assess the intersection of food taboos with gender and nutrition issues, power influence on intersection of food taboos with gender and nutrition, how women's cultural life and household economy relate to the wider picture of social, economic and cultural transformation in Malawi, the impact of changes in traditional beliefs and how intergenerational and gender issues intersect?

CHAPTER EIGHT: REFERENCES

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CHAPTER NINE: ANNEXES

Annex 9.1: Demographic questionnaire for FGD's and KII's

Name of participant-----Village-----

VDC----- GVH-----

T/A-----District----- Location-----

1. Sex of participant

1 = Male 2 = Female

2. Number of family members

1 = 1-2 2 = 3-5 3 = 6-10 4 = more than 10

3. How old are you?

1 = 18 to 31 yrs 2 = 32-45 yrs 3 = 45 & above.

4. What is your Religion?

1 = Roman Catholic 2 = C.C.A.P 3 = Seventh day 4 = Anglican
5 = Islam 6 = Pentecostal 7 = Other (Specify) -----

5. What is your marital status?

1 = Never married 2 = Married 3 = Separated 4 = Divorced 5 = Widowed
6 = Deserted

6. What is the highest level of education?

1 = No education 2 = Primary school 3 = Secondary School 4 = Tertiary
5 = Adult literacy

7. What is your ethnicity/tribe?

1 = Chewa 2 = Senga 3 = Tumbuka 4 = Ngoni
5 = Yao 6 = Tonga 7 = Sena 8 = Nkhonde
9 = Lomwe 10 = Lambya 11 = Other (specify) -----

8. What is your occupation?

1 = Farming 2 = Traditional healer 3 = Traditional leader
4 = Extension worker 5 = Other (specify) -----

9. What is your annual income?

1 = MK0 -MK5,000

2 = MK5, 001- MK10,000

3 = MK10,001-MK15,000

4 = MK15,001-MK20,000

5 = MK20,001-MK25,000

6 = >MK25,000

Annex 9.2: Key Informant Interview guide for traditional doctors and healers

SECTION 1: MEAL COMPOSITION, SOURCE OF FOOD AND MEAL FREQUENCY

1. What are the mostly consumed foods?

Foods mostly consumed	Method of preparation

2. What are the mostly consumed snacks and beverages?

Snacks & beverages mostly consumed	Method of preparation (if any)
------------------------------------	--------------------------------

3. What are the mostly consumed Foods/snacks and beverages during special occasions?

Foods/beverages/snacks consumed mostly consumed during special occasions (weddings, Christmas, Religious gatherings & installation of chiefs)	Method of preparation

4. How many meals a day do you usually eat during pre-harvest and post harvest period?

Preharvest _____

Postharvest _____

5. How do you obtain your food? (Farming, purchase, gifts from friends & relatives)

6. Do you always have enough food to last you the whole year? Why do you say so?

7. Who mostly does the cooking? Why?

8. In your understanding, what is the meaning of a nutritious/ balanced diet?

9. Do you consume nutritious diets in your households? Give reasons for your answer.

10. What diseases can you suffer from if you do not consume nutritious diets?

SECTION 2: INTRA- HOUSEHOLD FOOD DISTRIBUTION

11. How is food eaten in the household? (Everybody eats from the same plate; the husband and wife eat from the same plate while children eat alone; the husband eats alone, while the wife eats from the same plate with children, men & boys, women and girls).

12. Do all household members eat same type of foods? If no, mention who is given what meals and why?

13. Do all household members eat at once? If no, who eats first and last? Why?

SECTION 3: FOOD TABOOS, REASONS BEHIND THE TABOOS & CONSEQUENCES OF BREACHING THEM.

14. Name taboos related to food harvesting, preparation and consumption for the following categories of people, reasons behind the taboos and consequences of breaching the taboos.

Categories of people	Food taboos	Reasons behind the taboos	Consequences of breaching the taboos
Women			
Girls			
Daughter in laws			
Menstruating women & girls			

Pregnant women			
Lactating women			
Women in post-partum(just delivered a baby)			
Children (Under fives)			
Men			
Boys			
Son in laws			
Local /traditional leaders			
Traditional (witch) doctors			
Religious leaders			
Widows			
Widower			
Other (specify)			

SECTION 4: EFFECTS OF FOOD TABOOS, COPING AND ADAPTATION STRATEGIES

15. What are the positive effects of adhering to the food taboos?

16. What are the negative effects of adhering to the food taboos?

17. Which household members are most affected by the taboos? Why?

18. How do you cope and adapt to the negative impact of food taboos? (E.g. Violating the taboos; cooking by mother in-law, sister in law or daughter, male member or woman from the same village when woman is menstruating; by eating prophylactic plants that supposedly prevent the consequences of eating the tabooed foods, eating foods with similar nutrients to tabooed ones, stay without cooking and eating even if food is available).

SECTION 5: MODIFICATION, ELIMINATION AND PRESERVATION OF FOOD TABOOS

19. Which food taboos require modification?

20. Which food taboos require elimination?

21. Which food taboos require preservation?

22. Who is responsible for the modification, elimination and preservation of food taboos?

23. What activities should be done to modify and eliminate the taboos?

24. What do you understand by the term climate variability?

25. Is Bolero experiencing climate variability? If yes, what climate variability related hazards are experienced?

26. What is its impact on food production?

27. Do you think you have adjusted your diets amidst climate variability? If yes, which foods are now included in your diets due to climate variability?

THANK YOU FOR YOUR TIME AND VALUABLE CONTRIBUTIONS

Annex 9.3: Key Informant Interview guide for extension & health staff

SECTION 1: DEFINITION OF NUTRITIOUS DIET AND MALNUTRITION

PREVALENCE RATE.

1. What is the meaning of a nutritious/balanced diet?

2. Do households consume nutritious diets? Give reasons for your answer.

3. What percentage and category of population suffer from malnutrition? Name the form of malnutrition and causes?

Category	Form of malnutrition	Percentage	Causes

SECTION 2: FOOD TABOOS, REASONS BEHIND THE TABOOS & CONSEQUENCES OF BREACHING THEM.

4. Name food taboos for the following categories of people, reasons behind the taboos and consequences of breaching the taboos.

Categories of people	Food taboos	Reasons behind the taboos	Consequences of breaching the taboos
Women			
Girls			
Daughter in laws			
Menstruating women & girls			

Pregnant women			
Lactating women			
Post-partum women			
Children (Under fives)			
Men			
Boys			
Son in laws			
Local /traditional leaders			
Traditional (witch) doctors			
Religious leaders			
Widows			
Widower			
Other (specify)			

6. What interventions on dietary diversification are implemented in the area?

7. In the face of food taboos and climate variability, what other interventions can be implemented to ensure consumption of nutritious diets?

SECTION 3: EFFECTS OF FOOD TABOOS, COPING AND ADAPTATION STRATEGIES

8. What are the positive effects of adhering to the food taboos?

9. What are the negative effects of adhering to the food taboos?

10. Which household members are most affected by the taboos? Why?

11. How do households cope and adapt to the negative impact of food taboos? (E.g. Violating the taboos; cooking by mother in-law, sister in law or daughter, male member or woman from the same village when woman is menstruating; by eating prophylactic plants that supposedly prevent the consequences of eating the tabooed foods, eating foods with similar nutrients to tabooed ones, stay without cooking and eating even if food is available).

**SECTION 4: MODIFICATION, ELIMINATION AND PRESERVATION OF FOOD
TABOOS**

12. Which food taboos require modification?

13. Which food taboos require elimination?

14. Which food taboos require preservation?

15. Who is responsible for the modification, elimination and preservation of food taboos?

16. What activities/interventions should be done to modify and eliminate the taboos?

THANK YOU FOR YOUR TIME AND VALUABLE CONTRIBUTIONS

Annex 9.4: Focus group discussions guide

SECTION 1: MEAL COMPOSITION, SOURCE OF FOOD AND MEAL FREQUENCY

1. What are the mostly consumed foods?

Foods mostly consumed	Method of preparation

2. What are the mostly consumed snacks and beverages?

Snacks & beverages mostly consumed	Method of preparation (if any)

3. What are the mostly consumed Foods/snacks and beverages during special occasions?

Foods/beverages/snacks consumed mostly consumed during special occasions (weddings, Christmas, Religious gatherings & installation of chiefs)	Method of preparation

4. How many meals a day do you usually eat during pre-harvest and post harvest period?

Preharvest _____

Postharvest _____

5. How do you obtain your food? (Farming, purchase, gifts from friends & relatives)

6. Do you always have enough food to last you the whole year? Why do you say so?

7. Who mostly does the cooking? Why?

8. In your understanding, what is the meaning of a nutritious/ balanced diet?

9. Do you consume nutritious diets in your households? Give reasons for your answer.

10. What diseases can you suffer from if you do not consume nutritious diets?

SECTION 2: INTRA- HOUSEHOLD FOOD DISTRIBUTION

11. How is food eaten in the household? (Everybody eats from the same plate; the husband and wife eat from the same plate while children eat alone; the husband eats alone, while the wife eats from the same plate with children, men & boys, women and girls).

12. Do all household members eat same type of foods? If no, mention who is given what meals and why?

13. Do all household members eat at once? If no, who eats first and last? Why?

SECTION 3: FOOD TABOOS, REASONS BEHIND THE TABOOS & CONSEQUENCES OF BREACHING THEM.

14. Name taboos related to food harvesting, preparation and consumption for the following categories of people, reasons behind the taboos and consequences of breaching the taboos.

Categories of people	Food taboos	Reasons behind the taboos	Consequences of breaching the taboos
Women			
Girls			
Daughter in laws			
Menstruating women & girls			
Pregnant women			
Lactating women			
Post-partum women			
Children (Under fives)			
Men			
Boys			
Son in laws			
Local /traditional leaders			
Traditional doctors			
Religious leaders			
Widows			
Widower			
Other (Specify)			

SECTION 4: EFFECTS OF FOOD TABOOS, COPING AND ADAPTATION STRATEGIES

15. What are the positive effects of adhering to the food taboos?

16. What are the negative effects of adhering to the food taboos?

17. Which household members are most affected by the taboos? Why?

18. How do you cope and adapt to the negative impact of food taboos? (E.g. Violating the taboos; cooking by mother in-law, sister in law or daughter, male member or woman from the same village when woman is menstruating; by eating prophylactic plants that supposedly prevent the consequences of eating the tabooed foods, eating foods with similar nutrients to tabooed ones, stay without cooking and eating even if food is available).

**SECTION 5: MODIFICATION, ELIMINATION AND PRESERVATION OF FOOD
TABOOS**

19. Which food taboos require modification?

20. Which food taboos require elimination?

21. Which food taboos require preservation?

22. Who is responsible for the modification, elimination and preservation of food taboos?

23. What activities should be done to modify and eliminate the taboos?

24. What do you understand by the term climate variability?

25. Is Bolero experiencing climate variability? If yes, what climate variability related hazards are experienced?

26. What is its impact on food production?

27. Do you think you have adjusted your diets amidst climate variability? If yes, which foods are now included in your diets due to climate variability?

THANK YOU FOR YOUR TIME AND VALUABLE CONTRIBUTIONS

Annex 9.5: Voluntary informed consent form (English version)

I have been asked to participate in the study on ‘Cultural barriers to adequate dietary nutrient intake in Bolero, Malawi’ whose objective is ‘To assess the influence of cultural barriers on adaptive capacity of rural households dietary nutrient intake’. I agree to take part in answering questions on food taboos that are practiced and how food taboos influence dietary intake as well as being sound recorded. I fully understand the objective of the study and what my involvement means. I understand that I was chosen to participate in the study through random/purposive selection and that my participation is voluntary. I have the right to withdraw my participation at any point and do not need to give any reasons for my withdrawal. I understand that I will not directly benefit from participating in this study. I understand that the information gathered will be shared with academicians, decision makers and policy makers and that results of the study will be used to influence national policy as well as in the designing of Agriculture, Food security and nutrition programs that will take into consideration cultural requirements for my community. I understand that the information from my interview will be mixed up with that of my colleagues and that anything I say will not be traced back. I understand that the answers I give will not be used for any other purpose apart from research. I have been assured that my name will never be used during reporting. Now by signing this form, I give informed consent to participate in the research.

NO.	NAME	SIGNATURE/THUMB PRINT
1		
2		
3		
4		
5		

6		
7		
8		
9		
10		
11		
12		

Annex 9.6: Voluntary informed consent form (Tumbuka version)

CHILOLEZGO CHAKUTOLAPO LWANDE PA KAFUKUFUKU

Ine nafumbika kuti nitolepo lwande pa kafukufuku wa midauko ya chakurya na umo tikukhwaskikira na midauko pa karyero ka chakurya cha magulu gha nkhone na limoza (6) m'mabanja ghithu kuno ku Bolero m'boma la Malawi. Nkhuzomera kuzgora mafumbo ghose ghakukhwaskana na kafukufuku uyu. Nkhuzomerezga kuti wanitepe mazgu panyengo ya vidumbirano vithu. Napulikiska nkhanira chilato cha kafukufuku uyu, na kukhumbikwira kwa gawo ilo nitolengepo. Nkhumanya kuti nasankhika mwachisani-sani/ngwe munthu uyo wangapereka fundo zakwenelera pa midauko ya chakurya kuti nitolepo lwande pa kafukufuku uyu nakuti nkhwenera kuchita ntheura kwakuyana na khumbiro lane. Nili mwanangwa kuleka kutolapo lwande pa kafukufuku uyu pa nyengo yiri yose na kuti nkhwenera kupereka chifukwa icho nalekera yayi. Nkhumanya kuti nipokelengepo kalikose nga malipiro gha kutolapo gawo pa kafukufuku chara. Nkhupanikizga kuti vyakusangika vya kafukufuku uyu vizamkuperekeka ku walala wamasambiro na awo wakupanga malango. Ivyo visangikenge mu kafukufuku uyu vyamkuvwirapo kuchiska boma pakupanga malango na mapulogalamu gha ulimi, kuoneskeska kuti tina chakurya chakukwanira ndiposo tikurya chakurya cha magulu ghankhonde na limoza (6) mwakuyana na midauko ya mdera lane. Nkhumanyaso kuti vyose ivyo niyowoyenge vyamkusazgika na fundo za wanyane. Wanisimikizgira kuti vyose ivyo niyowoyenge visungikenge mwachisisi ndipo paliye uyo wangamanya kuti ndine nayowoya kweniso mazgolo ghose agho niperekenge, ghamkugwiriska ntchito pa kafukufuku uyu pera. Wanisimikizgiraso kuti zina lane lamkuzunulika chara mu lipoti laumaliro la kafukufuku uyu. Sono pakulemba zina lane/kudinda chidindo pa pepala ili, nkhuomera kuti nitolepo lwande pa kafukufuku uyu.

NAMBALA	ZINA	SIGINECHA/CHIDINDO
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

Annex 9.7: Summary of food and livestock production taboos

No.	Taboos	People taboos apply to	Reasons behind the taboos
1	Shouldn't harvest pumpkin leaves, tomatoes and bean leaves.	Postpartum, menstruating women and girls	Plants didn't yield
2	Shouldn't go round goat, pig and cow kraals.	Menstruating women and girls	Dead litter
3	Consumption of green maize, pumpkin and sugarcanes commenced with ceremonies.	Everybody	Thunderstorm and strong winds
4	Shouldn't grow bananas	Women	Failure to divorce abusive husbands.
5	Shouldn't rear pigeons	Women	Regarded as marriage binders hence reared by men only.

Annex 9.8: Summary of food preparation taboos

No.	Taboos	People the taboos apply to	Reasons behind the taboos
1	Don't add salt to relish and prepare foods that contain fats and sugar.	Menstruating women and girls	Swelling and men's complexion turn black.
2	No cooking for a month	Widows	Allow body decomposition
3	Nsima prepared from diesel maize milled flour; foods cooked using three stone open fire method and empty maize cobs.	Traditional doctors	Spirits of withdoctor stop abiding by them.

Annex 9.9: Summary of food consumption taboos

Food groups	Food taboos	People the taboos apply to	Reasons behind the taboos	Taboored food nutrients
	Chicken back	Women	To show love and respect to husbands.	
	Chicken gizzard	Traditional leaders	Die from witchcraft harm.	
		Girls	Block the birth canal.	

	Chicken gizzards & neck	Boys	Bring bad luck.	
	Testicles of goats	Girls and boys	Increase sexual desire	Proteins, fat
	Pork	Menstruating women	Recurring menstruation	Proteins, iron Thiamin
		Pregnant women	Delivery of snoring babies	
		Muslims	Unclean	
		Some people	Disgust, vomiting and allergy	
		Seventh day Adventists	Unclean	
	Caterpillars	Pregnant women	Deliver gray haired and salivating baby.	Proteins
	Eggs	Pregnant women	Bald-headed child	Proteins, fat
		Children	Convulsions	
	Frying ants	Pregnant women	Deliver salivating baby	Proteins, fat
		Traditional healers	Spirits stop abiding by them.	
		Seventh day Adventists	Unclean	

	Catfish	Pregnant women	Deliver salivating baby	Proteins, fat, iron
		Children	Convulsions	
		Some people	Disgust, vomiting and allergy	
		Muslims	Unclean	
		Traditional healers	Spirits stop abiding by them.	
		Seventh day Adventists	Unclean	
	Meat bones	Pregnant women	Delays in detachment of umbilical cord.	Calcium
	Mice	Pregnant women	Baby skin rashes	Proteins, fat, iron
		Seventh day Adventists	Unclean	
	Pigeons	Children	Convulsions	Proteins, fat, iron
		Pregnant women	Deliver a shivering baby	
	Rabbits.	Seventh day Adventists	Unclean	Proteins, fat, iron
	Duck.	Seventh day Adventists	Unclean	Proteins, fat, iron
	Milk	Pregnant women	White stuff plastered on newborn baby's body.	Calcium, Riboflavin

	Honey	Pregnant women	Abortion/miscarriage	Carbohydrates , vitamins
Legumes	Ground beans.	Son in- law	Disrespect	Carbohydrates , proteins
		Children	Convulsions	
	Groundnuts	Pregnant women	Cracked baby's skin	Proteins, Fats, Vitamin E, Thiamin
	Cowpeas.	Traditional leaders	Die from witchcraft harm.	Carbohydrates , proteins
	Pigeon pea	Traditional healers	Spirits stop abiding by them.	Proteins, fat, iron
Staples, starch fruits, roots and tubers	Sweet potato	Traditional healers	Spirits stop abiding by them.	Carbohydrates , Vitamin A
	Bananas	Pregnant women	White stuff plastered on baby's body.	Carbohydrates , folate
	Twin bananas	Pregnant women	Bear twins.	
	Sugarcanes	Pregnant women	White stuff plastered on baby's body.	Carbohydrate, vitamins
	Sweet beer	Pregnant women	Suffocate the baby	Carbohydrates
Fruits	Mangoes	Pregnant women	Yellow baby's skin	Vitamin A
	Pumpkins	Children	Swelling of stomach	

		Son in- law	Disrespect	
		Traditional leaders	Die from witchcraft harm.	
		Traditional healers	Spirits stop abiding by them.	
Vegetables	Pumpkin and cassava leaves.	Traditional doctors	Spirits stop abiding by them.	Vitamin A
	Egg plants	Men and boys	Testicles swell	Vitamin A

Annex 9.10: Demographic characteristics of all respondents

Characteristics	Number of respondents	Percentage
Sex		
Male	37	37
Female	63	63
Age (years)		
18-31	18	18
32-45	40	40
>45	42	42
Religion		
Roman Catholic	62	62
Protestants	38	38
Occupation		
Farming	81	81
Schooling	7	7
Traditional healer	2	2
Traditional leader	5	5
Agriculture Extension worker	4	4
Health worker	1	1
Marital status		
Single	8	8
Married	80	80
Separated	1	1
Divorced	1	1

Widowed	10	10
Level of education		
Primary	63	63
Secondary	34	34
Tertiary	3	3
Ethnicity		
Tumbuka	95	95
Other	5	5
Annual income (MK)		
0-5,000	3	3
5,0001-10,000	5	5
10,001- 15,000	2	2
15,001-20,000	3	3
20001-25,000	6	6
>25,000	81	81