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Cynthia Jemenso Yohanna April 22, 2011

The policy environment for maternal nutrition in Taraba State, northeast Nigeria.

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An abstract of

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Rollins School of Public Health of Emory University

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Abstract

The policy environment for maternal nutrition in Taraba State, northeast Nigeria.

By Cynthia Yohanna

Background: The northeastern region of Nigeria has one of the worst maternal mortality ratios (MMR) in the world with malnutrition during pregnancy identified as one of the major underlying factors for the high MMR. An integrated set of nutrition programs, policies and strategies could reduce the incidence of maternal malnutrition if effectively implemented. It is essential that decision makers appreciate the important role that maternal malnutrition plays in influencing maternal, neonatal and child health outcomes in poor countries.

Objective: This study analyzes the policy environment in which decision makers in Taraba State plan, develop and implement maternal nutrition policies and programs

Methods: Taraba State was chosen as the study area for this policy review because of relative paucity of information about the state. Four Local Government Areas (LGAs) of the 16 LGAs were selected to maximize diversity of opinions and experience. Twenty-six in-depth interviews with policy and decision makers on issues pertaining to maternal nutrition were analyzed for this study using the grounded theory approach. Respondents were selected from the State, LGAs, NGOs, Faith Based Organizations (FBOs) and multilateral organizations. Individuals working in these organizations were selected primarily to identify existing maternal nutrition policies and programs and reasons for inconsistent or nonexistent uptake. FBOs and NGOS were selected primarily to identify potential platforms for delivery of maternal nutrition programs.

Results: Maternal nutrition policies, disseminated primarily from the federal level to the state and LGA, are not used for action nor do they provide benchmarks for the maternal nutrition program implementation. Maternal nutrition programs have low visibility, low coverage and low utilization by the target population. Several critical barriers to greater coverage and uptake of maternal nutrition including low prioritization by the policy and decision makers, financial barriers at all levels and insufficient personnel for program and/ or intervention implementation constrained adequate coverage.

Discussion: A top down, non- decentralized approach to maternal nutrition policy formation exists in Nigeria. States, LGAs, NGOs and FBOs are rarely involved in policy decision. Using coverage and utilization of these programs as a proxy to measure the performance of a health system and impact of maternal nutrition policies, it can be inferred that Taraba State health systems and policy implementation with regards to maternal nutrition are not functioning effectively. Based on the research findings, recommendations and potential platforms for expanded delivery are provided.

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List of Tables and Figures

Acronyms

ANC	Antenatal Care
BMGF	Bill and Melinda Gates Foundation
CITI	Collaborative Institutional Training Initiative
CBO	Community Based Organization
DHS	Demographic Health Survey
FBO	Faith Based Organization
FHI	Family Health International
FMC	Federal Medical Center
FMoH	Federal Ministry of Health
GDP	Gross Domestic Product
HIV\AIDS	Human immunodeficiency virus\ Acquired immune Deficiency Syndrome
IRB	Institutional Review Board
ITN	Insecticide Treated Net
LGA	Local Government Area
MNCHW	Maternal, Neonatal and Child Health Week
MMR	Maternal Mortality Ratio
MoH	Ministry of Health
NGO	Nongovernmental Organization
NCFN	National Committee on Food and Nutrition
OPV	Oral Polio Vaccine
PHC	Primary Health Care
PPFN	Planned Parenthood Federation of Nigeria
PPP	Purchasing Power Parity

®	Registered trademark
SON	Standards Organization of Nigeria
STI	Sexually Transmitted Infections
TSMoH	Taraba State Ministry of Health
UNICEF	United Nations Children's Fund
WB	World Bank
WHO	World Health Organization

CHAPTER 1: INTRODUCTION

Problem statement

Malnutrition during pregnancy has been identified as one of the major underlying factors for the high maternal morbidity and mortality in developing countries such as Nigeria (Rush, 2000). Nigeria, popularly known as the 'Giant of Africa' with a population over 150 million, currently has one of the world's worst maternal mortality ratios (MMR) of 1000 per 100,000 thousand. The northeastern region of the country has an even higher MMR of 1,549 deaths per 100,000 live births (Mairiga, Kawuwa, & Kullima, 2008). When compared to the southwestern region of the country, the MMR in the northeast is 9 times as high (Oluwagbemiga, n.d). Adequate maternal nutrition is imperative for the reduction of maternal and child morbidity and mortality and in order to achieve the third and fifth Millennium Development Goals.

"Although pregnancy is considered a normal physiological event in the life cycle, for most African women it is a life-threatening situation" (Abdoulaye, 2006). Direct causes of maternal mortality include postpartum hemorrhage (accounting for 23% of maternal deaths), postpartum infection (17%), prolonged obstructed labor (11%), eclampsia (11%) and unsafe abortion (11%). Indirect causes include anemia (11%), malaria (11%) and other causes such as nutritional deficiencies, tuberculosis and diabetes mellitus account for 5% of all maternal deaths (Goldman & Hatch, 2000). Malnutrition is implicated in both direct and indirect causes of maternal morbidity and mortality. Excluding unsafe abortions, all other causes of maternal morbidity and mortality are responsive to nutritional interventions (Christian, 2002) such as micronutrient supplementation, food fortification, nutrition education and counseling. These interventions should be targeted

throughout a woman's life cycle and not just during pregnancy and breastfeeding although these periods make women in the reproductive age group 15-49 years more vulnerable to malnutrition because of the a higher nutrient requirement physiologically (Lartey, 2008). Malnutrition of the girl child during infancy and childhood can lead to complications of labor and pregnancy later in life. Improving a woman's nutritional status through the use of nutrition interventions is therefore necessary for the reduction of neonatal, infant, childhood and maternal morbidity and mortality.

A cluster of nutrition programs, policies and poverty eradication strategies have been recommended to reduce malnutrition and these actions, if effectively implemented, can produce dramatic improvements in reducing the incidence of malnutrition (WHO, 2010). Policies are usually formulated at the national level and translated for implementation at the different administrative levels. However, progress in program implementation to address maternal malnutrition has been slow. There is a lack of awareness on the part of policy and program decision-makers of the important role that maternal under nutrition plays in influencing maternal, neonatal and child health outcomes in poor countries" (Martorell & Mason, 2010).

Purpose Statement

In light of the effects of malnutrition on the Nigerian women health and the fact that malnutrition can be strategically and effectively addressed, researchers from Emory and Tulane Universities are participating in a Bill and Melinda Gates Foundation (BMGF) funded landscape study to improve maternal, neonatal and child health outcomes through

better designed nutrition policies and programs. This thesis is part of broadly based efforts by the Foundation to improve maternal and child health outcomes in Nigeria.

Taraba State, one of six states in the northeastern region of Nigeria was chosen as the focus state for this study to qualitatively assess the dissemination and implementation of nutrition policies and guidelines. Taraba State has 16 LGAs, four of which were selected for detailed investigation. The methodology used for the assessment is described in the third chapter of this thesis. In depth interviews with policy and decision makers at the state and LGA levels were conducted to answer the research questions. Policy and decision makers are referred to as respondents in this study.

Research Questions

1. What are the perceptions of state and LGA policy and decision makers about existing maternal nutrition policies and how policies are implemented?
2. What do policy and decision makers suggest as key improvements needed in the area of maternal nutrition policies and programs?

Specific Aims

1. To identify existing maternal nutrition policies and knowledge of relevant policies and guidelines at the state and LGA level.
2. To identify respondents' perception of the knowledge of coverage, acceptability and utilization of the maternal nutrition programs from the perspective of the state and LGA policy and decision makers.
3. To identify barriers at the state, LGA and community level to implementing and accessing maternal nutrition programs and interventions.

4. To provide recommendations about potential platforms for expanded delivery of maternal nutrition interventions so as to strengthen the implementation of maternal nutrition policies and programs.

Significance

In response to the high levels of maternal mortality in the northeastern region of Nigeria, this study will lead to improved maternal outcomes through better designed policies and programs that enhance nutrition throughout the woman's life cycle (Martorell & Mason, 2010).

CHAPTER 2: LITERATURE REVIEW

Maternal nutrition and maternal morbidity and mortality

Research shows that maternal nutrition indisputably affects maternal health and mortality with malnutrition during pregnancy identified as one of the main factors that lead to high maternal mortality in developing countries (Christian, 2002; Keen et al., 2003; Rush, 2000) . Pregnant and lactating women are the most nutritionally vulnerable groups of women because their physiologically higher nutritional requirements are often not met (Lartey, 2008). Studies have shown that women who had an adequate nutritional status before pregnancy have more favorable pregnancy outcomes than women who were malnourished before pregnancy (Bhutta et al., 2008; Olusanya, 2010).

Consequences of maternal malnutrition are manifested in the health of the woman (mother), her infant and/ or children. The consequences on the mother's health include lack of productivity, increased complications during pregnancy and delivery and increased mortality. Consequences on the child's health include increased risk of death, intra-uterine growth retardation, prematurity, low birth weight, birth defects, mental retardation and increased risk of (repeated) infections (Linkages, 2004). A close link exists between maternal and child nutrition. A women's nutritional status affects the health of her child/ children and adequate nutrition of the young female child ultimately affects the health of her children later in life. Since poor nutrition starts in utero and its adverse consequences manifest post-natally up until adulthood (Peña & Bacallao, 2002), nutrition interventions should be targeted at women and children throughout the life cycle and not just during pregnancy or lactation.

Causes of maternal malnutrition

Poverty is believed to be a basic cause of malnutrition with the main manifestations being inadequate food and nutrient intake, increased susceptibility to infections and reduced physical capacity which can lead to increased morbidity and mortality in women and children. Poverty is a multifaceted concept which includes lack of funds and education, gender inequality and gender discrimination factors, which make women more susceptible to malnutrition (Peña & Bacallao, 2002). Likewise, food insecurity is closely linked with poverty and it has been estimated that a large proportion of Nigerians are food insecure meaning that people do not have physical, social and economic access to safe and nutritious food (Akinyele, 2009). This predisposes them to malnutrition and increased mortality.

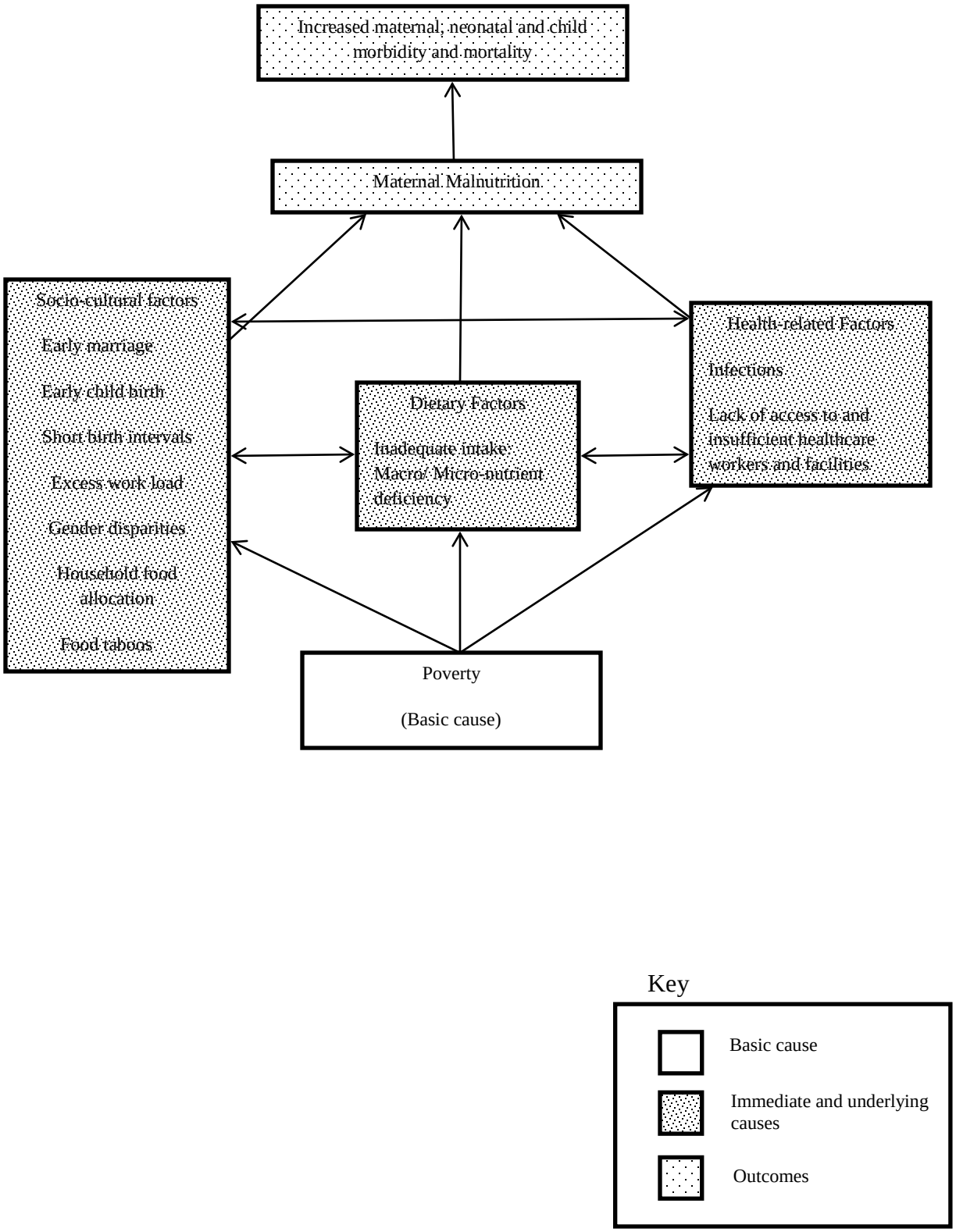
The underlying and immediate causes of malnutrition are broadly classified as socio-cultural, dietary and health related (shown in Fgure1). Each of these factors may be solely responsible for maternal malnutrition but interaction between these factors produces a synergistic effect increasing the incidence of associated morbidities and mortality. Early marriage, early childbirth and short birth intervals interact closely in the causal pathway of maternal malnutrition. With early marriage, more pregnancies occur and at short intervals, giving the woman insufficient time to replenish her nutrient stores before the next pregnancy ((Linkages, 2004)). Women are often faced with an excessive workload which increases their nutritional requirements. These requirements are often not met because of gender discrimination in household food allocation thus making women more vulnerable to malnutrition (Appoh & Krekling, 2005; Prentice, Whitehead, Watkinson, W.H, & Cole, 1983).

Inadequate dietary intake leads to macro and micronutrient deficiencies with these deficiencies reported as stunting, underweight and wasting (Maziya-Dixon, 2004) which are signs of malnutrition. The most common micronutrient deficiencies include iron, iodine and vitamin A deficiencies (Allen & World Health Organization, 2006). Deficiency of iron in pregnancy leads to iron deficiency anemia, increased risk of hemorrhage and poor birth outcomes. Folic acid deficiency in pregnancy leads to neural tube defects in babies while iodine deficiency leads to cretinism, fetal wastage and preterm delivery. Vitamin A deficiency in pregnancy leads to night blindness. Zinc and magnesium deficiency lead to pre-eclampsia and pre-term delivery. Other vitamins and minerals have been associated with adverse outcomes in both mother and children (Black, 2001).

Malaria, parasitic infections and HIV/AIDS are the most notable infections associated with maternal malnutrition. “Stimulation of an immune response by infection increases the demand for metabolically derived anabolic energy and associated substrates, leading to a synergistic vicious cycle of adverse nutritional status and increased susceptibility to infection” (Schaible & Stefan, 2007).

Figure 1 shows a framework for the causes and outcomes of maternal malnutrition. A synthesis of the factors described above and the 5 causes of malnutrition provided by Lartey (inadequate food intake, infections, high energy expenditure, micronutrient deficiency and frequent reproductive cycle) (Lartey, 2008), were utilized in the constructing the conceptual framework which shows the basic, underlying and immediate causes of malnutrition and its outcomes.

Figure 1: A conceptual framework showing the causes and outcomes of maternal malnutrition.



Summary of current maternal nutrition indicators in Nigeria

Determining the prevalence of malnutrition and micronutrient deficiencies in Nigeria remains a herculean task because of the paucity of available data. Some of the estimates being used in nutrition programs are derived from dissimilar surveys with diverse techniques and methodologies (Maziya-Dixon, 2004). This section provides a summary of some of the current maternal nutrition indicators in Nigeria.

Table 1 shows the national prevalence of different indicators of the nutritional status of women/ mothers from the National Food Consumption Survey (NFCS) 2001, Nigerian DHS 2003 and 2008. The NFCS 2001 which has more maternal nutrition indicators than both DHS was included in the table. A comparison of the indicators was performed to determine if there was an improvement in the nutritional status of women over time. The 2003 and 2008 DHS were used in comparison because they provide national level maternal nutrition indicators from the same population collected over 2 time periods. An increase was noted in the proportion of women who received post-partum vitamin A and the proportion of women who were overweight. Likewise, an increase was also noticed in the proportion of women who did not receive iron tablets during pregnancy. There was however a reduction in the proportion of women who did not receive antenatal care. A drastic reduction in consumption of adequately iodized salt from 2003 to 2008 was noted. Possible explanations for the results include increase in utilization of antenatal care (ANC) and post-partum vitamin A. Though two-thirds of Nigerian women utilized ANC, 44% did not receive any iron supplements were not provided or women were not consuming these supplements. The drastic reduction in consumption of iodized salt may

also be explained by the fact that the 2003 DHS did not specify the iodine content of the salt consumed by households while the 2008 DHS did.

Table 1: Nutrition indicators in Nigerian women derived from the national food and consumption survey (NFCS) and DHS 2003 and 2008

Nutritional indicator	NFCS 2001 (Maziya-Dixon, 2004)	DHS 2003	DHS 2008
Iodine deficiency in mothers	30.7%	NA	NA
Iodine deficiency in pregnant women	10.5%	NA	NA
Iron deficiency (anemia) in mother	24.3%	NA	NA
Iron deficiency in pregnant women	35.3%	NA	NA
Non pregnant women with anemia (HB<120g/L)	NA	NA	NA
Obese	5.7%	6.0%	6.0%
Overweight	14.2%	15.0%	16.1%
Percentage of household consuming adequately iodized salt	NA	97. 0%	52% (97% consume adequately/ inadequately iodized salt. 45% consume inadequately iodized salt)
Pregnant women with anemia (HB<110g/L)	NA	NA	NA
Percentage of women who did not receive antenatal care	NA	37.0%	36.3%
Percentage of women who did not receive iron tablets during pregnancy	NA	40.0 %%	43.9%
Received vitamin A postpartum	NA	19.6%	25%
Under-nutrition	11.6%	15.0%	12.2%
Vitamin A deficiency in mothers	4.1%	NA	NA
Vitamin A deficiency in pregnant women	8.8%	NA	NA
Zinc deficiency in mothers	28.1%	NA	NA
Zinc deficiency in pregnant women	43.8%	NA	NA

The Nigerian health system structures

"Nigeria operates a pluralistic health care delivery system with orthodox and traditional health care delivery systems operating alongside each other…." (Federal Ministry of Health, 2004).

The Nigeria health system, created to advance the health of the Nigerian population through a variety of delivery systems in the private and public sectors, is pluralistic and complex (Olateju, Akewushola, & Adeyemi, n.d). The health system includes both private and public sectors, made up of public hospitals, private hospitals, traditional health providers and donor funded organizations (Adetunji, Mafe, Bayo, & Eyitayo, 2008). The Federal Ministry of Health (FMoH) in 2005 estimated that there were 23, 640 health facilities in the country with 38% of them privately owned, providing 60% of health care in the country. These data indicate that health care services are mainly being provided by the private sector which is usually more expensive than facilities belonging to the public sector (Adetunji, et al., 2008). It is reported that the health care system in the country does not function effectively with too many patients forgoing treatment or paying unskilled providers to provide medical care (USAID, 2009).

Nigeria's tiers of government include the federal, state and local government. The organization of the health system in Nigeria is such that the FMoH provides policies and technical assistance to all the states in the country. At the state level, the responsibility for health is shared by the State Ministry of Health (SMoH), the health management board and the LGA authorities (African Development Bank, 2002). At the LGA level, the chairman oversees the health department though an officer is designated to head the LGA health department (Adetunji, et al., 2008). Despite this organization, the Nigerian health

system is in a deplorable state, currently ranked 187th out of 191 WHO member states for overall health system performance (Federal Ministry of Health, 2004) . Barriers to the effective functioning of the health system include lack of public-private partnership which is critical to health sector reforms (Olateju, et al., n.d) , decaying facilities, paucity of health care workers, weak coordination systems (Federal Ministry of Health, 2004) and inadequate funding. Sources of funding for health in Nigeria include government allocations, loans, grants, private sector contributions and out of pocket expenses (WHO, 2011).

Public Health Sector: Each tier of government is responsible for health service provision in the public sector. The public health system is structured according to the universal levels of care: primary, secondary and tertiary levels (Asuzu, 2004). The Federal Government of Nigeria, according to the National Policy on Health, is responsible for policy formulation, strategic guidance, coordination, supervision, monitoring and evaluation at all levels (Olateju, et al., n.d). Financing and management of services at each of the levels is dealt with independently (Federal Ministry of Health, 2004) with the Federal government being the main source of funding.

Table 2 shows the number of health workers reported in the public sector for the years 2005 and 2008. The number of health workers was noted to have increased in 2008 but the density of health workers per 100,000 population was noted to be insufficient in comparison to minimum standard of 250 health workers per 100,000 population that is critical in achieving the Millennium Development Goal to reduce maternal mortality (Joint Learning Initiaitve on Human Resources for Health and Development, 2004).

Table 2: Number of health workers reported in the public sector in Nigeria for the years 2005 and 2008.

Personnel	2005 (Chankova et al, 2006)		2007 (Adetunji et al, 2008)	
	Number	Density per 100,000 population	Number	Density per 100,000 population
Doctors	17,815	13	55 376	37
Nurses	37,602	NA	NA	NA
Midwives	6,786	NANA	NA	NA
Nurse midwives	77,464	NA	NA	NA
Nurses and midwives	121,852	92	224 943	149
CHOs/ CHEWS	71,368	64	NA	NA

Primary level: Financed and managed by the LGAs, this level, also known as Primary Health Care (PHC) forms the entry point of the community into the health care system. The facilities at this level include "health centers and clinics, dispensaries, and health posts, providing general preventive, curative, promotive, and pre-referral care. Primary facilities are typically staffed by nurses, community health officers (CHOs), community health extension workers (CHEWs), junior CHEWs, and environmental health officers." (Chankova, Development, Reformplus, & Associates, 2006). The absence of doctors at this level indicates that these centers are equipped to treat minor ailments while referring more difficult cases to the secondary or tertiary levels.

The National Primary Health Care Development Agency is a parastatal of the Federal Ministry of Health and is responsible for providing, developing and delivering PHC (Adetunji, et al., 2008).

*Secondary level***:** Receiving its funds from the state government, this level includes general hospitals that are typically staffed by medical officers (physicians), nurses, midwives, laboratory and pharmacy specialists, and community health officers. Secondary level facilities serve as referral points for primary health care facilities. Ideally, each LGA should have a secondary level facility (Chankova, et al., 2006).
*Tertiary level***:** Tertiary level facilities include specialist hospitals, federal medical centers (FMC) and teaching hospitals. Serving as referral centers to the primary and secondary levels, these facilities are "resource centers for knowledge generation and diffusion". Each of the 36 States in Nigeria should have at least one tertiary facility (Chankova, et al., 2006).

Private Sector**:** As a buffer for the overwhelming inadequacies of the public health system, the private sector remains an unavoidable choice for large segments of the Nigerian population (Ogunbekun, Ogunbekun, & Orobaton, 1999). Private sector facilities include for profit and non- profit organizations comprised of Faith Based Organizations (FBOs), Non-Governmental Organizations (NGOs), Community Based Organizations (CBOs), traditional medical practitioners and informal drug vendors (USAID, 2009). "While the private sector makes an appreciable contribution to health care in Nigeria, the sector is not very well regulated and supported (USAID, 2008). For example, private sector health care workers have fewer opportunities for training and refresher trainings than those in the public sector. Furthermore, availability of policies, guidelines, and manuals is also weak in the private sector" (USAID, 2008).The

availability of health workers in the private sector varies depending on location, with more doctors and nurses working in the urban areas (USAID, 2009).

Policy environment in Nigeria

As in most countries, the policy environment in Nigeria is quite complex, with different individuals and groups fighting for inclusion and control. This results in a multiplicity of policy actors. Two major groups of policy actors exist and these include the state and non- state policy actors. State actors occupy the formal state structure and include actors in the executive, legislature and judiciary at the federal, state and LGA levels and are responsible for making policies and policy changes while the non-state actors are external to the formal state structure and include civil societies, political parties, the organized private sector, the media and international agencies. The non- state actors also influence policy (Ukiwo, 2004). Major international non-state actors such as the World Bank, USAID and UNICEF may be involved (working in collaboration with the state actors) in the preparation of nutrition policies in Nigeria.

"Nutrition and food policy is viewed as a specific set of decisions with related actions, established by a government and often supported by special legislation, which address a nutrition or food problem or set of problems (Klemm & West, n.d) ." The National Committee on Food and Nutrition which is composed of state and non-state actors is responsible for development of national nutrition policies (Sukin & Essama, 1991). Critical review of reforms and programs in Nigeria show a top down approach to policy formulation and implementation where the state policy actors are responsible for formulation and implementation of nutrition policies(Stephen & Lenihan, n.d) .

Nigeria, like many countries in Sub- Saharan Africa, is faced with challenges in designing and financing appropriate food and nutrition policies and programs. These challenges include policy inconsistencies, lack of continuity by successive governments, inadequate nutrition capacity in the government, lack of adequate funding and lack of skills in policy analysis and program evaluation by nutritionists (Akinyele, 2009; Babu, 2003).

Current policies and guidelines on maternal nutrition

Relevant legislation, policies, programs and strategies exist to address nutrition problems, enable the wide spread use of nutritional interventions and also ensure adequate maternal nutrition. Nigeria, over the years, has formulated these to help guide actions at the Federal, State and Local Government Levels. These interventions are targeted at different stages of life: pre- pregnancy, pregnancy, breastfeeding, child feeding and adolescents. Other policies exist that affect the nutritional status of women though not directly and these include birth spacing, age at marriage and age at first child birth. Table 3 provides details of some of these policies.

Table 3: Table showing policies that relate to maternal nutrition.

Policy	Date adopted	Goal (s)	Target (s)	Strategies/ Objectives	Evaluation/ Results
1. National policy on food and nutrition (UNICEF, 2006)	2002	• "Aimed at improving the nutritional status of all Nigerians with targets set to be achieved by 2010".	•Reduction of micronutrient deficiencies (principally of vitamin A, iodine and iron) by 50% by 2010	• Improving Food Security • Enhancing care-givers' capacity by promoting optimal infant feeding practices and reducing the workload of women to create more time for childcare, through the development of labor saving technologies • Improving Health services to provide essential maternal and child health care. • Controlling micronutrient deficiency and anemia through a strategy comprising vitamin and mineral supplementation, food fortification and dietary diversification. • Eliminating Iodine Deficiency Disorder through salt iodization program".	As of the time of this review, no resources were available to evaluate the achievements of this policy.
2. National Breastfeeding Policy (Worugji & Etuk, 2005)	1990	•Protection, Promotion, and Support of breastfeeding	•The decree, among other things, prohibits the importation of breast-milk substitute or infant formula unless they are registered with the appropriate authorities	• "The female child should be adequately catered for during childhood and prepared during adolescence and especially during pregnancy for optimal breastfeeding • Breastfeed their babies exclusively from birth to the first 6 months of life and to continue breastfeeding with the addition of adequate complementary up to 2 years or beyond".	Resources not found to evaluate this policy 2008DHS showed that the prevalence of exclusive breastfeeding in children 0-5 months of age was found to be 13.1%

Policy	Date adopted	Goal (s)	Target (s)	Strategies/ Objectives	Evaluation
3. National Adolescent Health Policy (Federal Ministry oh Health, 2001)	2007. Targets to be achieved by 2015	•To promote optimal health and development among adolescents and other young people in Nigeria	•"Include a 50% reduction in the incidence of unwanted pregnancies among young females. •A 50% reduction in the rate of marriage among young people under the age of 18. •75% reduction in the maternal mortality ratio among young women".	Not available	Not available
4. Integrated Maternal, Newborn and Child Health Strategy (Federal Republic of Nigeria: Ministry of Health, 2011)	March, 2007. Currently in its second phase of implementation, targets were set to be achieved in 2015	•The IMNCH strategy "aims to ensure that the interests of mothers and children do not compete with each other, and provides opportunities for the integrated implementation of evidence based interventions for MNCH".	Pregnant women, children, adults, elderly	Not available	Not available
5. National Guideline on micronutrient deficiency control	Not available	Not available	Not available	Not available	Not available

Policy	Date adopted	Goal (s)	Target (s)	Strategies/ Objectives	Evaluation/ Results
6. Food based dietary guidelines (Food and Agriculture Organization, 2011)	2001	•The general recommendations aim at ensuring that the different age groups in all segments of the Nigerian population consume adequate amounts of food that contain the nutrients needed to attain and maintain good health. •The recommendations also aim at reducing the growing prevalence of PEM as well as diet-related non-communicable diseases.	•Pregnant women •Breastfeeding mothers	Eat diet that contains a variety of foods in adequate amounts. Consume enough food to ensure adequate weight gain. Eat more cereals, legumes, fruits, vegetables, dairy products and animal foods Take iron and folic acid supplements as prescribed. Avoid alcohol, addictive substances and smoking.	Not available
Guidelines on food fortification with micronutrients (Allen & World Health Organization, 2006)		Aim is for all people to be able to obtain from their diet all the energy, macro- and micronutrients they need to enjoy a healthy and productive life.		Dietary diversification Food fortification Supplementation	Not available Nigeria has achieved universal salt iodization (97%). See details on food fortification in the next section. Not available

Interventions/ programs

Efforts are being carried out by the Federal Government of Nigeria together with unilateral and multilateral organizations to address micronutrient deficiencies and improve the nutritional status of women. These interventions include:

1. Food fortification: Nigeria's initiative to control and reduce micronutrient deficiencies began in 1990. By 2002, a new strategy was adopted to fortify staple foods with vitamin A. The Standards Organization of Nigeria (SON) published mandatory standards for vitamin A fortification in flour, sugar, and vegetable oil in 2002. Nigeria is also fortifying wheat with iron. By 2004, 70% of the sugar, 100% of wheat flour and 55% of vegetable oil sold on the market, were fortified with Vitamin A. (www.unicef.org).
2. National Special Program for Food Security: This program was launched in 2001 with the goal to "improve national and household food security and reduce rural poverty in an economically and environmentally sustainable way". This has helped in boosting agricultural productivity (Food and Agriculture Organization, 2007). An initiative of the Federal Government of Nigeria and the Food and Agricultural Organization, this program uses low cost technology to improve and sustain agricultural productivity and systems (Maziya-Dixon, 2004). The program includes: (a) a food security project; (b) an aquaculture and inland fisheries project; (c) an animal disease and trans-boundary pests control project; (d) a marketing of agricultural commodities project; (e) a soil fertility initiative; (f) a food stock management project and (g) South-South cooperation (Maziya-Dixon, 2004).

3. Universal salt iodization program**:** In response to the World Health Summit's goal of eliminating iodine deficiency, Nigeria introduced its salt iodization program. SON instituted the mandatory iodization of salt in Nigeria in 1994 and within a year, 95% of households had access to adequately iodized salt (Egbuta, 2002). Reports have indicated that more than 97% of households now consume iodized salt making Nigeria one of the highest ranked countries in the world with regard to salt iodization (UNICEF, 2009).
4. National Immunization Days (NID): These days were set aside by the Federal Government of Nigeria to immunize all children with oral polio vaccine (OPV) and vitamin A irrespective of their immunization status (www.deltastate.gov). Coverage assessment survey carried in 2007 indicated that Nigeria's national vitamin A coverage of children 6 to 59 months was 70%. For the second round of vitamin A administration, Immunization Plus Days (IPDs) achieved 63% coverage in 20 states (Micronurient Initiaitive, 2005). At the state levels sub-national immunization days have been designated in addition to the NIDs to increase coverage of immunization.
5. Recommended iron supplementation during pregnancy: This component of antenatal clinic visits in Nigeria includes distribution of iron and folate supplements, malaria prophylaxis, blood testing for hemoglobin (Osungbade, Oginni, & Olumide, 2008). Though iron supplements are recommended during pregnancy, the 2008 DHS indicated that 43.9% of women did not receive iron supplements during their last pregnancy.

6. Home-Grown School Feeding and Health program: This program launched in September 2005 with the aim to provide a nutritionally-adequate meal during the school day). This is not being widely practiced in schools because of the cost associated with implementation.
7. Dietary diversification: While not an explicit program, dietary diversification is usually promoted during nutrition education that takes place in ANC and community awareness campaigns. Messages include the promotion of community gardens and preparation of nutritionally-adequate complementary foods from local products is also being encouraged.

Conclusion

There have been comprehensive reviews of the relationship between poor maternal malnutrition and negative maternal, neonatal and child health outcomes (Ehiri, 2009; Linkages, 2004). To address maternal malnutrition which is prevalent in Nigeria, the health system and the policy environment must be conducive to the introduction of specific strategies for alleviating maternal malnutrition. The review of current nutrition policies and guidelines that exist in Nigeria suggests that policy and decision makers are only vaguely aware of the content of the policies and guidelines, none of which provide direction to specific programs or intervention nor do they set priorities or a plan for

action and timetable for implementation. The study reported in this thesis focuses on one state in northeastern Nigeria to assess the perspective of state, LGA, local NGOs and FBOs about existing maternal nutrition policies and guidelines and whether they have been adopted and used in the State and LGA.

CHAPTER 3: METHODS

Study objective

This study analyzes the policy environment in which decision makers in Taraba State plan, develop and implement maternal nutrition policies and programs.

Specific Aims

1. To identify existing maternal nutrition policies and knowledge of relevant policies and guidelines at the state and LGA level.
2. To identify respondents' perception of the knowledge of coverage, acceptability and utilization of the maternal nutrition programs from the perspective of the state and LGA policy and decision makers.
3. To identify barriers at the state, LGA and community level to implementing and accessing maternal nutrition programs and interventions.
4. To provide recommendations about potential platforms for expanded delivery of maternal nutrition interventions so as to strengthen the implementation of maternal nutrition policies and programs.

Study setting

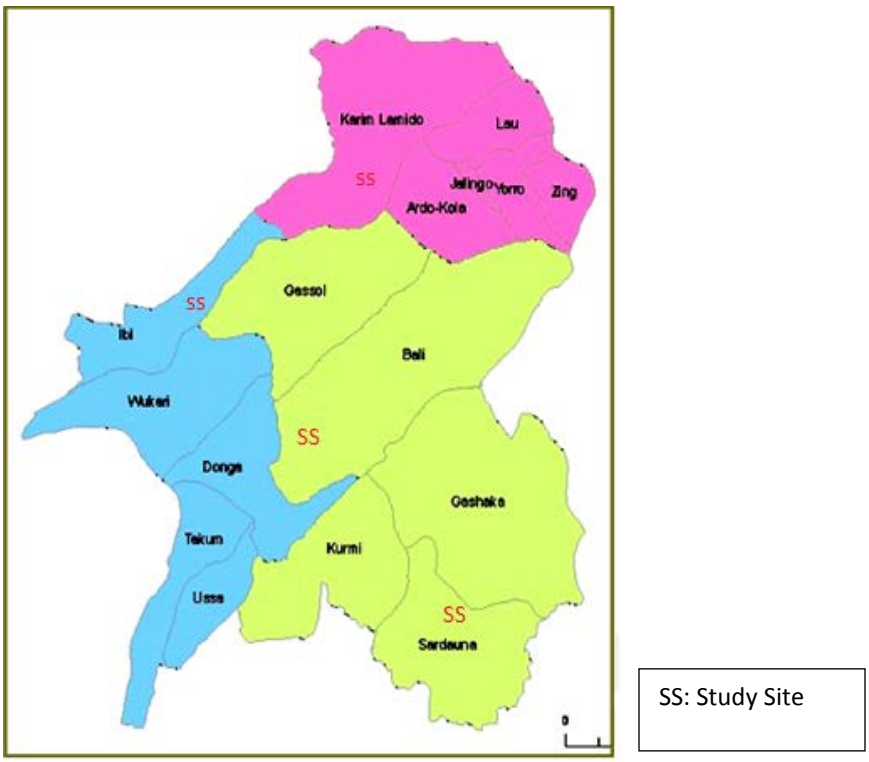
The study was conducted in Taraba State of northeastern Nigeria. This state is bounded on the north by Bauchi and Gombe states, on the west by Plateau, Nassarawa and Benue states and on the eastern border by Adamawa state and the Republic of Cameroon (Mithosath, 2010). Jalingo is the state capital. Taraba State has 16 LGAs, 96 health districts and 171 political wards(Taraba State Ministry of Health, 2010). This state

is reported to have a population of about 2.4 million and an annual growth rate of 2.9% (Mithosath, 2010). Figure 2 shows the regions and LGA boundaries in Taraba state. There are 80 different ethnic groups: the major ones including Fulani, Mumuye, Jukun, Jenjo, Kuteb, Chamba and Mambilla (Mithosath, 2010). The predominant religions are Christianity and Islam. Appendix 2 and 3 of the appendix show the female literacy levels and the GDP (PPP per capita) of the states in Nigeria with Taraba being one of the poorest states in the country with female literacy levels of 50.9%.

Primarily an agrarian state, Taraba occupies an area of about 54,428 square kilometers (Mithosath, 2010) and has a climate that is conducive for cultivation of staple food crops (Taraba State, 2004). The presence of several fresh water bodies in the state makes fishing a popular occupation in the state (Taraba State, 2004).

There are approximately 590 medical establishments providing primary and maternal health care services in the state, 70.8% owned by the local governments while private and mission owned establishments constitute 27.6%" (Online Nigeria, 2003). The main referral hospitals in the state are the FMC and the Specialist hospital both located in Jalingo. It was reported that there were 89 doctors and 506 nurses in Taraba State in 2008 (USAID, 2008). Considering the population of the state, the health worker patient ratio is low. The State Ministry of Health, headed by the Commissioner of Health is responsible for the administration of the health system of the state.

Figure 2: Map of the regions and LGA boundaries in Taraba state[1].



Taraba State is divided into 3 different regions which also correspond to the 3 senatorial zones: the northern, central and the southern regions/ zones (Taraba State, 2004). Considerable variations exist between these regions in terms of religion, terrain, geography, ethnicity and culture and these were considered in the selection of the four focus LGAs used in this study.

The state capital, Jalingo, and four LGAs from each of the 3 regions of the state were selected for this study (indicated as SS in figure 2): Ardo- Kola (northern region), Bali (southern region), Ibi (central region) and Sardauna (southern region). According to the 2006 population census, Sardauna and Bali are more densely populated than Ardo-Kola and Ibi LGAs. Data provided by National Rural Livelihoods Survey and the National

[1] SOURCE: http://www.speakersoffice.gov.ng/constituencies_taraba.htm

Food Consumption and Nutrition Survey were used to determine the level of nutritional deficiencies and daily household income in Naira for each of the LGAs. Table 4 shows that Sardauna LGA has relatively low nutritional deficiencies and household income. Ibi LGA has one of the highest nutritional deficiencies and household income. Bali and Ardo –Kola both have relatively low nutritional deficiencies and moderate income. While these data have not been validated, they are the only relevant nutrition data available by LGA.

Table 4: Calculated mean household incomes and Iodine and Vitamin A deficiencies by Local Government Area (LGA) for Taraba State[2].

LGA	Iodine, % deficient	Vitamin A, % deficient	Daily household income in Naira
Ardo-Kola	3.50	13.50	166.05
Bali	7.50	12.00	141.87
Donga	27.00	12.00	239.78
Gashaka	1.00	10.50	77.56
Gassol	21.00	12.00	178.84
Ibi	38.50	16.50	280.00
Jalingo	0.00	15.00	174.65
Karim Lamido	11.00	18.00	212.20
Kurmi	20.00	10.50	184.42
Lau	0.00	16.50	186.22
Sardauma	4.00	7.50	67.66
Takum	33.50	12.00	286.43
Ussa	36.00	12.00	308.17
Wukari	41.50	13.50	318.89
Yorro	0.00	15.00	177.76
Zing	0.00	15.00	181.47

The vegetation of the LGAs was also used as a criterion for selection. The vegetation in each of the LGAs largely determines its agricultural patterns and thus the availability of food. The vegetation in Ibi and Bali is similar to that found in the southern parts of

[2] Legg, Christopher; Kormawa, Patrick; Maziya-Dixon, Bussie; Okechukwu, Richardson; Ofodile, Sam; Alabi, Tunrayo. Report on Mapping Livelihoods and Nutrition in Nigeria Using Data from the National Rural Livelihoods Survey and the National Food Consumption and Nutrition Survey. International Institute for Tropical Agriculture. Ibadan, Nigeria.

Nigeria and is suitable for cultivating crops. The vegetation found in Ardo-Kola is similar to that found in Chad and it is not as suitable for cultivating food crops. Sardauna LGA is marked by luxuriant pasture, the most suitable for growing crops (Taraba State, 2004). The cultivation pattern and availability of food in each of the LGAs determines the nutritional deficiencies that might be found there.

Study design and population

This is a qualitative study that analyzes data from 26 in depth interviews with policy and decision makers on issues pertaining to maternal nutrition. This study design was chosen to investigate the nutrition policy environment in Taraba State. All respondents have sufficient knowledge and (some) nutrition work experience in Taraba State.

This target group of State, LGA, NGO, FBO and multilateral organizations were purposively selected to ensure that the opinions of all key informants could adequately address the research questions, aims and objectives. The key informants were identified with the help of a gatekeeper who had worked closely with the Taraba State Government and was familiar with the way policies were translated and implemented in the state. The respondents were individuals who had a working knowledge of the way various organizations and units operated and were organized. FBOs and NGOS were selected primarily to identify potential platforms for delivery of maternal nutrition programs. Respondents from these international organizations like UNICEF, WHO, Family Health International (FHI) and Planned Parenthood Federation of Nigeria (PPFN) were interviewed.

Data collection method

In-depth interviews provided insights into current nutrition policy and programs, barriers to their implementation and possible recommendations for improvement. This data collection method was used to ensure that implementation and dissemination experience was gathered at all levels and that respondents were free to discuss their experience without fear of being judged or punished. Using in-depth interview guides (Appendix 1), respondents were asked semi structured, open ended questions and probes were used to explore the issues in depth.

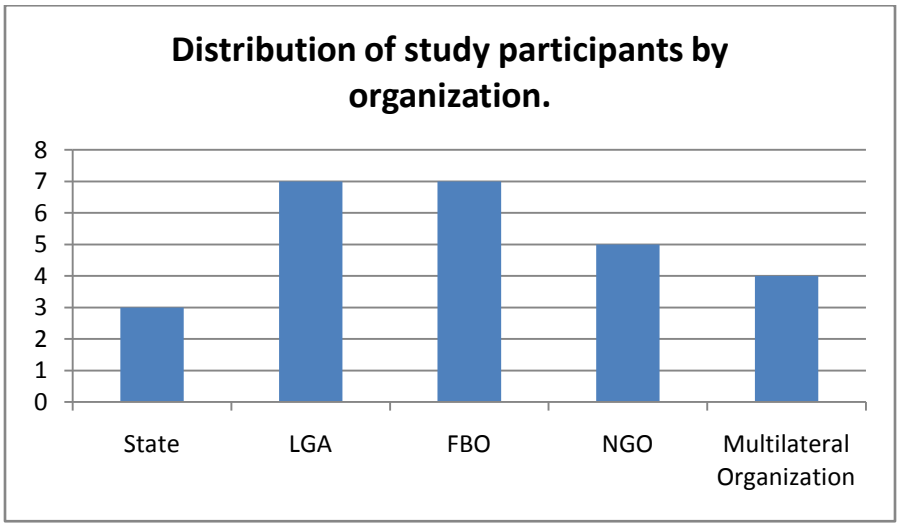
Data collection process

Working in collaboration with a Nigerian partner, Common Heritage Foundation (CHF), the Director of Primary Health Care in Taraba State was contacted and informed of the nature and purpose of the study. Permission was sought from the Federal ethical committee in Nigeria in order to carry out the study. Permission was also sought from the state Ministry of Health; the ministry was able to provide a gateway to nutrition policy and decision makers because the Taraba State Ministry of Health (TSMoH) staff were familiar with those involved with nutrition work. Data for this study were collected in August, 2010. Approval was granted by both Emory and Tulane Universities IRB to conduct the study in Taraba State.

CHF has carried out various studies in this region of Nigeria and is familiar with individuals and appropriate procedures to follow. The study utilized gate keepers to recruit respondents at the state and the LGA level. CHF and the Director of PHC

provided a list of policy and decision makers to be interviewed. Twenty-six respondents were recruited and interviewed with each interview lasting between 30 minutes to an hour; this was to ensure that a variety of opinions were sampled and that saturation was reached. Figure 3 shows demographic information of the target group. The largest number of respondents was seen at the LGA and FBO levels.

Figure 3: Distribution of study participants by organization, Taraba State, northeast Nigeria.



The interview guide was developed by the partners at Emory and Tulane universities and was reviewed and corrected for cultural appropriateness by the Nigerian collaborator, CHF. The questions and probes arose from the research question, aims and objectives, literature review and past experience of the researchers. Questions regarding resource allocation, prioritization of health and nutrition policies and current state of maternal nutrition programming were asked in the interview guide. Six field assistants were utilized during data collection. Five of the field assistants had some experience with conducting in depth interviews though they were trained/ retrained by the director of CHF, a professor who has long term experience with different methods of gathering

qualitative data. The training was performed to ensure that all members of the research team were conversant with the aims and objectives of the study and that they were probing each question adequately to gather the necessary information. The researchers were trained as interviewers and note takers. All of the field assistants were fluent in English and Hausa which were the languages used to conduct the interviews are all CITI certified.

Consent was sought from the respondents to audio record the interviews; the research team fully explained the purpose of the study to the study population prior to the onset of each interview. If permission was granted, then a digital recorder was used to record the minutes of the session and a note keeper took notes. Where consent was not given, only the note keeper took notes.

Data analysis

Some of the recordings were translated and transcribed verbatim. Detailed notes were taken for interviews that were not recorded. Field notes were also written soon after the conclusion of each interview. Interviews conducted in Hausa were directly translated into English (with no Hausa transcripts) and then transcribed in addition to the English transcripts. Detailed summaries were made for recordings that were not audible enough for verbatim transcription or when consent was given to record the interviews. Of the twenty-six transcripts, six were verbatim transcripts with the rest being notes. The initial self-introduction made by the respondents was not recorded in order to maintain confidentiality. Instead, respondents were given identification numbers to help classify

them. All transcribed data were de-identified and are stored securely in a data base that is password protected.

Grounded theory approach was employed for data analysis. Using this approach, codes, concepts and theories were developed which were well supported by the data to better understand and explain the study issues (Charmaz, 2006; Hennink, Hutter, & Bailey, 2011). Analysis was carried out using MAXQDA[10], a software used to analyze textual data.

Deductive codes were generated from the research question, aims and objectives while inductive and in vivo codes and sub-codes were generated from the transcripts as they were being read and analyzed. These codes essential for analyses were entered into a codebook, in which each code was defined and described. The transcripts were then coded using these codes. Code memos and analytical memos were also kept to track evolution of themes. Inductive strategy was used to develop thick descriptions for the different codes.

A cross case comparison was utilized initially for comparison of the themes across all the respondents. Sub groups (state, LGA, NGO, multilateral and FBO) within the respondents were identified and comparison of the themes within and across the sub groups to “understand issues in more depth and provide a basis for initial explanation” was conducted (Hennink, et al., 2011). This was to determine if there was a difference in the way respondents/ sub groups talked about the same theme. Related sub codes and themes with similar characteristics were grouped into meaningful categories which were useful in theory development. (Hennink, et al., 2011).

Bringing together all the components of data analysis mentioned above, theories were developed to offer an explanation of the findings noted during the analysis. Outliers, the respondents whose responses did not track with the more common responses, were used to refine and add nuance to the theories. To validate the emergent theories, their consistency and explanation were assessed across the data to determine if the theories were sufficient in explaining peculiarities across the cases (Hennink, et al., 2011; Marschan-Piekkari & Welch, 2004) .

Data quality and study limitations

The interview guide used was utilized to produce the desired information and saturation was reached before the end of the research period (between the twelfth and fifteenth interviews). Data were gathered from only 4 LGAs and not the 16 LGAs of the State because the four LGAs were thought to be representative of the other LGAs. This may be a limitation of the data collected because the policy environment and the manner in which policies and programs are implemented may vary across the different LGAs. The findings of this qualitative study as with other qualitative studies are not generalizable to the other states in the region or in the country. Scrutiny of some of the interviews (four interviews) showed that they lacked much depth and nuanced details for analysis. Generally, adequate information was gathered by the research group to address the research questions, aims and objectives.

CHAPTER 4: RESULTS

Existing maternal nutrition policies and knowledge of the policies

Study respondents were asked to describe existing nutrition policies in the in-depth interviews. This section provides results about the existing policies and the respondents' knowledge of the policies.

Existing maternal nutrition policies

Although there were differences in opinion about the existing maternal nutrition policies, the common theme expressed by respondents was the presence of maternal nutrition policies at different administrative levels of operation: state, LGA, FBO, NGO and multilateral organizations. These policies are usually formulated at the federal level and are disseminated for use at the state and LGA levels. According to the interviews conducted at the state level, respondents indicated that the state did not have maternal nutrition policies of its own but used policies that were formulated along the lines of the federal government policies or by collaborating partners such as UNICEF. Strategic plans developed by the state government which address women and children had been "recently approved" but had not been implemented at the time of the study.

A respondent at the LGA level is quoted to have said:

> *R[3]: "Policies that are laid down are being formulated by the state. Reports are submitted by different LGAs every month; policies are then generated from the reports. Policies come with guidelines, so training sessions are based on the guidelines. The Government emphasizes that you gather women/ the community and educate them on these guidelines." (IDI-17, LGA).*

[3] R: Respondent
I: Interviewer

The majority of the respondents at the LGA level mentioned the use of maternal nutrition guidelines and policies which had been formulated at the state level but were adapted to suit the LGA's needs as stated in the example above. Bali LGA had passed a bylaw on food supplements but the respondent who reported it did not know the details of the bylaw. Likewise, a respondent working at the LGA level in Ardo- Kola mentioned that though the LGA was using the state policy on implementation of programs, it had formulated a policy which was awaiting approval from the LGA chairman. It was mentioned that individuals in charge of health facilities were educated on how to use the existing operational guidelines and are instructed to use the guidelines in their facilities. It was not stated if these operational guidelines were nutrition related or not.

Some FBOs and NGOs reported having specific nutrition policies and guidelines which were currently in use. No existing nutrition policies were mentioned by individuals working with multilateral organizations and this might be explained by lack of knowledge of the existence of the policies by the respondents.

Knowledge of the policies and guidelines

Broadly, respondents reported that there were written policies and guidelines on maternal nutrition, HIV testing, counseling and follow-up, family planning, administration of drugs, health education and antenatal service. Respondents acknowledged awareness of the following policies:

1. Policies that sensitize a woman on the need for antenatal, family planning, taking of folic acid and education.

2. Policies on the implementation of health programs which include advising women to eat a balanced diet and use of supplementary drugs such as “iron, folic acid, ferrous syrup and fesolate.”
3. Guidelines on food supplements, food fortification, nutrition counseling and education.
4. Guidelines for nutrition officers who go from village to village teaching women how to prepare balanced diets.
5. Guidelines on giving drugs (Mebendazole) to protect children from malnutrition.
6. Policies for running the maternal department addressing HIV testing, counseling and follow up.

Although respondents mentioned the above policies, probing revealed limited knowledge of the details of the federal policies and guidelines listed in the literature review by respondents; no detailed information regarding the policies was provided by any respondent. A state level official mentioned that the nutrition department in the state government was responsible for drafting policy guidelines along the lines of the federal government policies but did not go further to mention what those federal policies were. This respondent is quoted to have said:

R: ……the nutrition department in the state government is responsible for the policy guidelines along the lines of the federal government policies…..

I: I am interested in that issue of, eh, that issue about the policy along the lines of the program of policy. Am I to take it that the state doesn’t have policies of its own?

R: Uptil now it does not have a policy on nutrition of our own. We are being guided by the federal government policy. (IDI-1, State)

These responses reveal poor uptake of federal policies and guidelines at the state and LGA levels. The policies provided by the federal government are not being enacted nor do they provide benchmarks for maternal nutrition program implementation. When asked to see copies of the policy documents, respondents said they were not readily available to be perused.

Of the respondents interviewed, only two respondents working at the LGA level provided reasons why maternal nutrition policies were needed: to "reduce maternal morbidity and mortality" and also to 'improve and serve the community."

Ongoing maternal nutrition programs (activities)

For policies to be effective, they have to be translated into feasible policies and programs. Good programs are the measures of good policies (Klemm & West, n.d). In order to determine the current status of nutritional programming in Taraba State, respondents were asked and probed on several nutrition programs, target groups of these programs, implementers of the programs and program delivery platforms.

The overwhelming theme expressed by respondents was the presence of several ongoing maternal nutrition programs. These programs, targeted toward pregnant women and non-pregnant women are aimed at improving their nutritional status (programs listed in Table 5). They are being implemented through a diverse of delivery systems: service providers, health workers, community distributors, multilateral organizations, NGOs, FBOs and government officials with the delivery platforms being facility based, community based, mobile services and media based campaigns. The vast majority of nutrition programs in the target population are provided through health facilities. Two

relevant programs, though not directly nutrition related, mentioned include HIV/ AIDS education and treatment and free adult literacy classes for women with their delivery platforms being health facilities and schools.

Table 5: Ongoing maternal nutrition programs, target groups and delivery platforms, in Taraba State, northeast Nigeria.

Nutrition program	Pregnant women	Non-pregnant women	Delivery platforms
1. Provision of routine antenatal drugs.	Yes These drugs which include iron (fersolate), folic acid, antimalarials and multivitamins are provided at no cost or subsidized rates.	No	Health facilities: Antenatal clinics
2. Provision of vitamin A	No	Yes: Postpartum women and children under 5 years of age.	Not stated
3. Provision of ITNs	Yes	Yes	-Antenatal clinic -Community workshops
4. Nutrition education and counseling, Creation of awareness on the benefits of balanced diets, food fortification, dietary diversification, food demonstration and malaria control.	Yes	Yes	-Health facilities -Mass media campaigns -Seminars -Community outreach
5. Immunization	Yes Sometimes provided at no cost to pregnant women.	No	Health facility
6. Creation of awareness on the need to come to the clinic/ hospitals	Yes	Yes	Mobile clinic campaigns
7. Food fortification: Carried out at the national level by NAFDAC and not by Taraba State.	Yes	Yes	Mass media (sponsored by the state and federal government)
8a. Family planning awareness	Yes	Yes	-Service providers -Religious gathering
8b. Family planning services	No	Yes	Health facility

The majority of the respondents did not mention if there were monitoring and evaluation programs designed to assess the impact of any of the maternal nutrition interventions. Data collection on the ongoing nutrition programs was limited. A respondent at the state level mentioned that there were no data for maternal nutrition indicators. The only sources of data on nutrition indicators and programs mentioned in the interviews were weight and mid upper arm circumference collected quite frequently from the 10 wards in Ardo Kola LGA and data collected on routine immunization days.

Knowledge of the acceptability, coverage and utilization of the of maternal nutrition programs at the state, LGA and community level.

Respondents were asked about coverage, acceptability and uptake of nutrition programs by the target population. There was heterogeneity in answers provided by respondents. When probed about the extent of coverage, acceptance and utilization, vague answers were provided by participants in most instances. Study results of coverage, acceptability and utilization of nutrition activities were compared to the Nigeria DHS 2008 Taraba State indicators to determine if the findings of this study are in keeping with the DHS findings.

The significant theme which emerged points to a relatively low coverage and utilization of nutrition related activities in the target population in keeping with the DHS findings. However, acceptability of these activities was perceived to be high.

Coverage

Respondents defined coverage as the reach of nutrition programs. Coverage differed by program and also by location. Respondents reported coverage of the following programs though the number of individuals served was not mentioned:

1. Coverage of nutrition education and provision of food supplements in Sardauna LGA extends throughout the LGA and targets both women and children using facility and community based approaches.
2. Coverage of PHC centers that provide curative, preventive and rehabilitation services in Sardauna was about 75% with coverage extending across the border into Cameroun.
3. Immunization services were considered to be meeting its target according to a respondent working with a multilateral organization
4. Coverage of PHC programs which include antenatal services, health education, counseling and food demonstration were limited to Bali town and health facilities because of lack of funds and bad terrain.
5. In Ibi LGA, the coverage of health education, immunization and family planning programs were limited to some areas of the LGA but specific details were not given.
6. Coverage of nutrition programs like vitamin A distribution was greatly reduced during the rainy season in Ardo-Kola.
7. Facility based service providers for family planning programs and services were available in the 16 LGAs of the state. Coverage within the LGAs was not stated.

8. Location of HIV/AIDS and PMTCT centers varied across the state. Location was based on the population of the community and also proximity to the neighboring state.

Though coverage of all the programs mentioned above were not provided, the current DHS states that 87.6% of the households in Taraba had iodized salt and 12.5% of households had a mosquito treated net. Proportion of women who sought ANC from a skilled provider was found to be 39.3%. The DHS also reports that 21.1% of women delivered in a health facility. About 21.4% of women aged 15-49 received HIV counseling during ANC for their most recent birth (2 years preceding the study). The DHS reports that approximately 7% had been exposed to family planning messages on the radio, 4.2% from the television, 2.0% from newspaper and magazines and 4.8% from other sources. However, 89.9% were not exposed to the messages via these media sources.

In summary, the qualitative findings indicate that immunization and family planning were perceived to have higher coverage in comparison to maternal nutrition and other health related programs. Critical barriers to coverage of maternal nutrition activities as perceived by the respondents include lack of funding and difficult terrain. Comparison of the study indicators with similar DHS indicators shows low levels of coverage of nutrition programs.

Acceptability

Respondents described acceptability with words such as ‘high’, ‘widely accepted’, ‘embraced’ and ‘like’. It was reported that health education and provision of vitamin A

were widely accepted by the target population. Vitamin A because of its high acceptability had also made OPV vaccines acceptable. One of the respondents provided a reason for high acceptability of immunization: "*Taraba generally is an open society somehow, so these programs are widely accepted." (IDI-5, Multi*). This may be interpreted that Taraba State is a relatively liberal state in comparison to some other northern states where immunization had been declined by some community members and leaders. Folic acid, iron tablets, HIV/AIDS, PMTCT, family planning programs and services were reported to be highly acceptable.

The study results show that though coverage of nutrition activities was found to be relatively low, acceptability by women who had access to these services was high.

Utilization

Although respondents did not quantify the rate of utilization of these programs, utilization was described by the participants with words like 'low'.

The 2008 DHS reported that 91.1% of the households in Taraba State were consuming iodized salt[4]. Of the women who had a child born in the past 5 years, 22.1% had received post-partum vitamin A, 5.1% took deworming medication during the last birth and 43.8% did not receive any iron supplements during pregnancy. Of those who received any iron supplements during the last birth, 20.8% received the supplements for less than 60 days, 9.6% received for 60-89 days while 18.1% received these supplements for greater than 90 days.

[4] Inadequately and adequately iodized salt

A respondent working with an FBO mentioned that acceptability of iron tablets and folic acid was high but utilization was low because of the lack of means to purchase in instances when these drugs were not provided free. Likewise, another respondent working with an FBO mentioned that utilization of nutrient supplements was low because of associated misconceptions:

> *"Some believe that taking nutrient supplements make their children stubborn after giving birth or big during pregnancy and so making it difficult for them to deliver the child. Some say the drugs make them hungry making them eat more and they do not have food to eat" (IDI-12, FBO).*

Remoteness of the communities, cost of these supplies, unawareness of the existence of maternal nutrition programs, difficult terrain, religious and cultural beliefs were factors associated with reduced access, delivery and utilization of the programs. Analysis shows that some measures to increase utilization of maternal nutrition programs had been implemented: provision of ANC at all health facilities and the Maternal, Neonatal and Child Health week (MNCHW) carried out in June 2010 to promote utilization of iron supplements. Despite these efforts to increase utilization of maternal nutrition programs, utilization perceived to still be low.

Identifying barriers

During the interviews respondents were asked to identify what they perceived as barriers to the attainment of good health for the mother and child and the community. Broadly, respondents identified several critical barriers which were then categorized as

non-medical and medical challenges faced at the state, LGA and community levels. Distinctions made by the respondents during the interview show that medical challenges were diseases which may lead to death while non- medical challenges result in ineffective functioning of facilities and programs or policies.

Medical challenges were often discussed as the most prevalent diseases affecting individuals thus constituting a major problem. These diseases include malnutrition (poor diet), malaria, anemia, onchocerciasis, gastroenteritis, pneumonia, poliomyelitis, cholera, HIV/AIDS, STIs, hepatitis, typhoid, preterm delivery and abortions. Malaria was noted to be the most commonly mentioned medical challenge affecting women and children. Malnutrition was also recognized as a major challenge usually second to malaria. A state level respondent demonstrated a link between malaria and malnutrition:

> *R: "Yes, like malaria for instance, is contributing to a lot of deaths. Then if you also, if you also consider that each of these deaths has underlying nutrition factor, under nutrition especially, I will say nutrition and eh, infectious disease are very serious". (IDI-1,State).*

According to the interviews, interventions such as immunization, health education, drug administration (Mectizan®, iron supplements, folic acid and antimalarials) and distribution of ITNs are currently used to address these medical challenges. These medical challenges point to a need for effective implementation of health programs in Taraba State.

Causes of maternal malnutrition

Poverty and ignorance were often given by respondents as causes of malnutrition. The link between these two was explained by some of the respondents. All of the

respondents who mentioned poverty as a cause of malnutrition discussed it in relation to ignorance or lack of education. Ignorance is thought to be sometimes referred to as illiteracy or lack of education. Another respondent reported that "hookworm" causes malnutrition but none of respondents linked poverty, pregnancy and malnutrition. A respondent discussed how poverty and ignorance lead to malnutrition:

> *R: "…..during the third quarter generally to say when everything has gone back to the farm and everyone is struggling. To even eat in some of these villages is a problem. Those that, the children in the cities eat better than the children in the villages because of the level of poverty there. So that could be the number one factor. Then the other thing is that mostly in the villages, they don't eat balanced diet, it is only carbohydrate foods that they have. You can eat maize from morning to evening. I take (akamu) pap in the morning, tuwo (maize gruel) in the afternoon and tuwo in the night. So that could be a major contributing factor.*
>
> *I: There is a major class difference? Are there certain or particular groups of people where this severely malnourished are coming from? The chances of somebody being malnourished is higher when you belong to this group.*
>
> *R: Naturally, it should be the low class people that will have malnourished children. That one is, It goes without saying. I know from the figures that we have, most of such children come from the LGAs most far from the urban LGA sites like Jalingo or Wukari or Gembu or Takum where you have much business programs going on. The level of poverty there is not too high. I want to say, eh, it goes without saying that it is the low class people that definitely will have that rather than the…. You don't expect…You will have it in Jalingo quite ok, even in Jalingo, the class of people you will discover that it is the low class people." (IDI-5, Multi).*

Although respondents were not directly asked to state the benefits of maternal nutrition, two respondents reported the benefits of maternal nutrition during the interviews. One respondent explained that adequate maternal nutrition promotes a better

society and better economic development. While winding down one of the interviews, another respondent was asked if there was any additional information that could be provided to help with the research. The respondent then reported saying *"we want to improve maternal nutrition because it helps a lot with the children." (IDI-8, State).*

Non-medical barriers to implementation

Explanation given for the emergence of these challenges is that the government gives less than optimal funds and also employs inappropriate staff.

Lack of funding

Lack of funding was the most common non- medical challenge reported by the respondents. The issue was often addressed in connection to all health program implementation with a more nuanced description being funds not available to address nutrition activities. This dearth in funding was also discussed in connection to unavailability of funds to pay salaries for existing staff and lack of incentives given to community distributors for Mectizan® and vitamin A. An excerpt from one of the LGA transcripts describes a consequence of lack of funding:

> R*: "Funding is generally a problem in the PHC and even LGA. We have not received any funds since my inception into the office. All programs we carry out are funded from our pockets and that is why it is difficult for us to reach some remote villages in the LGA. For example to get to (mentions name of a village), we need to pay 300 Naira to (mentions name of a village), and then take a motor bike for 1000 Naira to (mentions name of a village), This makes us restrict some of our visits to the nearby areas. Sometimes the health worker in charge of the*

health center may decide to give you some money to pay your way back. This makes us to go for health talks in the clinic that are not far then we have to use our money." (IDI-21, LGA).

Lack of funding was discussed a great deal in connection to resource allocation and budget. The state government is responsible for funding nutrition activities at the state and LGA levels but funds provided were insufficient to carry out activities. Other sources of funds used to carry out nutrition activities include donor agencies and contribution from respondents. A top ranking state level respondent mentioned that budgeting for nutrition was not always done so resources were not allocated and thus funds were lacking for nutrition programs. Sometimes, it was perceived from the interviews that budgets were made but there are no funds released.

Lack of funding was discussed more by respondents working at the state, LGA, FBO and NGO level than respondents working with multilateral organizations. At the state level, one of the participants mentioned that funds were not available to carry out nutrition and other health programs while another mentioned the unavailability of funds for "celebration" and home visits. A "within group comparison" carried out among respondents at the LGA level shows that the respondent working in Ardo-Kola LGA discussed lack of funding for training of personnel and evaluation of nutrition programs in the LGA. In Bali LGA, the inability to pay health workers' salaries was highlighted. In Ibi LGA, a shortage of PHC funds was reported.

In summary, as a result of inadequate funding from the state government, maternal nutrition programs at the state and LGA levels were not effectively implemented or

sustained. Rather donor agencies were the main sources of funds and supplies such as vitamin A, ITN and antimalarials.

Personnel

Respondents identified staff constraints as a barrier to implementation of nutrition programs. One respondent at the state level reported that the number of trained personnel to deliver maternal and child health services at the LGAs was inadequate with some facilities being understaffed. The respondent also reported that some clinics had more junior staff (for example cleaners) than trained health staff. In addition, a respondent working for an FBO explained that one of the health facilities had no doctors and nurses and the government was not responsive in filling this gap. High staff turnover was noted because salary paid to health workers was so little.

Respondents recognized that training of staff was necessary for skill acquisition. However, they explained that these trainings were not frequent enough and in some instances were never held.

Bureaucracy

Respondents defined bureaucracy as protocols or steps that need to be followed to ensure that an activity is carried out or a policy is implemented and this was usually portrayed as a complicated process. This issue was most often discussed with the issue of budget and resource allocation and was raised by individuals at the state, LGA and NGO levels. The budget and resource allocation process seems to be cumbersome. This lengthy process involves the incorporation of budgets from different sources into the budget of

PHC which is submitted to the budget department and then forwarded to the LGA and then to the state. Funding was also released in the same manner. As a state level respondent would put it:

> *R: "…..Then budgets are approved, the government gets funds, the ministry gets funds for a monthly running cost, the ministry has to write memos for the governor for approval. They manage within the limits of the approved budgets. So it is not as if it gets bulk allocations for implementing programs and that's what draws back the system 'cause you have to ask specifically for funds to execute project programs by writing memos for approval to his Excellency." (IDI-1, State*)

Lack of partnership

Support was described in terms of funding or provision of supplies by partner organizations or the state government. Although support in terms of funds was grossly lacking, supplies such as food supplements, food stuff, ITNs, vaccines and drugs were more readily provided by the donor organizations. UNICEF was responsible for the provision of a large proportion of supplies including vitamin A.

It was noted that multilateral organizations discussed partnership as an asymmetrical relationship, the multilateral organization providing supplies and technical support but not receiving any assistance from the state or LGA.

Some respondents reported lack of integration with other organizations working on maternal nutrition programs. Explanations given for the lack of partnership include ineffective communication, deferring of responsibility and the fact that some

organizations prefer to work independently. NGOs reported that support was coming from other organizations but not necessarily from the government.

At the state level, there was no coordination of programs between the state nutrition unit and other organizations working in the state:

> *I: Moving around, I came across some FBO, CBO like the catholic, ECWA. How is your relationship with all the NGOs, there might be some other organizations in the community/ village you are working with?*
>
> *R: We have not been working together.*
>
> *I: Why have you not been working together with them?*
>
> *R: Sometimes, our focus does not reach that place, it seems as if everyone is working on their own and you know I don't have the right to go and say we should we collaborate since when I came on board, I have not met them with us and I cannot go and start bringing them along. (IDI-2, State).*

Overall, the analysis shows that partnership on nutrition programs was found to be asymmetrical and poorly coordinated. State level respondents had limited knowledge of the ongoing nutrition programs because of lack of effective partnership with other organizations.

Prioritization

Results show that donor agencies and the state government placed more emphasis on immunization than nutrition. A state level respondent mentioned that the government supports immunization more than nutrition as the government only allocated (32,000 US dollars) five million Naira (considered an inadequate amount) in 2010 to maternal

nutrition programs. Government support towards nutrition was also said to be "zero" by another state level participant. To reiterate this, an LGA official was quoted to have said:

> *R: "For example in January this year, we considered 9 MCH clinics, we estimated a budget of 3 million Naira to buy equipment and food materials for demonstration to community members and logistics. The materials we intended to buy were stoves, gas cookers and solar powered fridges for the preservation of food items. The budget has been submitted to the LGA and we have been waiting-waiting for the intervention of God" (IDI-21, LGA).*

Respondents were hypothetically asked how they would spend one million Naira if given. The question was to determine how they would prioritize the challenges they were facing and how malnutrition was regarded in comparison to other challenges. Ideally, high prioritization of malnutrition shows that respondents viewed it as a fundamental problem. Many of the respondents ranked malnutrition as a fundamental problem second to immunization and were willing to allocate specific amounts of money to help solve nutrition related problems. Of the 26 respondents, only 3 proposed to use the funds for other health programs and not necessarily nutrition, programs such as hospital visits, treatment of children's ailments and training of staff and traditional birth attendants.

The emergent theme was that participants at all levels recognized maternal malnutrition as a problem though the state government did not as evidenced by limited resources allocated to maternal nutrition. In reality, resource allocation by donor agencies and the government favor immunization much more than nutrition. For the year 2010, 102 million Naira (652,000 USD) was assigned to the maternal and child care services in Taraba State. Of that amount 62 million Naira was used for construction of the state

epidemiology department, 5 million Naira (32,000 USD) was allocated for nutrition and the rest was allocated for other maternal and child care services in Taraba State.

Other subtle non- medical challenges identified as barriers to implementation by the respondents include:

- Resource constraint and infrastructure: This includes lack of office and kitchen space to carry out nutrition demonstrations in the communities and lack of access to some remote areas because of bad terrains which limit program implementation.

Identifying barriers to accessing maternal nutrition programs and interventions

The list below demonstrates perceived barriers to accessing maternal nutrition programs and interventions by women in the communities.

1. Lack of funds to access available resources: Women in the communities need funds to cover the cost of transportation to where nutrition resources can be accessed and funds to purchase these services. Both were found to be barriers to women accessing the available resources. To support this, a respondent at the FBO level mentioned that folic acid was accepted by the women but they did not have the means to purchase it.
2. Mobility and geographic constraints: This was highlighted by respondents as long distance and bad terrain to facilities where maternal nutrition programs and interventions were situated. A respondent reported that because distance was a

barrier, this made pregnant women to delay presentation at clinics until they were in labor and so they do not know much about nutrition. Also because of distance, it has been difficult to designate a day to bring all women to the clinics for ANC visits.

3. Unavailability of maternal nutrition programs and interventions in some communities: Some programs such as health education and distribution of vitamin A were limited only to certain towns and health facilities and so fewer women were able to access these programs. Lack of infrastructure and personnel is associated with unavailability of the programs and intervention.
4. Socio-cultural barriers: These were perceived by respondents to influence access to maternal nutrition programs to a great extent. These barriers include:
    a. Ignorance/ illiteracy: Certain communities believe that western education was “spoiling their wives and hindering their female children from getting married early”. Illiteracy may be associated with reduced access to nutrition programs because the value of some nutrition programs may not be appreciated by uneducated women.
    b. Lack of awareness of existing programs and interventions which may be associated with low coverage of maternal nutrition programs and also low level of education among women. Cultural and religious restrictions usually enforced by the men (husbands) could also limit awareness of maternal nutrition programs. For example cited by one of the respondents was that health workers are not allowed into homes in the communities except when permission is granted by the king of the community in a

written letter. Some religions restrict movement of women making it difficult for them to access programs.

c. Gender disparities: Respondents mentioned that women have limited decision making power. Husbands are responsible for making a decision as to when a woman should attend ANC or go to seek health care.
d. Stigmatization: A respondent at the FBO level working with HIV/ AIDS patients mentioned that home visits paid to malnourished patients and HIV/AIDS patients were associated with stigmatization by other members of the community.
e. Misconceptions associated with some of the programs or interventions: It was mentioned that some women avoid taking nutrient supplements because they do not want difficult deliveries or stubborn children. Another respondent reported that malnutrition used to be a spiritual disease.
f. Food taboos prohibit pregnant women from eating nutritious food substances such as eggs. These taboos were perceived to have declined in recent times in the communities because of increased awareness.

Appendix 4 shows ongoing nutrition activities and the barriers to their implementation.

Recommendations and potential platforms for delivery of the maternal nutrition policies and programs provided by the respondents.

Recommendations were suggested by the respondents to help improve the nutritional status and ultimately the health status of women in the state. This section provides respondents' recommendations and potential platforms for program delivery.

Personnel

It was recommended by respondents that more trained staff be employed at health facilities to help provide maternal nutrition interventions. Training of more individuals in the community to become health workers and also training of existing health staff was recognized by respondents to improve access and implementation of nutrition programs.

Infrastructure and Supplies

Respondents recommended government collaboration with the communities to provide funds, vaccines, food stuff and supplements and nutrition centers in each LGA. To increase access and implementation of maternal nutrition activities, it was recommended that roads be constructed. Provision of health facilities where deliveries can be taken and drilling of bore holes to address water problems were recommendations provided to address medical challenges.

Education

Respondents suggested raising awareness among women on the need for food diversification, good sanitation and HIV/AIDS. In addition, replication of nutrition

programs performed in the 3 focus LGAs (Lau, Donga and Gashaka) was recommended by respondents. UNICEF is responsible for giving the women nutrition education, conducting nutrition demonstrations, training and supporting individuals in the 3 LGAs. Thus, it was recommended that these programs be replicated in other LGAs so that the communities become conversant with such activities.

Potential platforms for delivery of maternal nutrition programs.

National Immunization days and use of women's group were provided as potential platforms for delivery of maternal nutrition programs.

CHAPTER 5: DISCUSSION

The International Livestock Research Institute (ILRI) defines a policy as "a definite cause of action or method of action selected by the (government, institution or individual) from among alternatives and in the light of given conditions, and to guide and usually determine present and future decisions" (International Livestock Research Institute, (1995)). In order to effectively disseminate and implement these actions, the policy environment at the three tiers of government in Nigeria has to be suitable, identifying policy objectives and stating the policy instruments needed to achieve these objectives. However, multiple challenges and ongoing politics are threats to the policy environment. This chapter is organized based on the four study aims and discusses the study results.

Specific Aims

1. To identify existing maternal nutrition policies and knowledge of relevant policies and guidelines at the state and LGA level.
2. To identify respondents' perception of the knowledge of coverage, acceptability and utilization of the maternal nutrition programs from the perspective of the state and LGA policy and decision makers.
3. To identify barriers at the state, LGA and community level to implementing and accessing maternal nutrition programs and interventions.
4. To provide recommendations and potential platforms for expanded delivery so as to strengthen maternal nutrition policies and programs.

Existing maternal nutrition policies and knowledge of relevant policies and guidelines at the state and LGA level

For policies to be effective, policy and decision makers must realize that knowledge is necessary for translation of these policies to programs. Interpretation of the results shows a top down non- decentralized approach to policy formation in Nigeria with the federal government being the main policy actor responsible for the formation of maternal nutrition policies. States, LGAs, NGOs and FBOs are rarely involved in the policy making action. No policy actors and instruments are available at the state and LGA levels to help guide maternal nutrition policies. Formulation of these policies does not appear to be driven by an evidence based approach to policy making.

Specific maternal nutrition policies do not exist but are scattered in other national nutrition policies. This indicates lack of recognition of maternal malnutrition as a cause of maternal and child morbidity and mortality. The existing policies do not necessarily translate into action at the federal, state and LGA levels and this might be explained by ineffective dissemination of these policies, government inconsistencies, politics and lack of ownership of these policies. Although, the National Committee on Food and Nutrition (NCFN) was established to coordinate nutrition activities in the country, it has remained dormant over the last few years (Olayiwola, Soyibo, & Atinmo, 2007) indicating a lack of government commitment to address maternal nutrition issues. Presently, NCFN is under the Nigerian national population council (not the federal government) which has neither the funds nor expertise to assist NCFN (Olayiwola, et al., 2007).

None of the respondents was able to identify any of the national policies on nutrition which indicates relatively low uptake of the policies and lack of engagement between

policy and decision makers at the federal, state and LGA level. The minimal impact of the maternal nutrition policies and consequently the high maternal morbidity and mortality related to malnutrition in the state may be linked to the respondents' paucity of knowledge of maternal nutrition policies which is essential for the successful implementation of nutrition programs and activities. However there has been is limited research carried out on analysis of food and nutrition policies (Ortiz-Moncada, 2005) so the connection between appropriate policies and implementation is not irrefutable.

This findings in this study on policies are consistent with findings from a study conducted by Koehlmoos in Bangladesh that the policy making environment is a closed one with a "bureaucratic chain of government and top-level officials making all the final decisions." (Koehlmoos, Rashid, Rahman, Cravioto, & Hanney, 2009). In keeping with the findings of this study, research carried out in Indonesia on HIV policies also reported that lack of adequate information on the wordings on policies led to poor program implementation by the policy makers (Spratt, 2009). Additional qualitative work at the federal government level in Nigeria is recommended to determine knowledge of maternal nutrition policies and how these policies are being translated for use.

Respondents' perception of the knowledge of coverage, acceptability and utilization of the maternal nutrition programs from the perspective of the state and LGA policy and decision makers

Respondents recognized a wide range of nutrition activities targeted toward non-pregnant and pregnant women with their main delivery platforms being health facilities. However the coverage and utilization of these programs were said to be relatively low.

High coverage and utilization of effective maternal nutrition programs will lead to a reduction in maternal morbidity and mortality caused by malnutrition. The coverage and utilization of these programs can be used as a proxy to measure the performance of a health system or a policy. They can also be used to determine if targets are reached and if high levels of programs are being sustained (Bos & Batson, 2000). The coverage and utilization of ongoing nutrition programs from the study indicate that the health systems in Taraba State are not functioning effectively. They also indicate that women who are the targets for these programs are not being reached and low coverage and utilization of these programs is the norm as indicated by the result of this thesis and the 2008 DHS.

Low coverage and utilization is influenced by the geography of the different areas, lack of funds, inadequate health facilities, inadequate personnel, limited delivery platforms for maternal nutrition programs, lack of ownership of these programs, lack of collaboration between organizations providing the services and religious and cultural beliefs. Minimal efforts and inappropriate delivery strategies have been put to address these factors. From the interviews, respondents appear oblivious to the fact that their actions and attitudes also affect the way women seek maternal nutrition services.

Monitoring and evaluation of programs are not performed. Thus it is difficult for the government and policy makers to see the need to increase coverage and utilization and also make appropriate policies, when there are no systemic efforts to document effects. The public health implication of the lack of monitoring and evaluation of these programs is that a reduction in maternal morbidity and mortality appears to be a herculean task. A baseline survey should be conducted to determine the coverage, acceptability and utilization of maternal nutrition programs at the LGA level in Taraba State. Subsequent

surveys should also be conducted on a regular basis to see if there are improvements noted in the nutrition indicators and also to also determine the effectiveness of the programs.

Barriers at the state, LGA and community level to implementation and access of maternal nutrition programs and interventions

Effective nutrition program implementation would require policy and decision makers to confront several barriers which include poor resource allocation, inadequate personnel, bureaucracy, prioritization and lack of partnership. Maternal malnutrition has not been recognized as a health priority at the state and LGA levels as evidenced by the limited resources allocated, inadequate personnel, limited dissemination of nutrition programs and limited collaboration between nutrition stakeholders. Inadequate funds allocated to maternal nutrition program demonstrates low prioritization by the government.

Partnerships between stakeholders have been asymmetrical with UNICEF being the major organization concerned with nutrition (Berg & Austin, 1984). Barriers to implementation and access are in keeping with those highlighted in the study conducted by Faillace, which were lack of funding , inadequate program ownership at regional/ district level, lack of adequate nutrition policy, inadequate existing program guidelines and inadequate supply/delivery of supplements (Faillace, Rah, & Harvey, 2008).

Lessons learnt from immunization

The federal government of Nigeria places high priority on immunization. The National Program on Immunization (NPI) was developed to demonstrate national consciousness and ownership for immunization charged with the mandate to effectively control vaccine preventable diseases through immunization and the provision of vaccines. The following strategies employed by the Federal Government of Nigeria include routine immunization at health facilities, supplementary immunization activities (vaccines delivered house to house and fixed vaccination posts in the communities) and the "Reaching Every Ward Strategy" which involves the use of health workers to deliver vaccines to different LGA wards. The NPI has a strong inter-sectoral partnership (WHO, n.d). These strategies have worked to address barriers to implementation and access in Nigeria and to increase immunization coverage and utilization. These lessons can be applied to improve maternal nutrition programs.

Examining recommendations provided by respondents

Several recommendations were provided by the respondents at the different administrative levels. These recommendations mainly address barriers to implementation and not barriers to access of maternal nutrition programs. This implies that policy and decision makers appear disengaged from the communities and do not consider barriers to access an important issue to be addressed. Recommendations provided did not also address the basic, underlying and immediate causes of maternal malnutrition. Failure to

recognize and address these causes of maternal malnutrition lead to the elevated maternal morbidity and mortality rates seen in Taraba State.

Recommendations based on study findings.

Recommendation and potential platforms for expanded program delivery are provided in order to strengthen the policy environment in Taraba State and help reduce the morbidity and mortality associated with maternal malnutrition. The recommendations listed below are aimed to create a better policy environment for maternal nutrition in Taraba State and may have some relevance in other parts of the northeastern region of Nigeria.

1. Policy formulation is an integral step in creating a suitable policy environment for implementation. Instead of what appears to be a top down, non-decentralized policy approach, an integrated multi-sectoral approach should be employed in developing maternal nutrition policies. Different stakeholders from the state, LGA, agriculture, health, social welfare and education sectors, and national planning organizations, religious leaders, community members, private and multilateral organizations should be involved to encourage partnership and collaboration (Lechtig, Klein, Daza, Read, & Kahn, 1982; Spratt, 2009). Specific maternal nutrition policies should be formulated to address pregnant and non-pregnant women with stakeholders involved at all stages of policy formulation and implementation. These policies should address the causes of malnutrition and

be accompanied with guidelines that specify implementation mechanisms to ensure consistency around the country (Spratt, 2009).

A system to ensure ownership and accountability at the different administrative levels should be instituted. The study author recommends that nutrition committees made up of different policy actors be set up at the federal, state and LGA levels with the responsibility to monitor planning, development and implementation of maternal nutrition policies and programs. LGA nutrition committees should be made accountable to the state committee and federal committees. These committees should also be responsible for frequently evaluating maternal nutrition performance indicators. Annual meetings should be organized for all nutrition committees at the different administrative levels to evaluate these performance indicators. Capacity building of policy and decision makers with emphasis on improved responsiveness and supervision will play an important role in producing a suitable policy environment for the implementation and dissemination of maternal nutrition policies (Olayiwola, et al., 2007; Spratt, 2009).

2. Awareness of policies by decision makers and awareness of nutrition programs by the communities is fundamental to the implementation and access of nutrition programs. This study shows low uptake of the policies and lack of engagement between policy and decision makers at the federal, state and LGA level. The study author recommends that awareness of maternal nutrition policies among policy and decision makers be raised through regular training and update programs. The importance of adequate nutrition in women and consequences of maternal

malnutrition should be emphasized as reasons for the creation of these policies. This may increase prioritization of maternal nutrition policies and programs among the target group. Awareness should also be raised at the community level using media campaigns, facility based approaches and women's groups on the importance of maternal nutrition and utilization of maternal nutrition programs. General misconceptions (such as 'having big babies when iron supplements are taken during pregnancy') associated with nutrition programs, food taboos and the need to seek healthcare should be addressed during the sessions. Nutrition education programs should also be targeted at men to increase cooperation from them and increased uptake of nutrition programs in the communities.

3. Female empowerment through the use of microcredit schemes: The literature reviewed shows poverty as a root cause of maternal malnutrition. Increasing the economic status through provision of microcredit loans to women is crucial to address maternal malnutrition. Research has shown that microcredit participation has positive effects on the nutritional status of female clients. Longer microcredit participation was associated with higher hemoglobin levels and lower food insecurity (Hamad & Fernald, 2010). Female empowerment achieved through microcredit schemes may also be seen to discourage gender disparities, early marriage, early child birth and short birth intervals which are intermediate and underlying causes of maternal malnutrition. It is recommended that women in Taraba State be provided with microcredit loans to reduce maternal malnutrition.
4. Increased resource allocation and infrastructure: Adequate resource allocation is fundamental in ensuring sustainability of programs. The federal, state and LGAs

should increase funding and number of trained personnel allocated to maternal nutrition programs. Budgets made for nutrition should address specific nutrition programs to avoid lack of accountability at the different administrative levels. Bureaucratic system for release of funds should be minimized as much as possible to ensure effective and timely implementation of maternal nutrition policies and programs.

Trained health personnel should also be assigned to implement maternal nutrition activities at the facility and community levels. These health personnel should be evaluated on a regular basis to encourage better job performance.

Impassable roads and inadequate health facilities are major infrastructural barriers to the implementation and access of nutrition programs. The study author recommends construction of roads and health facilities in remote areas to increase coverage and access to nutrition programs. The health facilities should be adequately equipped to treat cases of maternal malnutrition and provide micronutrient supplements.

The recommendations are essential for effective implementation and access of maternal nutrition policies and programs. Interventions to increase implementation and access to maternal nutrition programs should take into account multiple recommendations mentioned above.

Table 6 shows the various nutrition programs and interventions that are ostensibly operating in Taraba State and potential platforms for their expanded delivery.

Table 6: Potential platforms for expanded delivery of maternal nutrition programs in Traba State, northeast Nigeria.

Nutrition Program	Description	Target population	Potential delivery platforms
Provision of routine antenatal drugs.	Provision of iron and folic acid supplement Antihelminths Antimalarials Multivitamins	Pregnant women and post-partum women.	•Use of trained traditional birth attendant s to provide antenatal care services and drugs. •Use of community health workers to deliver these drugs and provide awareness • Use of trained drug vendors •Media campaigns to raise awareness •Health facility based • Use of MNCHW
Provision of iron supplements	Provision of sprinkles as preventative measure for anemia.	Adolescent girls and non-pregnant women	•Market based delivery system (using coupons or sold at low cost) •Community based distribution •Health facility based distribution •Drug vendors •Use of fixed vaccination posts •Media campaigns to raise awareness • Use of MNCHW
Iodized salt	Provision of iodized salt capsule where salt is unavailable	Pregnant and non- pregnant women	•Community based distribution •Drug vendors •Media campaigns to raise awareness • Use of MNCHW
Food fortification	Fortification of wheat and maize flour with iron, zinc and folic acid	Pregnant and non-pregnant women	•Market based delivery system
Post-partum vitamin A	Provision of vitamin A to post-partum women	Post-partum period	•NID or sub national immunization days •Use of community based vaccination posts. •Media campaigns to raise awareness • Use of MNCHW

Nutrition Program	Description	Target population	Potential delivery platforms
Food diversification	Involves food demonstrations, provision of seeds and community based gardens	Households	•Media campaigns to raise awareness •Agricultural incentives •Provision of seeds through market based delivery system and community volunteers. • Use of MNCHW
Distribution of ITN	Involves distribution of ITNs.	Households	•Fixed vaccination posts •Community based distribution. • Use of MNCHW
Nutrition education	Providing nutrition education to the communities	Communities and households	•Media campaigns to raise awareness through the use of radios, televisions, posters, banners, group and individual discussions. •Use of religious meetings •Facility based education •School based education • Use of MNCHW

Table adapted from Scaling up nutrition: what will it cost by Horton, S.et al, 20

CONCLUSION

This study provides evidence that a top down non- decentralized approach to maternal nutrition policy formation exists in Nigeria. These policies are disseminated primarily from the federal level to the state and LGA levels but are not used for action neither do they provide benchmarks for maternal nutrition policy implementation. The respondents acknowledge the existence of these policies but were unable to identify any of the national policies on nutrition which indicates relatively low uptake of the policies and lack of engagement between policy and decision makers at the federal, state and LGA level.

Several ongoing nutrition programs exist in the Taraba State but these programs have a low coverage and utilization among women of reproductive age. Several barriers to their implementation by policy and decision makers exist as well as barriers to access by the women in the communities. Using coverage and utilization of these programs as a proxy to measure the performance of a health system and impact of maternal nutrition policies, it can be inferred that Taraba State health systems and policy implementation with regards to maternal nutrition are not functioning effectively with low coverage and utilization of these programs.

Recommendations to improve maternal nutrition policy implementation, access to nutrition activities and potential platforms for expanded delivery of maternal nutrition programs are based on respondents' input and existing literature.

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APPENDICES

Appendix 1: In-depth interview guide
TITLE: Improving maternal and child nutrition outcomes study in Taraba state, Nigeria.

INTRODUCTION: This project aims to improve maternal, neonatal, and child health (MNCH) outcomes through better designed policies and programs that enhance nutrition throughout the life cycle, with a particular focus on maternal nutrition.

RESPONDENTS: (subject to change) In depth interview with health policy makers and implementers at the state and LGA levels including officers in government, FBO, and NGOs.

INFORMED CONSENT: Participation in the study is voluntary and participant can withdraw at any time. Participants' personal information will be de-identified to maintain anonymity.

Organization and Structure of the PHC – To be asked of the state director of PHC only

1. How is the Primary Health care system structured?

   Probe: What are the different units?

2. What do the different units do?

   Probe: MCH and nutrition units

   Probe: Can we get an Organogram / flow chart

Resource Allocation:

1. What are the current resource allocation patterns of the government (national and state) for health-related activities in Taraba State(ie how much and in what form goes to what types of health issues?)

   Probe: rank health-related activities in order from those receiving the most to the least government resources

   Probe: How does the government set priorities for allocation of resources to health-related activities (ie political, evidence based, donor driven, community needs)

2. What are the current allocation patterns of nongovernmental donors for health-related activities in Taraba state (ie. How much, and in what form goes to what types of health issues)

   Probe: rank health-related activities in order, from those receiving the most to the least government resources

Perceptions and Prioritization of Problems Facing Taraba State:

1. What do **you** consider to be the main problems facing Taraba State?

   How are these currently being addressed in Taraba State?

3. What do you consider to be the main health problems?

   How are these currently being addressed?

4. What do you consider to be main health problems for women and children in this state?

   How are these currently being addressed?

   How do maternal health problems compare with other general health problems with respect to urgency / severity of the situation? (rank in priority? Explain comparisons / ranking)

Prioritization of Nutrition in Maternal Health

1. How would you rank the following activities in regards to their importance for improving maternal and child health in Taraba state (show them a list of the following interventions)?

   Improving child nutrition

   Family Planning

   Malaria prevention and treatment

   HIV/AIDS testing, treatment, prevention

   Diagnosis, treatment, prevention of other NTDs

   Improved water sources (including reduced distance) and sanitation

   Improving maternal nutrition: utilization of iodized salt, food supplementation, food fortification, Fe/folate supplementation, nutrition education and counseling

   Increasing access and/or utilization of ANC

   Increasing access and / or utilization of trained birth attendants (either in the home or facility based)

   Increased access / utilization of emergency maternal obstetric care

   Women's empowerment – education, reduced gender discrimination, livelihoods

   Probe: Please explain rankings

5. If you had 1M Naira to allocate to health-related problems in Taraba, how would you allocate it?

Probe for specifics and details– for example if said would allocate XX$ to mortality prevention – how would that be allocated? Increased training of TBAs, increased # of facilities, increased emergency obstetric care, prevention of anemia, eclampsia ect --

National policies / technical guidelines relevant to maternal nutrition and their dissemination to the state

1. What current national policies, action plans, and / or technical guidelines include guidance on nutrition, in general?

   Probe: Maternal and Child Health Policies

   Probe: Food Security Policy

   Probe: Primary Health Care Policies

   Probe: Micronutrient supplementation (Vit A, Fe, Folic acid)

   Probe: Antenatal, maternal nutrition education and counseling

   Probe: Food fortification (staple grains, milk, sugar)\

   Probe: Salt Iodization

   Probe: Targeted food supplementation

   Probe: School feeding

   Probe: Nutrition education in schools

2. What types of recommendations / guidelines do these policies provide with respect to nutrition

   Probe: Micronutrient supplementation (Vit A, Fe, Folic acid)

   Probe: Antenatal, maternal nutrition education and counseling

   Probe: Food fortification (staple grains, milk, sugar)\

   Probe: Salt Iodization

   Probe: Targeted food supplementation

   Probe: School feeding

   Probe: Nutrition education in schools

3. Which of these nutrition policies/ guidelines include guidance related specifically to women's nutrition and/or health (either during pregnancy, lactation, or in adolescence)?

Follow up: What trainings or capacity building has occurred on these (probe: federal, state, LGA level)?

4. Can you tell me about any other policies or guidelines that include guidance related specifically to women's health (probe – anti-malarials, antihelminths, family planning including age at marriage and first birth, birth spacing, fertility and family size)

   Follow up: Trainings or capacity building on these (probe: federal, state, LGA level)?

5. **For state/LGA governmental officers only:** How are these policies used at the state, LGA, and ward level? Are national policies adopted outright or does the state generate its own policies based on the national ones? How do the state level policies differ from the national level policies?

Current state of maternal nutrition programming in Taraba

1. Including both governmental and nongovernmental, what current activities / programs <u>on nutrition</u>, in general, are currently operating in Taraba state?

   Probe: Micronutrient supplementation (Vit A, Fe, Folic acid)

   Probe: maternal nutrition education and counseling

   Probe: Food fortification (staple grains, salt iodization, milk, sugar)

   Probe: Targeted food supplementation

   Probe: School feeding

   Probe: Nutrition education in schools

2. Who is delivering these programs?

3. How are these being delivered? Ie. delivery system (facility based, campaigns, mobile services, safety net or emergency programs, targeted delivery systems, community based programming)

4. Which of these target women or girls (ie. Pregnant, lactating, adolescents, ect)

5. For those programs that target women

   a. what is the coverage / utilization(who is it reaching and how many)

   b. What type of training has been provided for the frontline workers for these programs?

   Probe: duration of training, training manuals and who delivers; frequency of retraining

   c. What are the biggest constraints to the delivery and uptake of these programs?

Probe: supply side / resource constraints including economic and logistical access, supplies,

Probe: demand-side/ utilization constraints including socio-cultural factors, knowledge, literacy

6. What other maternal health activities are ongoing in Taraba State?
7. How are these being delivered?
8. What is the coverage / uptake of these activities by the target population
9. What type of training has been provided for the frontline workers for these programs?

   Probe: duration of training, training manuals and who delivers; frequency of retraining

10. What are the biggest constraints to the delivery and uptake of these programs?

Probe: supply side / resource constraints including economic and logistical access, supplies,

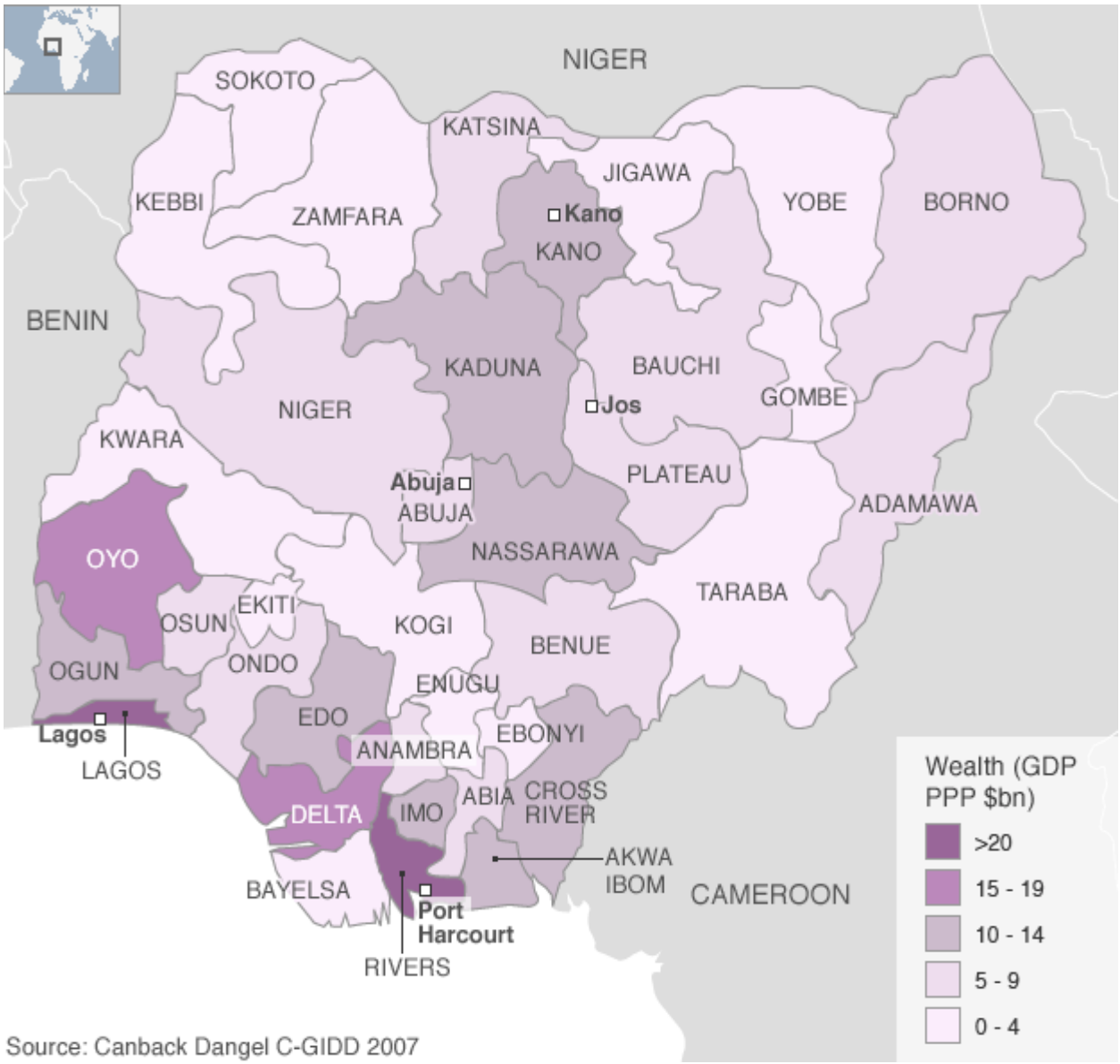
Probe: demand-side/ utilization constraints including socio-cultural factors, knowledge, literacy

11. After this discussion – what would you consider to be the biggest gaps for maternal nutrition in Taraba state? How do you think these gaps could be addressed?

    Probe: At the policy level? At the facility level? Probe: At the community level?

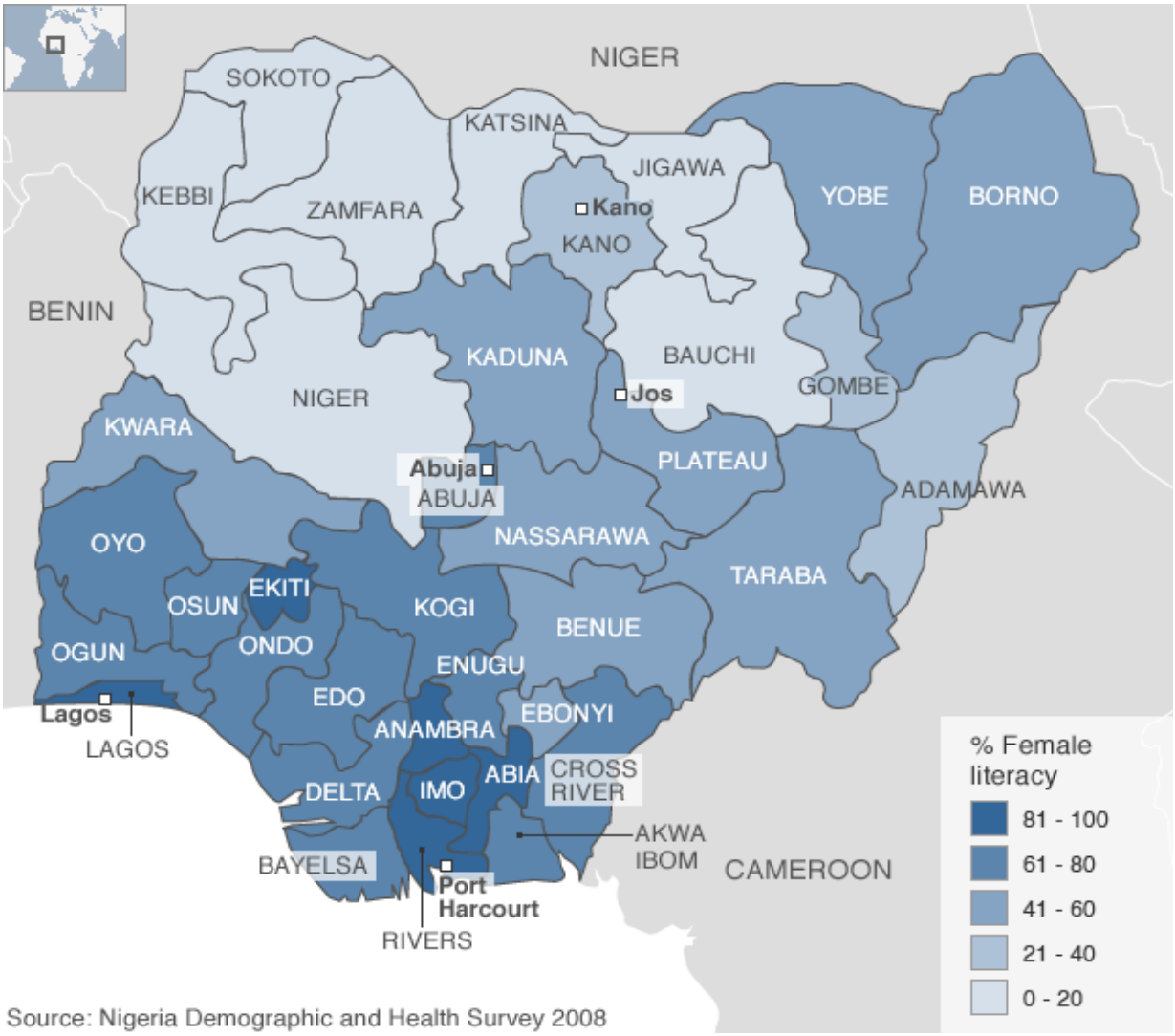
Thank you

Appendix 2: Map showing the GDP (PPP per capita) of the states in Nigeria



(Accessed from http://www.bbc.co.uk/news/world-africa-13010946 on April 9, 2011).

Appendix 3: Map showing the female literacy levels of women 15-49 years of age by state in Nigeria.



(Accessed from http://www.bbc.co.uk/news/world-africa-13010946 on April 9, 2011

Appendix 4: Ongoing nutrition activities and their target groups.

Nutrition activity	Pregnant women	Non-pregnant women	Barriers to implementation	Barriers to access
8. Provision of routine antenatal drugs.	Yes These drugs are provided at no cost or subsidized rates and they include fersolate, folic acid, antimalarials and multivitamins.	No	a. Lack of funding b. Lack of partnership c. Prioritization d. Bureaucracy e. Lack of Personnel	a. Lack of funds b. Unavailability of the programs c. Lack of awareness d. Misconceptions e. Lack of cooperation from husbands f. Long distance e. Ignorance/ illiteracy
9. Provision of vitamin A	No	Yes: Postpartum women	a. Lack of funding b. Bureaucracy	A .Lack of funds b. Unavailability of the programs c. Lack of awareness
10. Provision of ITNs	Yes	Yes	A .Lack of funding B .Lack of access/ bad terrains	A .Lack of funds b. Unavailability of the programs c. Lack of awareness d. Misconceptions
11. Nutrition education and counseling, Creation of awareness on the benefits of balanced diets, food fortification, dietary diversification, food demonstration and malaria control.	Yes	Yes	a. Lack of funding b. Lack of partnership Lack of kitchen and office space for demonstration	a. Lack of funds b. Unavailability of the programs c. Lack of awareness d. Food taboos e. Ignorance/ illiteracy
12. Immunization	Yes Sometimes provided free to pregnant women.	No		a.Ignorance/ illiteracy b. Misconceptions c. Lack of funds

Nutrition activity	Pregnant women	Non-pregnant women	Barriers to implementation	Barriers to access
13. Creation of awareness on the need to come to the clinic/ hospitals	Yes	Yes		a.Cultural and religious restrictions
14. Food fortification	Yes	Yes		a.Lack of funds
8a. Family planning awareness 8b. Family planning services	Yes No	Yes Yes		a. Lack of funds b. Unavailability of the programs c. Lack of awareness d. Misconceptions e. Lack of cooperation from husbands f. Long distance e. Ignorance/ illiteracy