



NSSP Workshop Report # 21

CONCEPT NOTE WORKSHOP ON SOCIAL CAPITAL, AGRICULTURAL PRODUCTIVITY AND FOOD SECURITY

(Prepared by Grace Adeogun and James Sackey)

Nigeria Strategy Support Program
Workshop Report

May 31, 2011

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THE NIGERIA STRATEGY SUPPORT PROGRAM

WORKSHOP REPORTS

ABOUT NSSP

The Nigeria Strategy Support Program (NSSP) of the International Food Policy Research Institute (IFPRI) in collaboration with the Federal Ministry of Agriculture and Rural Development (FMARD) has an initiative to strengthen evidence-based policymaking in Nigeria in the areas of rural and agricultural development. This initiative, facilitated by USAID, supports the implementation of Nigeria's national development plans by strengthening agricultural-sector policies and strategies through:

- Enhanced knowledge, information, data, and tools for the analysis, design, and implementation of pro-poor, gender-sensitive, and environmentally sustainable agricultural and rural development policies and strategies in Nigeria;
- Strengthened capacity for government agencies, research institutions, and other stakeholders to carry out and use applied research that directly informs agricultural and rural policies and strategies; and
- Improved communication linkages and consultations between policymakers, policy analysts, and policy beneficiaries on agricultural and rural development policy issues.

ABOUT THESE WORKSHOP REPORTS

The Nigeria Strategy Support Program (NSSP) Workshop Reports provide a record of the presentations delivered during workshops and key comments from the audience and group discussions. The comments from the participants do not necessarily reflect the views of IFPRI.

CONCEPT NOTE WORKSHOP ON SOCIAL CAPITAL, AGRICULTURAL PRODUCTIVITY AND FOOD SECURITY¹

Abuja, Nigeria
May 31, 2011

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Introduction

In line with the Federal Ministry of Agriculture and Rural Development's (FMARD's) vision of ensuring access, availability and affordability of high-quality food to all Nigerians, the International Food Policy Research Institute (IFPRI) is undertaking research on agricultural mechanization in Nigeria under the Feed the Future (FtF) initiative of the United States Agency for International Development (USAID). The FtF program expects to support the governments and technical agencies of some 20 "focus countries," including Bangladesh, Cambodia, Nepal and Nigeria in programs focused on:

1. Production technology: R&D to enhance the availability of high- and optimum-yielding germplasm (seeds, varieties, and breeds), improved production practices, pest control, and soil and water management;
2. irrigation and water-use improvement, such as rehabilitation and construction of new structures and wells;
3. post-harvest technology, including primary processing, handling, drying, and storage; and
4. agricultural extension (training and communication) on the above topics.

The workshop outlined the proposed research activities to be undertaken by IFPRI during 2011 through 2013 on the topic "Social Capital, Agricultural Productivity and Food Security in Nigeria." The main objectives included:

- Sharing information on the proposed actionable research on irrigation and mechanization; and
- Soliciting constructive criticism and inputs from participants on the proposed research.

The workshop was attended by 43 participants consisting of government officials, agricultural economists, agricultural engineers, and research engineers from various universities and research institutes (Appendix C). It was held on Thursday, March 31, 2011 at the Albinus Hall of Immaculate Suites & Apartments, Wuse II, Abuja.

Opening Ceremony

The workshop was opened by the Program Leader of the Nssp, Dr. James Sackey. He noted that the issue of social capital and its effect on agricultural productivity and food security is important enough to warrant a systematic review. At the same time, he noted that the concepts inherent in the theme are very complex and therefore it is necessary to initiate discussion ahead of defining research questions. He thus encouraged participants to offer honest and constructive feedback throughout the day. He expressed gratitude to all participants for making themselves available for the workshop, noting that IFPRI could not achieve its objective if they had not agreed to be part of the program. Mr. Howard Batson, the representative for USAID, also gave a welcome remark. He noted his pleasure at being part of the workshop and said he was looking forward to an interesting deliberation since the concept of social capital is understood by various researchers from different perspectives. In his welcome address, Dr. Sunday Uhiene, representing the FMARD, highlighted the importance of the work being undertaken by the government in ensuring adequate food for all Nigerians in the nearest future and felt the outcome of the research on social capital may throw some light on the thrust for eliminating food insecurity in Nigeria. He also encouraged those present to participate actively in the workshop as the achievements of the goals of the workshop were highly dependent on their inputs.

Summary of Presentations

The main presentation (by power-point) was given by Dr.Saweda Liverpool-Tasie on the overview of Social Capital, Agricultural Productivity and Food Security in Nigeria (A summary is reproduced in Appendix D). The presentation touched on: (i) existing research on food security in Nigeria; (ii) social capital/social networks and social capital research in Nigeria; (iii) links between social capital, food security and agricultural productivity; (iv) the proposed research questions; and (v) the proposed methodology.

Dr. Liverpool-Tasie defined four distinct aspects of food security as follows: physical food availability is determined by production and trade arrangements through markets; food access is determined by income and prices; food quality determines nutritional content and diversity; and stability of physical and economic access is required to complete the concept. Applying these concepts to Nigeria, two sets of questions emerge:

- How are the various dimensions of food security (availability, access, quality, and stability) distributed across various agro-ecological zones and farming systems in Nigeria?
 - Using food security scale
 - Using anthropometric measures
 - Using diet-diversity measure
- How has food security changed over time in various states and what are the underlying factors?

She discussed in detail the concept of social capital, noting that household level social capital implies capital within the boundaries of a household. This could include, among others, moral support (e.g. child care or caring for the sick), financial support, or labor augmenting that households enjoy by virtue of their intra-household relationships. This type of social capital could have positive or negative effects and will be largely explored in the study via household structure. Household structure can be defined along lines such as extended versus nuclear, polygamous versus monogamous, and male- versus female-headed. She then proceeded to highlight the key research question (discussed in the next section) and the methodologies to be employed in the proposed study.

Dr. Liverpool-Tasie's presentation was followed by short, elaborative comments on (a) Nigeria's food security strategies by Professor Victor Chude (Agriculture and Food Security Program of FMARD); (b) the status of food security research in Nigeria by Dr. Obayelu Elijah (University of Agriculture, Abeokuta); (c) the status of social capital research in Nigeria by Dr. O. A. Oni; and (d) innovations and Fadama III by Dr. Bukar Tijani (FMARD).

Small Group Discussion (Food Security and Agricultural Productivity)

Three groups were formed to consider the following research questions. The results of the exercise are presented below.

Group 1, Question 1:

- (a) What are some key factors that ensure that increased farmer income or output translates into better food security and nutrition in Nigeria? That is, what are those factors within

households and communities that prevent increased production from reducing food security which need to be addressed?

Response:

- Poor nutritional information
- Capacity to add value and reduce post harvest losses
- Large household size (dependency ratio)
- Household composition
- Persons or individual handling household income (male or female)
- Information availability within household on income earned
- Inefficient distribution of food
- Diversity of income sources (seasonality of farm income)

(b) How can we capture intra-household differences in the experience of food security? (That is, the difference between food security of parents and children in the same household?)

Response:

- Dietary intake analysis
- Anthropometric
- Participatory analysis
- eclectic

Group 1, Question 2: Refer to table below

(a) Is the HFIAS security scale captured in the table below appropriate for the case of Nigeria? If not, how is it inadequate and what other issues need to be incorporated or what issues should be taken out?

(b) Apart from being appropriately worded. Should such questions be asked to only household heads? Should it be asked to household heads and spouses? Only female adults? Also, should it be asked to adults and children separately? Provide reasons for your preference?

Response: The group was unable to arrive at a consensus on both questions, but individual rankings for HFIAS were provided.

FOOD INSECURITY				
HOUSEHOLD FOOD INSECURITY ACCESS SCALE (HFIAS) <i>(READ the list and categories and circle only ONE answer for each question)</i>				
Household Food Insecurity Access Scale (HFIAS) for last four weeks	No (Answer to question is <i>None</i>)	Rarely (once or	Sometimes (3 to 10	Often (more than
a. In the past 7 days, did you worry that your household would not have	1	1 or 2 2	3-4 3	5 and above 4

b. In the past four weeks were you or any household member not able to eat the kinds of foods you preferred because	1	2	3	4
c. In the past four weeks did you or any household member have to eat a limited variety of foods due to a lack of	1	2	3	4
d. In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain	1	2	3	4
e. In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because	1	2	3	4
f. In the past four weeks, did you or any household member have to eat fewer meals in a day because there was not	1	2	3	4
g. In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	1	2	3	4
h. In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough	1	2	3	4
i. In the past four weeks, did you or any household member go a whole day and night without eating anything	1	2	3	4
j. In the past week, did you or any household member eat a cooked meal	1	2	3	4

Group 2, Question 1:

- (a) Does food security manifest itself differently across Nigeria? If yes, how and what are the reasons for this (e.g. farming systems, cultural practices, etc.)?

Response:

The food security definition should take into account food availability, accessibility, quality, utilization and stability. It must also be safe to eat.

Components of food security	Response	Reasons adduced
Availability	Yes	<ul style="list-style-type: none"> Agro-ecological zone determines the type of food grown. Cultural practices – some society's places restrictions on the type

		<p>of food consumed e.g. some culture forbid eating live-stocks therefore members of the community do not keep it.</p> <ul style="list-style-type: none"> Family structure: the composition of the household in terms of the ratio of male to female children, their ages, health status can determine labor availability. Farming system practiced.
Accessibility	Yes	<ul style="list-style-type: none"> Economic access <ul style="list-style-type: none"> - Income disparity - Price disparity - Access to credit Physical access <ul style="list-style-type: none"> - Access to infrastructures - Road accessibility - Market availability Social access <ul style="list-style-type: none"> - social capital
Utilization	Yes	<ul style="list-style-type: none"> Awareness (literacy) due to exposure Educational level Value Addition: this depends on the taste and preference of the consumer e.g. pondo yam Quality and safety
Stability	Yes	<ul style="list-style-type: none"> Climate change Policy environment Shocks (flood, drought, disease outbreak etc)

(b) The HDDS table is geared to capture the diversity and stability of a household's diet. What strengths and weaknesses do you see in the questions listed in terms of their ability to properly capture food security in Nigeria? Are there additional questions that should be included? Are some of these questions irrelevant?

Response:

Strengths:

- Food diversity is well-captured.

Weaknesses:

- Categories A – I on the table are too broad, they should be disaggregated into food items to easily address the issue of diversity.
- A dummy variable (*1 and 0*) should be used on the table instead of 1 and 2 for easy interpretation of economic implication
- With reference to Research Issue 1, the length of hours (24hrs) will not capture the dynamics of food change over-time. It was therefore suggested that the questions should be repeated thrice for 3 different days of the week in a 3 week period for the same households during the period of the survey
- Condiments should be separated from tea and coffee

- A beverage such as cocoa drink was omitted from the table. Beverages should be included separately and the differentiation between alcoholic and non-alcoholic should be made since they perform different function.

The 'Yes' and 'No' response on the MAHP table gives the same weight to harvesting period, when there is abundant food, and off-season, when there is food depletion. To differentiate between these two periods, the expected response should therefore be graduated into:

- 1 - inadequate
- 2 - adequate
- 3 - very adequate

Also, a disaggregating based on food group should be applied to the table to capture the availability of each food group at a particular period of the year.

Group 2, Question 2:

How can the nutritional aspect of food security be better captured in this study and what are the actual requirements for gathering this kind of data in a survey? This is a search for best practices from other research practitioners.

Response:

Nutritional aspect of food security can be captured by use of 24hours diet recall. Also, the template produced by IITA for 2001/03 National Nutrition survey can be used to gather data needed.

Group 3, Question 1:

The literature distinguishes intra household social capital from extra household capital as discussed in the concept note. How appropriate and valid is this delineation in Nigeria and why? Please discuss this question by listing the different mechanisms through which various forms of social capital are expected to affect farmer welfare and agricultural output in Nigeria.

Response:

The group agreed that the delineation provided in the concept note in terms of intra- and extra household social capital is appropriate and relevant when situated within the Nigerian context. The reason is that people have multiple identities (i.e. people belong to many groups and social networks that constitute social capital).

Mechanism through which social capital affects farmers' welfare and agricultural output:

Intra household social capital: The following mechanisms were identified by the group

- 1) Access to productive resources
- 2) Distribution of resources among members of the household will affect individual member social capital

- 3) Family structure: Monogamy and polygamy
- 4) Composition of the household- in terms of age structure and gender
- 5) Health status of the household members may affect the quality of labour input

Extra household social capital: The following mechanisms were identified by the group

- 1) Access to finance
- 2) Social insurance
- 3) Influence- friendship with certain people open doors
- 4) Innovation adoption
- 5) Labor augmentation
- 6) Risk sharing
- 7) Access to credit

Group 3, Question 2:

A major challenge in identifying social capital effects on household welfare (food security or agricultural production) is endogeneity caused by reversed causality. While social capital can enable households to enjoy higher levels of consumption/income due to opportunities for increased agricultural productivity or access to nonfarm activities, it is also possible that individuals with higher incomes will tend to have higher social capital (more connections or links in society or more likely to be members of groups and active participants therein etc).

What are some factors in Nigeria that would make an individual be more likely to have more (or better) links/connections in society but which would not directly (on their own) affect the outcome variables like income or welfare? The goal here is to identify an appropriate instrument for social capital for empirical analysis.

Response:

The following were identified by the group as factors which would make individuals likely to have better links/connections in the society, but which would not directly affect the outcome variable:

- 1) Residency – the number of years individual has spent in a place
- 2) Level of trust people has in individual
- 3) Philanthropy
- 4) Relaxation and leisure
- 5) Membership of religious group
- 6) Membership of ethnic group
- 7) Skill

Appendix A: Invitation Letter

Invitation to the Nigeria Strategy Support Program (NSSP) Concept Paper Workshop on Social Capital/Food Security and Agricultural Productivity; March 31, 2011

The International Food Policy Research Institute (IFPRI) in collaboration with the Federal Ministry of Agriculture and Rural Development (FMARD) continues to work towards strengthening evidence based policymaking, generating policy research to fill key knowledge gaps and improving national capacity for policy analysis in Nigeria.

As part of activities under IFPRI's *Feed-the-Future (FtF)* initiative supported by USAID, we are pleased to invite you to a Concept Paper Workshop on **Thursday 31st March 2011** at **the Albinus Hall of Immaculate Suites & Apartments. Plot 110 Adetokunbo Ademola Crescent, Wuse II. Abuja**

The main Objectives of the forum are to:

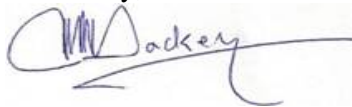
- Share Information on our proposed actionable research on Social Capital/Food Security and Agricultural Productivity
- Get constructive criticism and input from participants on the proposed research

IFPRI will cover your participation at the workshop. Please find attached the document detailing all logistics arrangement including accommodation, travel reimbursements etc.

We look forward to your active participation at the workshop. Please note that the workshop starts at **9am** prompt.

Please confirm your participation on or before Friday 25th March, 2011 by contacting Grace Adeogun on G.Adeogun@cgiar.org with a cc to Sheu Salau s.salau@cgiar.org or call 08033078613.

Yours truly,



Dr James Sackey
Program Leader, IFPRI- Abuja

Appendix B: Workshop Agenda

9:00- 9:30	Registration of Participants
9:30- 10:00	Welcome Remarks <i>James Sackey, Program Leader, IFPRI</i> <i>Mrs Fatima Bamidele or Rep., Permanent Secretary, FMARD</i> <i>Mr. Howard Batson, USAID</i>
10:00- 11:00	Overview of the proposed research on “Social capital, agricultural productivity and food security in Nigeria” <i>Dr. Saweda Liverpool-Tasie, Postdoctoral Fellow, IFPRI</i>
11:00- 11:45	Social capital, agricultural productivity and food security in Nigeria <i>Nigeria’s Food security strategies: Prof. Chude Victor Agriculture and Food Security Program (15 mins)</i> <i>Food security research: Dr. Obayelu Elijah University of Agriculture, Abeokuta</i> <i>Social Capital research: Dr. O. A. Oni</i> <i>Innovations and Fadama 3: Dr. Bukar Tijani</i>
11:45- 12:15	Discussions
12:15-12:30	Tea Break
12:30-1:10	First Small Group Discussions: Food Security and agricultural productivity <i>Group 1 Leader: Dr. Akinleye Oludiran University of Lagos</i> <i>Group 2 Leader: Dr. Bussie Maziya-Dixon, Nutritionist, IITA Ibadan</i>
1:10- 1:30	Plenary: Reporting, Questions, Answers and Observations
1:30- 2:00	Lunch
2:15- 2:55	Second Small Group Discussion: Social Capital, agric productivity & food security <i>Group 1 Leader: Dr. Ogundele Olorunfemi – Research Fellow, NISER</i> <i>Group 2 Leader: Mrs. Adepoju Ladoke - Akintola University of Technology Ogbomoso</i>
2:55- 3:15	Plenary: Reporting, Questions, Answers and Observations
3:15- 3:20	Vote of Thanks <i>Grace Adeogun, International Food Policy Research Institute</i>

Appendix C: Participants List

Participants for Concept Note Workshop on Social Capital, Agricultural Productivity and Food Security			
SN	Name	Institution	Department
1	C.E.E. Okojie	University of Benin	Dept of econs & statistics
2	A.A. Adepoju	LAUTECH. Ogbomoso	Dept of Agric econs
3	M.A. Badmus	NIHORT	Economics
4	O.A. Omotesho	University of Ilorin	Dept of Agric Econs & Farm mgt.
5	M.O. Adewunmi	University of Ilorin	Dept of Agric Econs & Farm mgt.
6	Muhammad-Lawal Abdulazeez	University of Ilorin	Dept of Agric Econs & Farm mgt.
7	Sulaiman Yusuf	University of Ibadan	Dept of Agric econs
8	Femi Ogundele	NISER	
9	Dayo Phillip	Nasarawa State University, Keffi	Dept of Agric econs
10	Omobowale Oni	University of Ibadan	Dept of Agric econs
11	Wale Awotide	Olabisi Onabanjo University	Dept of Agric econs
12	Bola Okuneye	University of Agriculture. Abeokuta	Dept of Agric econs
13	Noble Nweze	University of Nigeria. Nsukka	Dept of Agric Econs
14	Oludiran Akinleye	University of Lagos	Dept of Economics
15	Obayelu Elijah	University of Agriculture. Abeokuta	Dept of Agric econs
16	Mafimisebi T.E.	Federal University of Tech. Akure	Dept of Agric econs
17	Abu Godwin	University of Agric. Makurdi	Dept of Agric econs
18	Okwu O.J.	University of Agric. Makurdi	Dept of Agric ext
19	Balogun O.L.	University of Ibadan	
20	Bolarin Omonona	University of Ibadan	Dept. of Agric. Economics
21	Dontsop Paul	Africa Rice	Impact assessment Unit
22	Tunde Oguntona	University of Agriculture. Abeokuta	Nutrition & Dietetics
23	Tahirou Abdoulaye	IITA	Economic Unit
24	Paul Amaza	University of Maiduguri	Dept of Agric econs
25	Ashagidigbi Waheed	University of Ibadan	Dept of Agric econs

SN	Name	Institution	Department
26	Howard Batson	USAID	
27	Mohamed Elwadie	USAID	
28	Fatima Adamu	Usman Danfodio University. Sokoto	Dept of Sociology
29	Ajah Julius	University of Abuja	Dept of Agric Econs & Ext.
30	K.M. Baba	Federal University of Technology. Minna	Dept of Agric Econs & Ext.
31	V.O. Chude	NPFS	
32	C.N. Eze	NPFS	
33	Chinwe Izuogu	Micronutrient	
34	Sunday Uhiene	FMARD	PPAS/CAADP
35	Hannatu Gawu	NPFS	Nutrition & Health
36	Luke McCarthy	IFPRI	
37	Joseph Fayeye	University of Ilorin	Dept. of Sociology
38	Gideon Negedu	Tak Continental Ltd.	
39	Grace Adeogun	IFPRI	
40	Saweda Liverpool	IFPRI	
41	Sheu Salau	IFPRI	
42	Charles Gamde	IFPRI	
43	James Sackey	IFPRI	

Appendix D: Presentation by Dr. Saweda Liverpool-Tasie

Social capital, agricultural productivity and food security in Nigeria

“Whereas economic capital is in peoples bank accounts and human capital is inside their heads (*bodies*), social capital inheres in the structure of their relationships. To possess social capital, a person must be related to others, and it is those others, not himself, who are the actual source of his or her advantage.’- (Portes 1998).

Background:

Food insecurity and associated coping strategies are increasingly being studied in Africa. There has however been very little emphasis on the role that social capital plays within this domain to exacerbate, or mitigate extreme poverty and food insecurity. There is limited information about how the various interrelationships between individuals and households affect their food security status. This could be via the roles these relationships play in facilitating household ability to produce food and/or generate income; the role these relationships play when various shocks are experienced as well as the roles various interrelationships play in bridging the gaps caused by various input and output market failures. Furthermore, very little is known about how the shifts in family structure within many African countries (towards a more western model) have affected the agricultural production and food insecurity status of families across the continent.

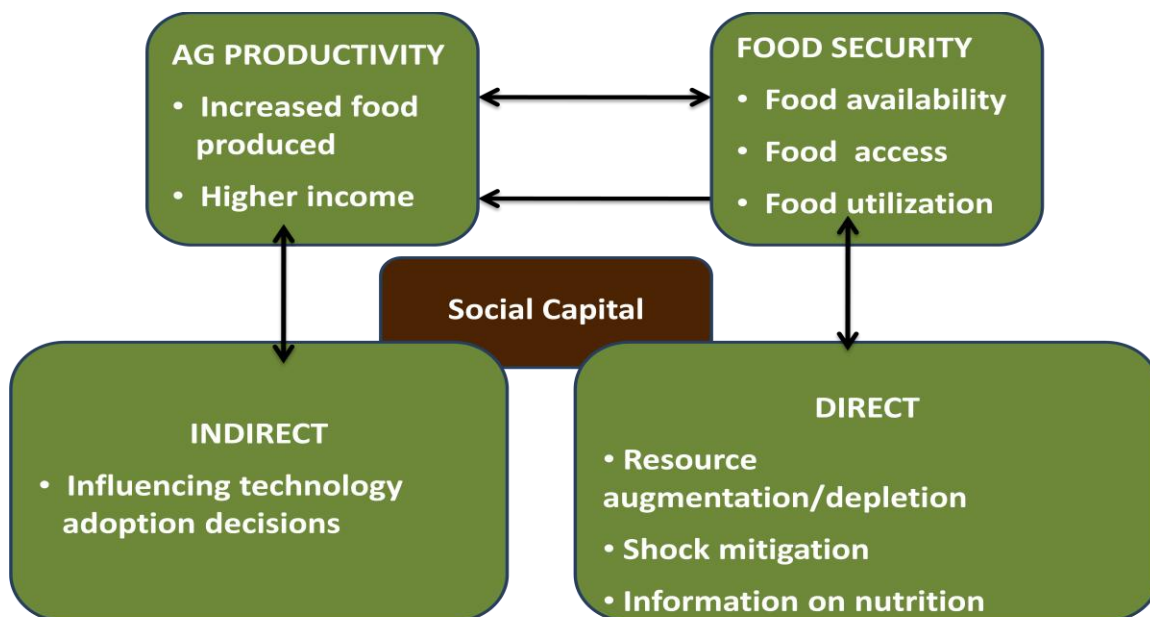
Several studies have been conducted on food security in Nigeria. Most focus on the prevalence of the phenomenon and its determinants in one or two states with very few (e.g Obayelu, 2010) recognizing the multifaceted nature of food security and attempting to capture this complexity. Social relationships play an instrumental role in the daily lives of all humans, particularly in developing countries where these relationships bridge the gaps caused by numerous market and institutional failures. However, studies on social capital and household welfare or poverty in Nigeria are very few. Like for food security, some like Yusuf (2008) looked at social capital and welfare in one state while Omonona et al (2005) looked at social capital and poverty across 6 states. However, we have found no empirical work carried out on the links between social capital and food security. Similarly, there are no research studies that explicitly explore the role that social capital plays in stimulating agricultural productivity in rural Nigeria.

Consequently this research will focus on understanding the interrelationships between social capital, agricultural productivity and food insecurity issues in Nigeria. It will look at the effect of family structure and other forms of social capital on household production and consumption decisions. It will also look at the intra household allocation of food. It will explore the roles that social networks (a particular manifestation of social capital) play in the rural economy ; mostly as it relates to agricultural productivity enhancement, nutritional information dissemination and rural non-farm income opportunities. Within every facet of the analysis, the study will explore possible exclusionary mechanisms to participation in or benefitting from certain kinds of social capital in Nigeria; particularly along wealth and gender lines. These are important considerations

for policy recommendations geared towards leveraging the potential benefits from social capital in the bid to alleviate poverty in Nigeria.

The research proposes to explore the prevalence and importance of various types of social capital across Nigeria, with particular focus on the roles it plays in promoting agricultural productivity and food security. It also plans to study the prevalence of food security (captured in a manner that reflects its multidimensional nature) across space and by farming systems. The research will start by building a conceptual framework to identify the mechanisms through which various forms of social capital are expected to affect farmer conditions and behaviors. This conceptual framework will provide the basis for the setting up of various testable hypotheses which will consequently be tested empirically with primary data collected across Nigeria in a manner that reflects the nation's diversity in terms of agro ecology, farming systems and poverty.

Conceptual Framework:



Various concepts:

Social capital:

Though viewed and used differently across and within the sociology and economic literature, the consensus moves towards viewing social capital as the ability of actors to secure benefits by virtue of membership in social networks or other social structures (Portes, 1998). Like other forms of capital, social capital can be understood as an asset. This stems from the fact that social capital like physical or natural capital have the potential to yield streams of benefit that make future productive processes more efficient, more effective, more innovative, or simply expanded. Unlike physical or human capital, however, social capital is not embodied in one person; rather it

is in the relations a person has with other individuals and with the socioeconomic institutions within which that individual operates (Coleman 1999). Social networks are thus an expression of social capital.

The first contemporary definition of social capital was provided by Pierre Bourdieu, who defined the concept as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition (Bourdieu 1985, p. 248; 1980).

Other contributions to the modern concept of social capital include the economist Glen Loury who, in his study of racial inequality focused on the need for a multidimensional consideration of the factors that provided opportunities for escaping poverty. He highlighted that besides merit, the material resources that a child had access to from his family as well as the kinds of network whose resources he/she could access were necessary for upward mobility. (Loury 1977, p. 176). Scholars like Burt (1992) considered social capital as friends, colleagues, and more general contacts through whom one receives opportunities to use their financial and human capital (Burt 1992, p. 9).

Thus, on one hand, social capital refers to the relationship between different family members that determines how individual members can take advantage of whatever financial and human capital other family members possess (Astone and McLanahan, 1991) – intra family social capital. This includes moral support (e.g. child care or caring for the sick), financial support, labor augmenting etc that households enjoy by virtue of their intra household relationships. This type of social capital could have positive and negative effects and will be largely explored in this study via household structure; largely distinguishing between extended versus nuclear households and polygamous versus monogamous households.²

Expected mechanisms for intra family social capital:

One example is the effect of the presence of extended family members on household welfare or productivity. The presence of extended family members may exacerbate or ameliorate food insecurity or poverty by either creating more mouths to feed, or increasing the resource base of the household.

A similar analysis could be offered for households that are polygamous or monogamous. With regards to polygamy, it can logically be assumed that this family structure creates a larger pool of individuals that can provide support for each other and provide financial, social and labor support when needed. For farming households, the availability of labor could be crucial for food production and household welfare. On the other hand, there is some evidence of separate spousal budgets in many polygamous homes (Caldwell, Orubuloye and Caldwell, 1992; Desai, 1992). In these arrangements, individual wives have primary responsibility for taking care of their children, and there is no resource sharing across co-wives. In the event that the husband is not able to supplement the needs of each co-wife, then individual and household outcomes from such

² We will explore the differential effect of various family structures on certain household production and consumption outcomes

household structures could differ significantly with very different food security implications. This could occur via differential production and consumption decisions.

Another example would be the differential experience of male and female headed households. The gender of the household head (and in some cases the gender of different adult household members) also has implications on production decisions and consumption outcomes given their differential access to various resources; financial, information, input and output markets etc. Similarly, male and female household members are likely to have different types, levels and intensity of relationships than their male counterparts which might affect their ability to benefit from the potential gains of various relationships or which might render them more vulnerable to the vices of the same.

Social capital also refers to the benefits that households have access to by virtue of the relationships of its individual members within the larger community - extra family social capital³.

Expected mechanisms for Extra family social capital:

Extra family social capital is quite complex. Some forms may serve as a transmission mechanism from resources into outcomes through their effects on preferences, constraints and expectations, thereby influencing economic decisions⁴. Social capital can also help to mitigate shocks to income and food supplies in times of crises. Generally, the severity of the shock to income and food supplies and what coping strategies families may choose to utilize to cope with the shock may depend primarily on the strength of the social networks they have access to. In times of financial hardship, food shortages or severe illnesses, various studies in Africa have shown that the social capital that families have access to make a big difference in their abilities to surmount these adverse events (Mtika, 2001; Kaschula, 2008; Muga & Onyango-Ouma, 2009). Consequently, social capital has the capacity to impact the consumption possibilities of households.

Generally, as proffered by Uphoff, extra family social capital can be understood most usefully by distinguishing two interrelated categories of phenomena: (a) structural, and (b) cognitive.

The *structural* category is associated with various forms of social organization, particularly roles, rules, precedents and procedures as well as a wide variety of networks that contribute to cooperation, and specifically to mutually beneficial collective action (MBCA), which is the stream of benefits that results from social capital. The *cognitive* category on the other hand derives from mental processes and resulting ideas, reinforced by culture and ideology, specifically norms, values, attitudes, and beliefs that contribute to cooperative behavior and MBCA.

³ This distinction between social capital inherent within the household versus that largely focus on relationships beyond the household is important for our study as while the former has as its basis the nature of the relationship among family members within the same household which can affect individual as well as household outcomes, the latter deals largely with the effect of individual member relationships with institutions and individuals beyond the household and their effect on household outcomes.

⁴ They often substitute for market and institutional failures, indicating their importance in developing country contexts, where such failures abound

The elements of social organization in the structural form of social capital facilitate MBCA, in particular by lowering transaction costs, having already established patterns of interaction that make productive outcomes from cooperation more predictable and beneficial. This is where the effect of social networks on farmer's probability of adopting productivity enhancing technologies or improved nutrition information lies. Reducing the risk and costs of adopting these technologies or practices through improved access to financial or marketing resources or whether via social learning and information dissemination are key mechanisms through which structural social capital facilitates increased agricultural productivity and improved nutritional outcomes.

In cognitive social capital, individuals are predisposed toward MBCA, in part because of widely shared ideas that make cooperation more likely. Norms, values, attitudes, and beliefs that constitute cognitive social capital are ones that rationalize cooperative behavior and make it respectable. This form of social capital is common within religious and ethnic groups as well as within different associations of like individuals.

While it is possible in the abstract to have structural forms of social capital without cognitive ones, and vice versa, in practice, it is unlikely and difficult for either to persist without the other. These two domains of social capital are intrinsically connected because although networks together with roles, rules, precedents, and procedures can have observable lives of their own, ultimately they all come from cognitive processes.

Agricultural productivity:

Agriculture remains a crucial sector, employing over 70 percent of the Nigerian labor force and has the potential vehicle for diversifying the Nigerian economy and enabling economic development. However, Nigeria's agricultural productivity remains generally low. This is largely the result of a production structure dominated by subsistence and semi-subsistence smallholders (cultivating no more than 3 ha); poor access and limited willingness to adopt production-enhancing inputs (improved seeds, fertilizer and irrigation); dependence on labour-intensive, low input-output technologies; high levels of post-harvest losses due to poor handling, inadequate development of agro-processing as well as poor rural infrastructure (particularly rural roads and storage facilities); and limited access to marketing opportunities (Sackey, 2010).

Agricultural productivity relates the ratio of agricultural outputs to agricultural inputs. Output is usually measured as the market value of final output. Productivity is assessed by comparing this output value to various types of inputs such as land or labor. Comparing output to an individual input is called a partial measure of productivity. Partial measures of productivity are often challenging to understand because it is often hard to identify the factors that cause such a measure to change. Consequently agricultural productivity is also often measured by what is termed total factor productivity (TFP). This approach to agricultural productivity measurement compares an index of agricultural inputs to an index of outputs and changes in TFP are usually attributed to technological improvements. Another commonly used measure of agricultural productivity is efficiency where farmer production relative to the ideal performance provides information on the farmers agricultural production efficiency.

Food Security:

Food security is a multidimensional/flexible concept that has evolved over time and location. Concern about food security originated in the mid-1970s due to the international food problems that emerged as part of a larger global economic crisis. The initial food security focus was macroeconomic in nature and was mainly concerned with assuring the availability and price stability of foodstuffs at the international and national levels. Consequently, food insecurity was traditionally measured through aggregate food supplies, and food availability, accessibility and adequacy (Busch & Lacy, 1984; FAO, 2003a; FAO, 2003b). In addition to economic factors, the preponderance of drought and famine in some developing regions of the world led to further rethinking and refinement of the concept. Amartya Sen (1981), in a seminal publication, helped redefine the food security discussion in the development literature. His contribution extended the concept beyond mere availability of food in the macro sense to considerations of the constraints on individual access to food (Webb, et al. 2006).

Definitions of food security have evolved over time. At the 1974 world food summit, food security was defined as: “availability at all times of adequate world food supplies of basic foodstuff to sustain a steady expansion of food consumption and to offset fluctuations in production and prices” (UN, 1975). By 2001, the definition of food security evolved to: “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2002). This definition implies that food insecurity reflects uncertain access to enough and appropriate foods (Barrett, 2002).

Thus, irrespective of how food security is defined, it is generally agreed that four distinct variables are central to the attainment of food security – namely food availability, access, utilization and stability of access.

Food availability: Food insecurity research before Sen (1981) focused on food availability in a macro sense. The goal was to ensure that sufficient quantities of appropriate kinds of food were available from domestic sources, imports, or donor sources (FAO, 2003b; Webb et al. 2006). The focus of both domestic and international policy was on removing constraints to food availability by concentrating on agricultural policy, trade policy, marketing and transportation systems, the role of natural disasters, and the price effects of economic policies. Eventually, the realization grew that availability was necessary, but not sufficient to promote food security. The concept of food security was expanded to include access.

Food access: The debate on food security shifted from macro supply issues to focus on the ability of households to obtain food in the market place or from other sources (Webb et al. 2006). Having access to food includes having physical access to a place where food is available and economic access – a socially legitimate claim to food (Staatz, Boughton & Donovan, forthcoming). It is important to note that in many developing countries, the availability and access dimensions of food insecurity are strongly linked. While availability reflects the supply side of food insecurity, access reflects effective demand. The two concepts are linked by food prices (Staatz, Boughton & Donovan, forthcoming).

Food utilization/consumption: This third aspect of food security speaks to the proper usage of food and includes processing, storage, consumption and digestion. How the food is prepared (which affects nutritional value) and the health of the individuals consuming the food (which affects the ability to absorb and use nutrients) affects food security (Staatz, Boughton & Donovan, forthcoming). Providing nutrition education and family management skills is thus another aspect of the process of ensuring food security.

Stability of access: The fourth aspect of food security addresses the stability of household access to nutritious food. Fear of instability in access to nutritious foods in itself can have significant effect on the production and consumption decisions of households which eventually directly affect the food security experience and outcomes (nutritional and health) and is thus an important consideration.

It is generally accepted that addressing issues of food security in Africa (and the world at large) necessitates a proper identification of the food insecure, the reasons for their insecurity and the monitoring changes in food security over time with explanations for the changes. In many developing countries, particularly in sub Saharan Africa, food insecurity is commonly measured through consumption and anthropometric measures. It is also often used interchangeably with similar concepts such as poverty, malnutrition, and hunger (Coates et al. 2006). However, many of the food security categorizations based on these concepts do not sufficiently capture the multidimensionality of the concept.

The US has a widely tested and accepted module for gathering information and measuring and monitoring food security in the nation. While limited, some interesting work has been done on developing food security scale exists across the developing world. Nord et al(2002) explore the internal validity of certain food security measures in Bangladesh, India and Uganda. Their results imply that the US modules appropriately contextualized for different African countries could provide a good basis for building an appropriate food security module. Following this work, the USAID, Food and Nutrition technical assistance (FANTA) has developed the Household Food Insecurity Access Scale (HFIAS) which is an adaptation of the approach used to estimate the prevalence of food insecurity in the United States (U.S.) annually. The method is based on the idea that the experience of food insecurity (access) causes predictable reactions and responses that can be captured and quantified through a survey and summarized in a scale (Coates et al, 2007).

The major areas explored to capture the experience of food security in the HFIAS are:

1. Feelings of uncertainty or anxiety over food (situation, resources, or supply);
2. Perceptions that food is of insufficient quantity (for adults and children);
3. Perceptions that food is of insufficient quality (includes aspects of dietary diversity, nutritional adequacy, preference);
4. Reported reductions of food intake (for adults and children);
5. Reported consequences of reduced food intake (for adults and children); and
6. Feelings of shame for resorting to socially unacceptable means to obtain food resources

This scale captures the four dimensions of food security discussed above. In addition to the access dimension of food insecurity, measures to capture other dimensions like dietary diversity, stability of access as well as utilization will also be included.

As mentioned above, there is not a unified concept of food security in sub Saharan Africa and Nigeria, more specifically. Some studies focus on just limited access to food measured by income and/or poverty, while others focus on availability of food measured by caloric intake. Some others focus more on the outcome of food insecurity such as low weights and extreme hunger, while some care about dietary diversity, coping mechanisms or strategies with a few more recent studies also considering household perception about their food security (Coates et al. 2006; Meade, Rosen & Shapouri, 2007; Barrett, 2002). Thus, as one would expect, this diverse concept of food security is accompanied by similarly diverse food security measures which do not satisfactorily capture the multiple dimensions of food insecurity.

What appears to be missing in most studies of food security in sub Saharan Africa is the link between household's access to various food types and quantities, their use of these and their perceptions about the sustainability of this access and how this affects various household decisions about food intake and economic activities, which consequently produce these outcomes of malnutrition, hunger etc that are often studied. This link could be provided with a valid and tested food security module appropriately adjusted for national differences and included in nationally representative household surveys from which food security scales could be developed across Nigeria and Africa.

This study will build on measures developed by the USAID-funded Food and Nutrition Technical Assistance Project (FANTA). FANTA has developed a Household Food Insecurity Access Scale (HFIAS) based on food insecurity measures developed in the United States in an attempt to develop a tool for measuring food insecurity that is comparable across countries. They have identified three key domains of food insecurity access namely:

- Anxiety and uncertainty about household food access; (*access and stability*)
- Insufficient quality; (*food availability, access and use*)
- Insufficient food intake and its physical consequences. (*food use*)

Several studies in different sites in Africa⁵ have utilized these measures and they have been found to be valid and reliable. In this study, these measures will be adapted to the Nigerian context. In addition, some anthropometric data will be collected on children in selected households in order to measure the utilization aspect of food insecurity.

Inter linkages between social capital, agricultural productivity and food security

The role of agricultural productivity in any discussion on food security is multiple-fold. Higher agricultural productivity translates into larger food supplies and possibly lower food prices for

⁵ For example, the African Food Security Urban Network (AFSUN) utilized these measures in their study of food insecurity in eleven cities in the Southern African region. See <http://www.afsun.org/> for details.

consumers or lower food expenditures for rural farm households. Furthermore, higher agricultural productivity means higher incomes, and thus improved ability to purchase food and other basic necessities. This is particularly important for numerous rural households who are not only more likely to be food insecure but who earn majority of their livelihoods through agricultural production.

It is necessary to understand how agricultural productivity does/can actually reduce food insecurity in sub-Saharan Africa. Specifically, what are the actual mechanisms through which agricultural productivity translates into food security and can we distinguish between these mechanisms and those through which food insecurity actually limits agricultural productivity and growth? Within the realm of increasing agricultural productivity, what is the appropriate pathway out of food insecurity and how does that vary by household initial conditions e.g. wealth and poverty status? If indeed these mechanisms and or pathways vary across households based on initial conditions, then how should strategies to increase food security via increased agricultural productivity differ for such households and how does the expected differential effect of this increased agricultural production on food security affect our evaluation of programs geared to increase food security.

Social capital has direct linkages to food security and indirect links through its effect on agricultural productivity. With regards to food security, social capital has the power to mitigate shocks to income and food supplies in times of crises. In this wise, social capital has the capacity to impact the consumption possibilities of individuals within the household. With regards to agricultural productivity, social networks may affect agricultural productivity by influencing farming practices and the household's propensity to adopt newer technologies. In addition, the presence of extended family members in the household may exacerbate or ameliorate food insecurity by either creating more mouths to feed, or increasing the resource base of the household. Some of these relationships may also differ by the family structure of the household, its wealth.

Consequently these interlinkages will be the focus of this study; to provide a better understanding of how agricultural productivity leads to increased food security in Nigeria and the role social capital plays in this process. This information will be very useful in providing a more comprehensive overview of food security and social capital in Nigeria. The approach of the study hopes to provide a more comprehensive and comparable assessment of the food security situation in Nigeria across the various dimensions of the concept as well as the multiple layers of diversity that exists in Nigeria such as agro ecology and farming systems, culture and political delineation. It also intends to provide a better understanding of the diverse forms that social capital manifests itself in the Nigerian society with some insight into the actual mechanisms via which it affects household decisions and outcomes. This information will be very useful for policy makers and development practitioners interested in leveraging on the potential benefits from these social relationships where possible and limiting the negative effects as well.

Proposed research issues:

1. How are the various dimensions of food security (availability, access and quality) distributed across various agro ecological zones and farming systems in Nigeria?
 - Using food security scale
 - Using anthropometric measures
 - Using diet diversity measure
2. What are the current prevailing family structures in Nigeria? How has that changed over the years and how does that vary across various socio economic groups and cultural context?
3. Basic description of the different types of social capital variables across the country and across different socioeconomic characteristics

Proposed empirical research questions:

1. How (if at all) has the changing family structure in Nigeria affected agricultural productivity and food security?
 - Test the implication of the resource augmenting or depleting role of household social capital on agricultural productivity and food security
 2. What kinds of social networks are most important in rural Nigeria and why?
 - Are the networks for insurance and risk sharing the same for information dissemination?
 - What are the roles of various social networks in farmer adoption of new technologies and agricultural practices?
 - What are the roles of various social networks in disseminating information about health and nutrition
 - Do the benefits of social networks cut across socioeconomic levels and gender?
 3. How does agricultural productivity in rural Nigeria contribute to household food security?
 - What are the key factors that ensure that increased farmer income or output translates in to better food security and nutrition?
- Gender issues and education
 - Alternative sources of livelihood
 - Remoteness/access to various markets and institutions
 - Social capital