111 EAAE-IAAE Seminar 'Small Farms: decline or persistence'

University of Kent, Canterbury, UK

26th-27th June 2009

GENDER IMPACTS OF SMALL FARMERS' COMMERCIALIZATION OF GINGER (*Zingiber officinale Rosc.)* ENTERPRISE IN NIGERIA

G.N. Asumugha[1], P.M. Kormawa[2] and N.C. de Haan[2].

1. National Root Crops Research Institute, Umudike, PMB 7006, Umuahia, Nigeria.
2. International Institute of Tropical Agriculture, PMB 5320, Ibadan, Nigeria

E-mail: gnasumugha@yahoo.com , g.asumugha@nrcri.org

ABSTRACT

This study addressed the issue of gender and agricultural commercialization among smallholders in Nigeria with ginger as a case study. It focused on the relative or absolute roles, gains and losses by men and women farmers as a result of commercializing small ginger farm. Ginger is a crop grown mainly for cash in Nigeria. Nigerian ginger is known to produce very high quality essential oils mainly oleoresin and gingerol used in confectionery and pharmaceutical industries. Men take decision mostly on ginger production while ginger marketing is more of the women's job. Women income is devoted to food and children care while men take care of education of the children. There is increased income and improved health facilities to members of the household. There are, however, increases in workload and responsibility for men for major decisions while women play major role in decision during maintenance of ginger field.

Keywords: Nigerian Ginger, Commercialization, Gender impacts.

1. INTRODUCTION

In Nigeria, farmers operate in a subsistence economy with use of local technology. As a result, there was little or no growth in marketed surpluses. In an advance form, there was the production of small surpluses for the local market. This entails a little change of the economic behavior of the farmer, his social relationships and local knowledge with little commercialization. The farmers who have embraced commercialization for income generation most often and consciously maintain subsistence home production.
Commercialization of traditional agriculture is the resulting local growth in marketed surpluses of crops due to technical progress (Von Braun et al, 1989). According to FAO's definition (Kunze, personal communication 2002), commercialization is the share of agricultural produce that is marketed. Warren (2002) further defined commercialization as the process through which an increased amount of small farm resources (land, labor, etc.) is transferred from self-consumption production to market-oriented production.

In Nigeria, households are known to carry out agricultural production on fragmented plots controlled by the household head or by members of the household, with different access to complementary inputs. This has significant socio-cultural and economic implications, including changes in patterns of gender relationships within household and the community in general. The shift has different costs and benefits for men and women farmers according to local context-related factors. Technological change and commercialization in agriculture depend mostly on the policy focus and extension system of the government. Commercialization stimulates agricultural growth, improves employment opportunities and expands food supply, and consequently contribute to the alleviation of poverty.

Ginger (*Zingiber officinale Rosc.*) is a spice and root crop grown as cash crop in Nigeria, mostly grown in the southern part of Kaduna State (Northern Nigeria) for export. In the world market, the current major five exporting countries have been China, Nigeria, India, Jamaica, and Brazil (Asumugha ,2002). Nigerian ginger is known to produce the highest quality essential oils mainly oleoresin and gingerol. These are valued for their aroma and pungency. Ginger cultivation in Nigeria dates back to 1927 when it was believed to have been introduced from southeast Asia. Among the spices (pepper, ginger, onions, and chilies), it is the only one that is grown on a commercial scale for export. Ginger is mainly exported in split-dried form, while exports of fresh ginger are negligible.

1.1 Research Objectives

The broad objective of this study is to assess gender impacts of small farmers in traditional ginger production and commercialization in Nigeria. The study had **five specific objectives:**
i) To describe the diversity of small farmers' commercialization of the ginger enterprise within selected communities.
ii) To identify and describe how farmers from the communities perceive the impacts (cost and benefits) of this commercialization on intra-household and community gender relationships.
iii) To identify and describe shift of resources within the households as a consequences of ginger commercialization.
iv) To identify barriers to participation in ginger commercialization activities as perceived by women and men.
v) To identify ways in which change agents have been/could better support the process of ginger commercialization to ensure more equitable benefits for both men an women.

2. METHODOLOGY

In carrying out the study, the approach and methodology of Immink et al. (1995) on gender analysis was adopted:

i. synthesizing existing studies, documents, and other relevant materials;
ii. quick reconnaissance of the study sites or regions by the research team;
iii. use of semi structured interviews with key informants, such as farmers' representatives, personnel of local technical agencies, representatives of processing and marketing firms, and key policy decision makers.

The methodology combined RRA- type gender analyses, participant observation, review of secondary findings, community analysis techniques as well as statistical and econometric tools.

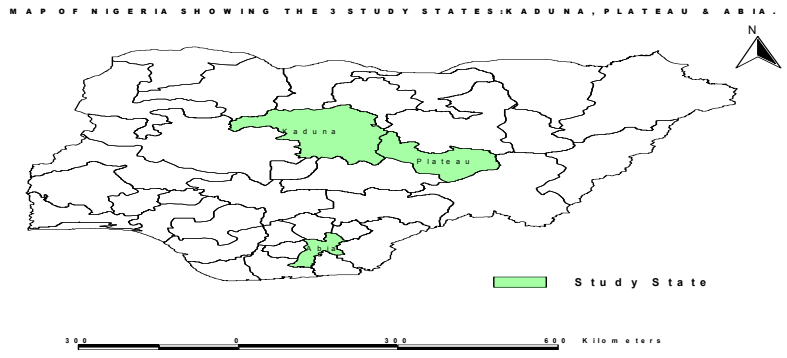
2.1 Data and Collection

2.1.1 The Setting

The southern guinea savannah zone of Nigeria was purposively selected for the fact that:

a. It is a major ginger producing area where both Muslims and Christians inhabit,
b. The implementation of the small framers commercialization (SFC) projects is going by change agents (National and International Organizations), and this allowed use of available information, knowledge and experience.

As a result, the study was conducted in Kaduna State in northern Nigeria (Fig.1).



2.1.2 The Procedure

An initial reconnaissance survey was made to verify whether the selected enterprise conforms to the study objectives. Haven ascertained this, the study was conducted in three stages; viz.

Change Agent Survey

A change agent survey was first conducted**.** This provided background information about the commercialization process and the communities. Meetings where held with project staff of organizations and agencies responsible for gender and ginger development. These include project coordinators, community development officer, NGOs, companies, development associations and professionals. Detailed descriptions were collected from these sources mainly through interview using open-ended questionnaires.

Community Assessment

The PRA technique was used for group discussions and individual discussions with households/farmers from resource categories. The results helped in developing hypotheses and individual household survey instruments. Also preliminary classification and selection of

households for the individual household studies were effected at this period. These assessments enabled the researchers to validate secondary information regarding commercialization activities in the communities.

Individual Household Survey

Individual household interviews were conducted with farmers engaged in the ginger enterprise with the aim of understanding the perspectives of households. Households were selected from among those participating in commercialization activities. In selecting the households, we ensured that there's a spread regarding the social life, wealth status, and sex of the household head.

Sampling and Sample Size

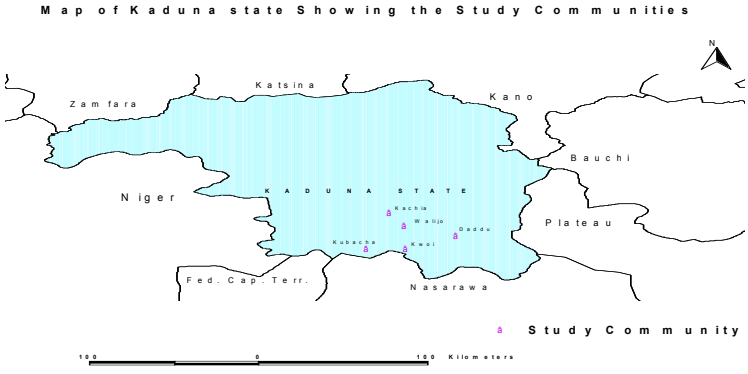
For this case study, 5 communities were studied namely Kachia, Kwoi, Dadu (Tsakiya), Walijo, and Kubacha (Dogonkurmi). A community generally consists of villages. These villages have their own individual chiefs who are responsible to the community head in the running of the villages. For the individual household surveys, a random sampling technique was used to select the households. The communities selected were the ones where SFC projects have been carried out and located within a radius of 10km from the project area.

A sample size of 100 households was interviewed. Three standardized structured and coded questionnaires were designed for the household study to ensure consistency of data collection from different households. The questionnaires were pre-tested in one of the sample villages prior to the survey for modifications. The contents of the questionnaires were translated into local languages by assistants. Interviews were conducted in household compounds and/or in the farms depending on the availability of respondents.

3. RESULTS OF THE GINGER CASE STUDY

3.1 Study Area: Traditionally, ginger is grown in the Guinea savanna regions. The average temperature is about 32^0 C while the rainfall is about 1000mm distributed for about 5-6months. This area lies between longitude 8 degrees east and latitude 10 degrees north at an elevation of 759m (Fig 2).

The communities that produce ginger mostly are Kachia, Kubacha, Kuda, Kwoi and Sabon Gida. Others are Sabon Serki, Walijo, Fadan Kagoma, Unguanrumi, and Zonkwa. The vegetation consists mostly of shrubs and scattered trees. The household structure is extended family. In recent times, however, a shift is tending towards the nuclear family system as a result of economic pressure. Christians predominate in this area and constitute more than 80 % of the small farmers. The Moslems constitute an insignificant number of less than 20 %.



In southern Kaduna, a local woman gives birth on the average to 6 children during her reproductive life. The number may be higher, in view of the household's dependence on family labor for ginger cultivation. The small farmers in this area cultivate from 0.75 to 3 ha land. Out of this, about 20% specifically belong to the woman. In most instances, however, the farm is jointly owned in the household.

3.2 Employment Profile of the Household

3.2.1 Gender Pattern of Income generation in the ginger household;

Ginger has been a traditional crop in this area and profitable, and as such a quick source of family income. However non-farm earnings are gradually becoming important, especially for the youths and the educated. The table here shows that women of working age generate about 24% of household income from non-farm trading as against 15% generated by men. Wage labor in industries as well as teaching account for 9% and 17% of income respectively to the women as against 5% and 17% by the men. The men also derive off-farm income from jobs such as artisan, building, and driving. These constitute 42%.

Table 1 Gender Pattern of income generation in the ginger household

Non-farm income generation activities	Percentage of income generated by	
	Men	**Women**
Trade	15.22	23.91
Wage labor in industry	4.65	9.30
Teaching	17.07	17.07
*Others	42.30	9.00

*Others include artisan, building, driving, and craft.

Table 2.Gender Pattern of Income distribution in the ginger household

Household member	% income for household	% of household member
Men	1 – 20	41.06
	21 – 40	13.69
	> 40	45.25
Women	1 – 20	56.35
	21 – 40	19.16
	> 40	23.40
Children	1 – 20	90.70
	21 – 40	8.14
	> 40	1.16

Table 2 showed that only about 45% of the men in the ginger household contribute more than 40% of their income to the maintenance of the household welfare. The rest 55% contribute less than this percentage of their income. On the other hand, about 23% of the women contribute more than 40% of their income for household upkeep. This share of income is devoted to food, and children care while the men take care of education of the children. The women also allocate certain percentage of their own income to personal needs. The children contribute minimally (less than 2%) of income generated on farm since they don't own ginger farm of their own but work under their parents, and as such their income is subsumed.

3.2.2 On-farm labor profile: Table 3 shows the results of our analysis of the on farm labor profile by the different gender and age members of the household.
Results showed that the working age (male and female) form the bulk of farm labor in the ginger household, with the children and elderly participating to some extent in the ginger production activities. Thus, the household depends primarily on its labor. As the household progresses into the stage of commercialization of ginger, it mobilizes its members for farm work at peak seasons to make optimal use of the period.

Table 3 On farm labor profile

On – farm	% distribution	
	Female	Male
Children (< 14)	20.59	33.33
Working age	87.25	90.20
Elderly (> 60)	13.73	26.47

3.3.1 Determinants of Household commercialization of Ginger
As the households progress into the stage of commercialization of ginger, several factors were adduced to have contributed to the households' decisions to develop the ginger enterprise. Table 4 shows such factors and the parameter estimates for the analysis.
The relationships between commercialization of ginger and technical assistance is positive and significant at the one percent level of probability.

Table 4. Determinants of households' decisions to develop the ginger enterprise (ginger commercialization)

Estimated regression model

Explanatory Variable	Coefficient		T-ratio
Prob>t-ratio			
Constant	.4606	2.359	.0205
The need for food security	.8374	1.229	.2224
The need to earn more income	.1578	1.090	.2787
The need to acquire additional assets	.6648	0.737	.4628
To enhance children education	.2791	0.258	.7969
New social needs	.1375	1.948*	.0547
Need for education of household	-.7920	-0.650	.5176
Increase in value of ginger	.3771	0.466	.6425
A quick source of family income	.2390	1.718*	.0893
Privately owned land tenure	-.1746	1.554	.1237
Availability of credit source	.8741	.0390	.9691
Technical assistance	.2001	2.824***	.0059
Infrastructural assistance	-.1028	-.906	.3673

Note: 1 Probability = P(/T/>t*) where t* is the reported value of t-ratio
2 *** Significant at 1 %; * significant at 10%.

Farmers have started getting more interested in commercial ginger production mostly as a result of technical assistance from the Kaduna State ADP(KADP). KADP also tried to link up

ginger farmers in groups to Banks for loans. To the average household in the ginger growing area, ginger is a quick source of family income. The gestation period of 7-8 months in the field makes income readily available for household livelihood. Also there are new social needs for the household.

3.3.2 Economic and social benefits and costs of commercialization to the different gender and age members of ginger Household.

Results of our analyses (Table 5) show that there is increased income for the household. The head of the household keeps the bulk of the accruing benefits and allocates these to other members of the household according to requirements. The boys and girls benefit as funding of their education is assured. The men also have better access to technology and inputs than the women. However the decision-making power of the woman is enhanced. She can now be more self-reliant rather than depend wholly on the husband.

Table 5 Economic and social benefits types of commercialization to the different gender and age members of the ginger household

	Men	Boys	Women	Girls
Increased income	1	3	2	3
Education opportunity	4	1	4	2
Asset acquisition	1	3	2	3
Improved housing facilities	1	3	2	3
Access to new technology	1	3	2	3
Input and machinery	1	3	2	3
Enhanced decision making power	1	3	2	3
Higher self-reliance	1	3	2	3
Access to health facility	1	1	1	1
Socialization	1	3	2	3
Fulfilled household responsibility	1	3	2	3

Ranking: 1-4; 1 = mostly affected, 2 = moderately affected, 3 = less affected, 4 = not affected

There are improved health facilities to all the members of the household.

On the cost side, there are increases in workload and responsibility for the men as major decisions rest on them as the heads of the households (Table 6) The women take a major role in decision during the maintenance of the ginger field as well as feeding of labor when hired. There is higher dependency on the part of the boys and girls on their parents.

Table 6 Economic and social cost types of commercialization to the different gender and age members of the household.

	Men	Boys	Women	Girls
Higher dependency	3	1	2	2
Increased Workload	1	3	2	3
Decreased decision-making power	1	3	2	3
Decrease in leisure time	1	3	2	3

Ranking:1-4;1 = mostly affected, 2 = moderately affected, 3 = less affected, 4 = not affected.

ACKNOWLEDGEMENT

This study is a part of IITA/FAO Gender Impacts of Small Farmers Commercialization Project in Nigeria, funded by FAO Agricultural Management, Marketing and Rural Finance Service (AGSP) Gender And Development Service (SDWW) and executed by IITA, Ibadan, Nigeria. Special thanks to Dagma Kunze, then FAO Regional Officer for Africa,Accra, Ghana.

REFERENCES

Asumugha, G.N. (2002): "Internal Marketing and Export of Ginger in Nigeria: Critical Issues and Suggestions for Support Mechanism" In: N. Nakatani and K. Komaki (eds), *Potential of root crops for food and industrial resources.* Proc.12th Symp. of International Society for Tropical Root Crops (ISTRC), Tsukuba, Japan, *10-16 Sept. 2000, pp 420-423*

Asumugha, G.N., J.E. Njoku and F.I. Nweke (2003) "Marketing System and Spartial Price Differentiation of Ginger in Nigeria" *African Journal of Root and Tuber Crops*, Vol. 4, No. 2, December, 2003, pp 1-7.

Doss, C.R. and M.L. Morris 2001. How does gender affect the adoption of agricultural innovations? The case of improved maize technology in Ghana. Elsevier Science B.V. (2001).

Govereh, J. and T.S Jayne. (1999). Effects of cash crop production on food crop productivity in Zimbabwe: synergies or trade-offs? MSU International Development working paper no. 74, Michigan State University, Dept. of Agricultural Economics, East Lansing, Michigan, USA. 23p.

Immink, M.D.C., R. Sibrian, J.A. Alarcon, and H. Hahn 1995. Field and analytical method for agricultural commercialization studies: Guatemala. Pages.187-216 in Prices, products and people-Analyzing agricultural markets in developing countries, edited by G.J. Scott, Lynne Rienner Publishers Inc. USA.

Kunze (2002). Dagma Kunze, personal communication, FAO Regional Officer for Africa,Accra, Ghana.

Von Braun, J. and E. Kennedy 1994. Agricultural commercialization, economic development and nutrition. Food policy statement no. 19. International Food Policy Research Institute, Washington DC, USA.

Von Braun J., D. Puetz, and P. Webb. 1989. Irrigation technology and commercialization of rice in the Gambia: effects on income and nutrition. IFPRI research report no. 75, International Food Policy Research Institute, Washington DC, USA.

Warren P. (2002). Farm Management and Production Service (AGSP). Distance survey on gender impacts of commercialization. Concept note and questionnaire design, Food and Agricultural Organisation of the United Nations.