

## **GENDER CONTRIBUTION TO HIGHLAND TEA FIELD AGRONOMIC PRACTICES IN TARABA STATE, NIGERIA**

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### **ABSTRACT**

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Tea cultivation is a labour demanding activity especially in most of the farm operations. These operations are carried out by both male and female farmers. There is no empirical data on the specific gender roles of tea agronomic practices in Nigeria. The objective of this study was to assess the contribution of gender in tea field farming activities in Taraba State during 2008. One hundred respondents were selected using multi-stage sampling technique. Out of five blocks, one block was purposively chosen and five villages were purposively selected. In the next stage, 50 male farmers and 50 female farmers from the villages with 20 from each village were randomly selected and interviewed using structured questionnaire. Results were analyzed using descriptive statistics and chi-square. About 57% of the respondents were between 30-40 years. Their highest literacy level was Islamic education (28%) meaning they attended Islamic school while (47%) had 12-18 years of farming experience. About 48% of the respondents had an annual output of 1000–1200 kg/ha value at \$266.54-398.81 at \$0.15/kg of tea. In tea field establishment practices, 39.0-78.3% of the adult males carried out land clearing, pegging, digging of planting holes, transplanting of seedlings, fertilizer application and pruning while 37.6-42.3% of the adult females were involved in weeding, harvesting/plucking as well as fertilizer application. The boys and girls participated least in field practices. Males tend to contribute more in field management practices than their female counterparts in tea production. However, females contribute actively in plucking; this is very vital in tea income generation. Over 90% of the respondents obtained information on tea practices from the Nigeria Beverages Production Company (NBPC) Limited and 98% from CRIN. Gender had a significant effect on tea field practices ( $p < 0.01$ ).

**Key words:** *highland tea cultivation, gender analysis, Taraba state*

### **INTRODUCTION**

Tea, *Camellia sinensis* (L) O. Kuntze is a perennial plant and once planted can last over 100 years of economic production when good agronomic and cultural practices are carried out (Owuor *et al.* 2008). Its cultivation is restricted to subtropical regions and mountainous areas of the tropics, where altitudes are in the range of 1200-1800m above sea level with temperature regimes of 10°C to 27°C without frost. This explains why tea can be expected to be performed well at very few locations in West Africa (Asogwa *et al.* 2007). In Nigeria, Tea is successfully produced in the Mambilla plateau of Taraba State where a substantial quantity is produced by the native out-growers. Tea thrives well only in this area because of the favorable climate.

Tea is grown in 36 countries, 21 of them in African Caribbean and Pacific Countries (ACP). Global production grew by 2.3% in 2007 to 3.735 million ton. The largest producers of tea are China, India, Kenya, Sri Lanka, Indonesia, and Turkey. China account for 30.6%; India 24.5% and Kenya 8.1% of world output (FAO, 2009). Most of the growth was due to the increase in productivity rather than an expansion in land area. Tea manufactured from *Camellia sinensis* is grouped into three main types: black tea, green tea and oolong tea.

In tea production, the qualities of the leaves are usually determined by the agro-climatic conditions, genetic properties of the bush and the agronomic practices. Besides these, the cultural practices adopted in the field influence the quality of black tea, which depends on the quality of the raw material-green leaves (The Hindu Business Line, 2000).

Tea plays a vital role in generating foreign exchange for the country and regular cash income to farmers and other stakeholders who are engaged in the production of the crop. Tea is labour intensive and provides substantial employment opportunities. Tea after water is the most heavily consumed drink in the world because of its health giving, dietetic and even therapeutic qualities (Bonheure 1990). Tea is a natural source of catechins, a type of flavonoid phytochemical. Catechins act as antioxidants in the body and are associated with reduced risks of cancer, stroke and cardiovascular diseases, as well as helping limit the effects of aging (Janoff 2007). Similarly, Janoff (2007) reported that, a compound derived from tea may help protect the body against developing HIV-associated dementia (AIDS dementia complex).

The concept of gender is not interchangeable with women. Gender refers to both men and women, and the relations between them. Similarly, sex is used as a biological difference between men and women while gender differences arose from socially constructed relationships between men and women (Quisumbing 1996). Gender issues are established in different socio-cultural contexts, which determine what is expected, allowed and valued in a woman/man and girl/boy in specific context. In utilizing a gender approach, the focus is not on individual women and men but on a system, which determines gender roles and responsibilities, access to and control over resources, and decision-making potentials. Tea cultivation is a labour demanding activity especially in most of the farm operations. These operations are carried out by both male and female farmers. There is dearth of

disaggregated data on actual gender roles and responsibility in the agricultural production in Nigeria. This is a big challenge to meaningful agricultural development planning even in most developing countries. The involvement of gender to a large extent could assist policy makers, researchers and Government in making informed decisions on tea production practices.

The main objective of the study was to evaluate the contribution of gender in tea farming activities in Taraba State. Specifically, the study sought to;

- describe tea farmers' personal characteristics;
- describe their farm attributes;
- determine the gender contribution in field agronomic practices of tea production and
- identify sources of farm information.

Ho: There is no significant association between Tea field agronomic practices and gender.

## METHODOLOGY

The study was carried out in the Mambilla Plateau in Saradauna Local Government Area of Taraba State. Mambilla has an altitude of 1,800m above sea level. The major occupation of the people is agriculture. Cash crops produced in the state include *Coffea arabica*, tea, groundnuts and maize. Crops such as rice, sorghum, millet, cassava, and yam are also produced in commercial quantity (E-Nigeria 2004 and Wikipedia 2008). It is the only area that favours the production of highland tea in Nigeria.

Multi-stage and purposive sampling procedures were used for the study. The study location is within Gembu agricultural zone. Out of five blocks, Nguroje block was purposively chosen and five villages were purposively selected, namely: Kusuku, Kakara, Mayo-kusuku, Maisamari, and Furmi. This was due to their predominance in tea production. In the next stage, 50 male farmers and 50 female farmers from the villages with 20 from each village were randomly selected and interviewed using structured questionnaire. This was done to ensure adequate representation of both gender in the analysis.

Information was collected on selected tea farmers' personal characteristics such as (age, sex, marital status, educational level, farming experience, and household size), field agronomic practices of tea production and sources of information. Data were analyzed using descriptive statistics and chi-square. The analysis was tested at 0.01 level of probability.

## RESULTS AND DISCUSSION

### *Personal characteristics of respondents*

Table 1 shows that majority of respondents (57%) were in the age bracket of 30-40 years old. The mean age was 37 years. It implies that they are still in their active years. Many of the respondents (66%) were married while 5%, 14% and 15% were single, divorced and widowed respectively. Majority of the respondents (28%) and 22% had Islamic and primary education. Table 1 also showed that 47 percent of the respondents had 12-18 years of farming experience. It indicates that they had long years in tea farming. Two third (64%) of the respondents had up to 11 household members. This could be attributed to the fact that those with large household size may likely get more people to carry out tea farming activities.

Table 1. Farmers' personal characteristics

Variables	Frequency	Percentage	Mean
<b>Age (years)</b>			37.0
< 30	19	19.0	
30-40	57	57.0	
41-51	17	17.0	
> 51	7	7.0	
<b>Sex</b>			
Male	50	50.0	
Female	50	50.0	
<b>Marital status</b>			
Married	66	66.0	
Single	5	5.0	
Widowed	15	15.0	
Divorced	14	14.0	
<b>Educational level</b>			
No formal education	14	14.0	
Primary education	22	22.0	
Secondary education	15	15.0	
Islamic education	28	28.0	
Adult education	21	21.0	
<b>Farming experience (years)</b>			14.0
5-11	33	33.0	
12-18	47	47.0	
19-25	20	20.0	
<b>Household size</b>			10.2
2-6	29	29.0	
7-11	35	35.0	
12-16	24	24.0	
17 and above	12	12.0	

Source: Field survey, 2008

In Table 2, the common farm holdings were between 0.2-2.0 ha representing 60 percent. Annual output revealed that almost half (48%) of the respondents obtained 1,000-2,000 kg/ha of tea. This translated into annual revenue ranging from \$266.54-398.81 at \$0.15/kg. This finding implies that small scale tea farmers mainly cultivate about 2 hectares. The study to some extent confirms the work of Kavoi *et al.* (2002) that the smallholder tea sub-sector has an average farm size of 0.27ha in Kenya. There is an indication of low output and revenue realized which will not enhance income of tea farmers.

Table 2. Farm attributes of respondents

Variables	Frequency	Percentage	Mean
<b>Farm size (ha)</b>			2.3090
0.2-2.0	60	60.0	
2.1-3.9	22	22.0	
4.0-5.8	14	14.0	
5.9 & above	4	4.0	
<b>Output (kg/year)</b>			2738.5
< 1000	16	16.0	
1000-2000	48	48.0	
2100-3100	13	13.0	
3200-4200	14	14.0	
4300 & above	9	9.0	
<b>Revenue (₦/year)</b>			50930.0
< 20,000	19	19.0	
20,100-40,000	27	27.0	
40,100-60,000	28	28.0	
60,100-80,000	14	14.0	
80,100 & above	12	12.0	
<b>Price of tea/kg</b>			22.0
₦22.0	100	100.0	

Source: Field survey, 2008

Table 3 reveals that majority of the respondents' (39-78.3%) adult males carried out land clearing, pegging, digging of planting holes, transplanting of seedlings, fertilizer application and pruning while 37.6-42.3% of the adult females were involved in weeding, harvesting/plucking as well as fertilizer application. The boys and girls participated least in the field activities. The adult males contributed more than their female counterparts. However, adult females contributed actively in plucking, which is labour intensive in tea production and vital in generating income. This result is similar to the findings of Ongile (1999) who investigated smallholder tea producers and reported that women have roles and obligations that are different from those of men because they have to attend to some domestic cores which could take their time from full participation in production techniques.

Table 3. Field establishment practices of Tea

Activities	Adult males	Adult females	Boys	Girls
Land clearing	50.5	42.5	0.50	6.50
Pegging	71.5	9.50	11.5	7.50
Digging of planting holes	40.5	29.6	19.6	10.3
Transplanting of seedlings	46.5	32.8	10.9	9.80
Routine weeding	17.5	42.3	13.4	26.8
Fertilizer application	39.0	38.5	5.50	17.0
Pruning	78.3	6.50	12.1	3.10
Harvesting/plucking	13.7	37.6	18.1	30.6

Source: Field survey, 2008. Figures are in percentages

Figure 1 shows that a high proportion (99%) of the respondents got information about tea practices from the Nigeria Beverages Production Company (NBPC) Limited while 98% was from Cocoa Research Institute of Nigeria (CRIN). It means that these two bodies which are located on the Mambilla appeared to be more efficient than other sources of information available to the respondents.

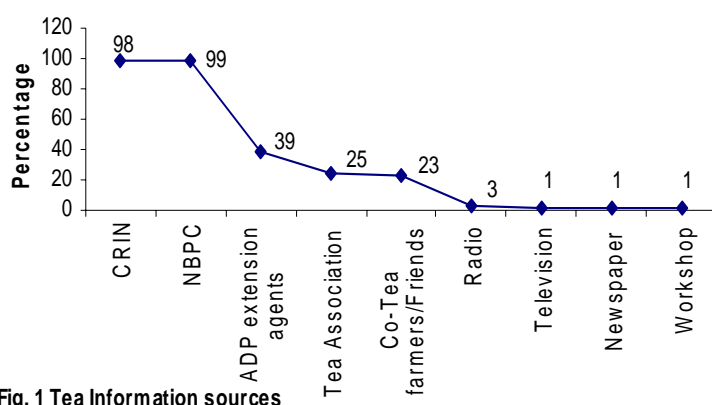


Fig. 1 Tea Information sources

Source: Field survey, 2008.

Table 4 shows that there is a significant association ( $p < 0.01$ ) between field agronomic practices of tea (land clearing, pegging, digging planting holes, transplanting seedlings, weeding, fertilizer application, pruning and plucking) and gender. This implies that gender has a very strong effect on tea field practices.

Table 4. Chi square analysis showing the association between tea field agronomic practices and gender

Variable	Df	$\chi^2$ Value	P value
Tea field agronomic practices	21	202.3	0.0001***

Source: Field survey, 2008. df Degree of freedom  $\chi^2$  is chi-square \*\*\* significant at  $p < 0.01$

## CONCLUSION

Tea field agronomic activities as practiced by respondents revealed that adult males carried out a larger part of field practices than their female counterparts. Information about tea was obtained mainly from NBPC and CRIN which seems to be more efficient than other means. There was significant association between respondents' tea field agronomic practices and gender. Gender had a strong effect on tea production. The findings from this study had clearly shown that both gender participated in different proportions of field activities with higher contribution from the adult males. The boys and girls should be encouraged by their parents and NBPC to be actively involved in highland tea production on the Mambilla.

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## **REFERENCES**

- Asogwa EU, Ndubuaku TCN, Okelana FA (2007) Entomological Research Reviews on Cocoa, Kola, Coffee, Cashew and Tea. Answers Communication Concepts, Lagos, 123-133.
- Bonheure D (1990) Tea. The Tropical Agriculturalist. Macmillan Education Ltd; London in cooperation with CTA: 91-92.
- E-Nigeria (2004) E-Nigeria-Maps-Taraba. Available on-line @[www.e-nigeria.net/taraba.htm](http://www.e-nigeria.net/taraba.htm)
- Food and Agricultural Organization (FAO) (2009) Tea executive brief. Available on-line @[www.agritrade.cta.int/en/commodities/Tea/executive\\_brief](http://www.agritrade.cta.int/en/commodities/Tea/executive_brief)
- Janoff S (2007) Your total health. Available on line @[www.teahealth.htm](http://www.teahealth.htm)
- Kavoi MM, Owuor PO, Siele DK (2002) Minimum Economic farm size A case study of the smallholder Tea sub-sector in Kenya. *Journal of Agriculture, Science and Technology*, Vol. 4(1) pp. 1-14.
- Ongile GA (1999) Gender and agricultural supply responses to Structural Adjustment Programmes: A case of smallholder tea producers in Kericho, Kenya. Research Report. No.19. Available on-line @[www.nai.uu.se/publications/download.html](http://www.nai.uu.se/publications/download.html)
- Owuor PO, Caleb OO, Kamau DM, Wanyoko JK, Ng'etich WK (2008) Long term fertilizer use on high yielding clones 15/10: Tea yields, *International Journal of Tea Science*, vol.7(1&2).
- The Hindu Business Line (2000) Agronomic practices key to tea quality, competitiveness from the hindu group of publications, Internet edition. Available on-line @[www.teapratice.htm](http://www.teapratice.htm)
- Quisumbing AR (1996) Male-female differentials in agricultural productivity, Methodological issues and empirical evidence. *World Development*, vol. 24(10) pp. 579-595.
- Wikipedia (2008) Wikipedia, the free encyclopedia. Available on-line @[www.en.wikipedia.org/wiki/Taraba State](http://www.en.wikipedia.org/wiki/Taraba_State)