



DIVERSITY IN THE USE OF LAND FOR TEA PRODUCTION AND ITS EFFECTS ON FARMERS' INCOME IN TARABA STATE, NIGERIA

*Oluyole, K.A., Daniel, M.A. and Yahaya, A.T.

Cocoa Research Institute of Nigeria, PMB 5244, Idi-Ayunre, Ibadan, Nigeria.

*Email: kayodeoluyole@yahoo.com

Received: 29th May, 2017

Accepted: 13th June 2017

Published: 14th June, 2017

ABSTRACT

Despite the limited land available for tea production on Mambilla plateau in Taraba State, there are different crops grown on the plateau competing for the limited space. This, however, reduces the extent at which tea could be grown which consequently affect the income derivable from tea production on the plateau. This study, therefore, investigates the effects of diversity in the use of land on the income of tea farmers. The study was carried out on Mambilla plateau in Taraba State. Simple random sampling technique was used to select 85 respondents from 12 communities on the plateau. A structured questionnaire was used to elicit information from the respondents and the data retrieved from the information collected were analysed using descriptive statistics as well as budgetary analysis. The result of the analysis showed that 85.88% of the respondents were of the age 60 years and below while 25.88% of the respondents had secondary school education and above. There are 13 other crops that are competing with tea for space on Mambilla plateau and 82.5% of the total space available is planted with tea. However, the average net farm income from one hectare was N151,689.44 per year showing that tea production is profitable in the study area. The study concluded that reduction in the space for tea production consequently reduces the output from tea thereby reduces the income derivable from tea production in the study area.

Keywords: Diversity, Farmers, Income, Land, Tea.

INTRODUCTION

Tea (*Camellia sinensis* (L) Kuntze) belongs to the family of theaceae. It is an evergreen bush which if kept at a low level through pruning produces more young shoots. It is these shoots that produce the tea leaves which are processed as a beverage. It is cultivated in a number of South-east Asian, African countries and in New Zealand. It is largely produced in a mono-culture system and can also be grown in mixture with other crops (annuals and tree crops) as practiced in India, where shade trees are sometimes used. Tea was introduced into the country by de Bouley from West Cameroon in 1952 (Kassbol-Smith, 1981; Adedeji, 2006). The first commercial clones were imported into the country (specifically, Mambilla plateau) in 1975 (Hainsworth, 1981). Nigeria began tea production on a commercial scale in 1982 on the Mambilla Plateau of Taraba State. This area which is located between longitude 110° E and 120°E and latitude 6.50 °N and 80°N has a scale-tropical climate being on an elevation of about 1,550m above sea level. Tea is mainly taken as a beverage which refreshes the brain and aids in eliminating pains and stress in the head, and is useful for producing soberness in people intoxicated with wine (Wellman and Chew 1980). Hudson and Tabet (2003) remarked that previously tea was taken only as a stimulant drink, but today tea plays an important role in human health by activating the central nervous system, which may aid the body's ability to burn calories and unwanted fats through thermogenic process. The phenol groups in tea are extremely active, easily able to capture and neutralize free radicals and other pro-oxidants. It has been found that (tea is over 200 times more powerful than vitamin E in neutralizing pro-oxidants and free radicals that attack lipid (oil and fats), it is also 20 times more potent than vitamin E in reducing the formation of dangerous and potentially mutagenic peroxide that form in rancid fats and lard. (Hudson and Tabet, 2003). Ody (1993) reported that tea has been consumed socially and habitually by people for so long (since 3000 BC) but apart from the stringent taste, its medicinal properties are often over looked. However, traditional healers have long believed that drinking tea is a means of prolonging life (Chopra, 2002). However, the production of this valuable crop in Taraba State is concentrated on Mambilla plateau. Apart from tea, other valuable crops that are cultivated on the plateau are coffee, groundnut, cotton, sorghum and millet. All these crops compete with tea for the space on the

plateau thereby limiting the land available for tea cultivation on the plateau (Omolaja and Esan, 2005). This consequently limits the extent to which tea could be cultivated on the plateau thereby reducing the income derivable from tea production by tea farmers on the plateau.

Therefore, it is the objective of this study to determine the proportion of the land actually used for tea cultivation as well as to determine the level of income derivable by tea farmers in the study area.

METHODOLOGY

The study was carried out on Mambilla Plateau in Sadaunna Local Government Area of Taraba State. The plateau is Nigeria's northern continuation of the Bamenda highlands of Cameroon. The Mambilla plateau has an average elevation of about 1,524 metres (5,000 ft) above sea level, making it the highest plateau in Nigeria. It measures about 96 km along its curved length; it is 40 km wide and is bounded by an [escarpment](#) that is about 900 m high in some places. The plateau covers an area of over 9,389 square kilometres. Some of its villages are situated on hills that must be at least 1,828 metres high above sea level. The Mambilla plateau constitutes one of Taraba State's largest local government areas. There are numerous towns on the plateau with populations ranging from 2,000 to 20,000 people except for Gembu, which is a sprawling ancient Mambilla city with a much higher population. Gembu contains the headquarters of new-christened "Sardauna" (formerly Mambilla) Local Government Area which is synonymous with the Mambilla Plateau. Other important towns on the plateau are Mbamnga, Warwar, Yerrmaru, Nguroje, Mayo Ndaga, Maisamari, and Hainare. There are, besides the Mambilla towns and villages, Kaka-Yamba settlements in the south-west along the Cameroonian border which are believed to be of recent emergence (Wikipedia, 2014). Random sampling technique was used to select 85 respondents from a total of 12 communities. The communities are Kusuku, Mayo Kusuku, Yerimari, Kachallasah, Galadims, Nyiwa, Kakara, Sabongari, Furmi, Lugere-Ushe, Bangoba and Nguroje. A structured questionnaire was used to collect information from the respondents and the data retrieved from the data collected were analysed using descriptive statistics such as frequencies and percentages.

RESULTS AND DISCUSSION

Table 1 showed the socio-economic characteristics of tea farmers in the study area. The result showed that 25.88% of the respondents were below 40 years of age while 60% of the total farmers were within the age bracket 40-60 years. Only 14.12% of the respondents were above 60 years of age. The result, however, showed that 85.88% of the total respondents were still in their active age (≤ 60 years). Meanwhile, the mean age of the farmers was 49.29 years. This is a good pointer to an efficient tea production in the study area since the younger the farmers, the more vigour the farmer would be able to do farm work. Table 1 also showed that majority (90.59%) of the farmers were male. This is quite obvious in as much that males are more involved in farming activities while females are more engaged in the sales of proceeds from the farm as well as general trading (Oluyole and Sanusi, 2008). Regarding the educational status, 38.82% of the total respondents had no formal education while 35.29% had a maximum of primary education. However, only 25.88% of the total respondents had secondary school education and above. The result showed that majority of the respondents (74.12%) might not be able to read and write very well. This however reflected during the administration of questionnaire to the respondents as the majority of them claimed that they could neither read nor write. The development however, is not good for an efficient production of tea as most farmers would not be able to read or interpret the result findings. The majority (94.12%) of the respondents were married. This has a great implication on the family labour supply as the spouse and children would be assisting on farm work and hence reduces the problem of labour inavailability. The result on the nature of ownership of farm showed that 91.76% of the farms were self-established while just 3.53% were inherited. This is a quite deviation from the other tree crops in which the substantial proportion of the respondents inherited their farms. Table 1 also shows the age of the farm. The Table shows that most farms (71.76%) were aged between 11 and 20 years while just 7.06% of the farms were of age 10 years and below. It could be observed that most farms are not young. In fact, some farms (21.18%) were already old (above 20 years). Meanwhile, the average age of the farms in the study area was 17 years. Virtually, all the respondents in the study area were small scale farmers. This is because 96.47% of the farmers are having just 2 hectares of farm and below. This shows that the farmers are not working in line with the principle of economies of scale and this will have a negative impact on the income derivable from tea production. Meanwhile, the mean farm size of the respondents in the study area was 1.15 hectares.

Table 1. Socio economic characteristics of the farmers

Variables	Frequency	Percentage
Age (years)		
< 40	22	25.88
40-60	51	60.00
> 60	12	14.12
Total	85	100.00
Mean	49.29	
Sex		
Male	77	90.59
Female	8	9.41
Total	85	100.00
Educational Status		
No formal education	33	38.82
Primary education	30	35.29
Secondary education	16	18.82
Tertiary education	6	7.06
Total	85	100.00
Marital Status		
Single	5	5.88
Married	80	94.12
Total	85	100.00
Nature of Ownership		
Inherited	3	3.53
Self-established	78	91.76
Purchased	10	11.76
Rented	4	4.70
Total	85	100.00
Age of farm (years)		
≤ 10	6	7.06
11-20	61	71.76
> 20	18	21.18
Total	85	100.00
Mean	16.6	
Farm Size (hectare)		
≤ 1	46	54.11
1.1-2.0	36	42.35
2.1-5.0	3	3.53
Total	85	100.00
Mean	1.15	
Mean proportion of land available for tea production	0.95	

Source: Field survey, 2014.

Table 2 shows the diversity in the use of land in the study area. The table shows that apart from tea, there were 13 other crops that are being planted in the space available for planting in the study area. The crops were maize, eucalyptus, ground nut, beans, cassava, cocoyam, vegetables, sweet potatoes, soyabean, pear, plantain sugarcane and banana. These crops however, are competing with tea for the space available in the study area. Looking at the crops very well, one would observe that the crops consist of arables as well as tree crops. This shows that these categories of crops can thrive very well in the study area. As it is shown in the Table, maize is predominantly planted by farmers as 85.88% of the total respondents planted the crop. This is quite obvious in as

much that maize can serve as a staple food and also as a source of income for the farmers. It could also be observed that most (54%) of the total respondents are planting eucalyptus. According to the responses from the respondents, the main objective of planting eucalyptus is to use the crop as wind break crop. This is quite imperative because the study area is a mountainous area and hence wind erosion is predominant there. Apart from this, eucalyptus also serves as a source of income for the farmers. Some other crops that are mostly planted in the study area are beans, groundnut, vegetables and sweet potatoes in which 49.41%, 37.65%, 27.06% and 23.53% of the farmers planted the crops respectively. Those crops that are sparingly planted in the study area are plantain, banana and sugarcane in which 5.88%, 3.53% and 1.18% of the total respondents planted. It should, however, be noted that these crops are competing with tea for the limited available land. This is reflected in the mean proportion of the land available for tea production which is just 0.95 hectare (82.6%) of the total farm size. This, however, reduces the income accrued to the farmers through tea production.

Table 2. Diversity in the use of land

Crop	Frequency	Percentage
Maize	73	85.88
Eucalyptus	54	63.53
Groundnut	32	37.65
Beans	42	49.41
Cocoyam	15	17.65
Vegetables	23	27.06
Sweet potato	20	23.53
Soyabean	10	11.76
Pear	9	10.59
Plantain	5	5.88
Sugarcane	1	1.18
Banana	3	3.53

Source: Field survey, 2014.

Table 3. Cost and Returns Analysis per hectare for tea production

S/N	Item	Amount (N)
1.	Total variable cost	11,518,956.51
2.	Variable cost/farmer	135,517.14
3.	Total fixed cost	840,826.30
4.	Fixed cost/farmer	9,892.07
5.	Total cost	12,359,783.81
6.	Total cost/farmer	145,409.21
7.	Gross revenue	25,253,385.20
8.	Gross revenue/farmer	297,098.65
9.	Gross margin	13,734,428.69
10.	Gross margin/farmer	161,581.51
11.	Net farm income	12,893,602.39
12.	Net farm income/farmer	151,689.44

Source: Field survey, 2014.

Table 3 shows the cost and returns on one hectare of tea plantation. The table shows that the average total cost incurred by a farmer on one hectare of tea plantation was N145,409.21 while the average gross revenue from one hectare per farmer was N297,098.65. However, the average net farm income from one hectare was N151,689.44 per year. Hence, tea production in the study area is highly profitable.

The study concluded that the limited available land on Mambilla plateau has been put into a diverse use. Apart from tea, there are many other crops being planted on the plateau. These crops are competing with tea thereby making the space available for planting tea to reduce. Reduction in the space for tea production consequently reduces the output from tea thereby reduces the income derivable from tea production in the study area. However the study showed that tea production in the study area is profitable.

REFERENCES

- Adedeji, AR. 2006. Thread blight disease of tea [*Camellia sinensis*(L.) O.Kuntze] caused by *Marasmius pulcher* (Berk & Br.) Petch in the South Western Nigeria. *African Scientist* Vol. 7, No. 3, Pp. 107-112.
- Chopra, D and David, S. 2002. *The Chopra centre herbal Handbook*. Three Rivers Press U.S.A. P 250–331.
- Hudson, S. and Tabet, N. 2003. Acetyl-carnitine for dementia (coherane Review) *Cochrane Database Syst* 2003;c D003158.
- Kaasboll-Smith, SA. 1965. Notes on cultivation of Arabica coffee on mambilla District. Ministry of Agriculture, Northern States, Nigeria, 21pp.
- Ody, P. 1993. July 2001 paper 4:68–89 Revealed Complete Medical herbal. Dorling Kindersley Ltd. London.
- Wellman, CN and Chew, WY. 1980. *Tree Crops of the water regions of the Tropics* London Group Ltd London P6-68.