Contribution of Men and Women to Farming Decisions in Cocoa Based Agroforestry Housholds of Ekiti State, Nigeria

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Keywords: Women- Farm-decisions- Cash crop environment- Gender- Nigeria

Summary

Women are key players in the agricultural sector of most developing countries of the world. Despite this major role, however, the men have reportedly continued to dominate farm decision making, even in areas where women are the largest providers of farm labour. This could be counter productive, because there is bound to be conflict when women, as key players, carry out farm tasks without being part of the decision process, especially when the decisions fail to recognize their other peculiar household responsibilities. Previous efforts at estimating women's role in agriculture have tended to concentrate on evaluating their labour contributions. There has been little farm-level information regarding their role in farm decision making, particularly in male dominated cash crop environment like cocoa agro-forestry households. This paper aims to bridge this information gap. The paper is based on farm level data collected in Ekiti State, southwest Nigeria, from 120 randomly selected farm units. The results of the analysis show that in general, while women were responsible for food crop production activities decisions, men were in charge of decisions regarding cocoa production activities. This fails to confirm dominance by any gender in farm decision making but rather shows a clear gender division of labour in this regards. This corroborates the observation by Enete et al. *(18) on gender division of labour regarding farm labour supply across six countries of Africa.*

Résumé

Contribution des hommes et des femmes prenant les décisions concernant la production de cacao dans la région d'Ekiti, Nigeria

Dans la majorité des pays en développement, au secteur d'agriculture, les femmes jouent un rôle principal. Malgré ce fait, les hommes continuent de dominer la prise de décisions, même quand le grand pourcentage de main-d'œuvre est fait par les femmes. Ceci peut créer un problème, car quand les femmes qui travaillent beaucoup au champ n'assistent pas au processus des décisions de l'agriculture (particulièrement quand ces décisions ne tiennent pas compte de leurs responsabilités au foyer) il y aura conflit. Auparavant, les études faites sur le rôle des femmes dans l'agriculture se concentraient sur l'évaluation de leur contribution au travail fait aux champs. Il y a peu d'informations sur leur rôle dans la prise de décisions particulièrement quand il s'agit des produits d'exportation (tels que le cacao) qui sont dominés par des hommes. Le but de cette étude est de fournir ces informations. Le travail est basé sur des informations ramassées de 120 unités de fermes sélectionnées par hasard à Ekiti, sud-ouest du Nigeria. Le résultat montre que des femmes s'occupent de la prise de décisions pour les produits consommés localement, mais les hommes prennent des décisions pour les produits d'exportation, comme le cacao. Ce fait montre qu'aucun genre ne domine l'autre au processus de décisions mais une claire distribution de pouvoir est marquée. Ce résultat s'accorde avec l'observation faite par Enete et al*. (8) sur la contribution au travail des champs, une étude faite à travers six pays africains.*

Introduction

The agro-forestry sub-sector, which is the integration of trees, food crops and/or animals in an interactive manner, is of great significance to the Nigerian agricultural sector (34). It is one of the most popular agricultural practices in southwest Nigeria. Cocoa based agro-forestry therefore refers to that in which cocoa trees for the production of cocoa beans are the dominant component of the agro-forest and usually inter-planted with other food crops. Cocoa is a high valued cash crop among farmers in the major producing areas in Nigeria. It originated from Upper Amazon in Latin America from where it spread to all parts of the world. Its cultivation started in Nigeria about 1879, when a local chief established a plantation at Bonny in eastern Nigeria. However, cultivation in western Nigeria began afterwards. By 1962, Nigeria had become the world leading producer with about 20% of the world total production (6). Cocoa was

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among Nigeria's leading source of foreign exchange before the oil boom and up till now it is still Nigeria's largest agricultural foreign trade commodity and has helped to boost the economies of the major producing states in Nigeria.
Ekiti State is one of the 14 cocoa producing states in Nigeria and contributes significantly to the national cocoa output. For instance, Ondo and Ekiti States combined account for about 53.32% of the total Nigeria cocoa output based on available data from 1976 to 2003 (23).
This study focuses on cocoa producing households; which according to Koppelman and French (26) is the level at which all farm decisions are made. Decisions have to be made when persons having limited resources have alternative course of action and therefore must make some choice (32). Farmers make decisions on a number of pre-harvest and post-harvest activities such as what to produce, input use, harvest and post-harvest issues, which according to William (42) affect production, processing, distribution, prices and costs. Farming decisions are made to maximize farm objectives subject to available material and human resources. In all farm operations planning, farm decision is always at the core of farm management functions (1).

Women are key players in the Nigerian agricultural sector, especially within rural communities. They contribute between 40 and 65% of all hours spent in agricultural production and processing and also undertake 60 to 90% of the rural agricultural product marketing, thus providing more than two thirds of the workforce in agriculture (39). However, despite the significant role played by women in agricultural production, processing and marketing in Nigeria (11, 30), available literature show that men have continued to dominate farm decision making, even in areas where women are the largest providers of farm labour (5, 8, 29). Women have more or less been relegated to playing second fiddle in farm decision making. This could be counter productive, because, there is bound to be conflict when women, as key players, carry out these farm tasks without being part of the decision process, especially when the decisions fail to recognize their other peculiar household responsibilities. Previous efforts at estimating women's role in agriculture have tended to concentrate on evaluating their labour contributions (11, 18, 20). There has been little or no farm-level information regarding their role in farm decision making, particularly in male dominated cash crop environment like cocoa agro-forestry households (7). This paper aims to bridge this information gap by comparing the level of contributions of women and men in food crop and cocoa production activities decision making.

Method of the study

The study area

This study was conducted in Ekiti State, Nigeria, which is located between longitudes 4° 45¹ and 5° 45¹ East of the Greenwich meridian and latitudes 7° 15¹ and 8° 15¹ North of the Equator. The state has a climate marked by two major seasons; the rainy season which lasts between April to October and dry season lasting from November to March. The prevailing temperature in the state ranges between 21 °C to 28 °C with high humidity. Topographically, the state is mainly an upland area, rising above 250 metres above sea level (16).
The state has a population of 2,384,212 people. Agriculture is their main occupation; providing income and employment for more than 75% of the population. The major cash crops grown in the state are cocoa, coffee, kola nut, cashew and oil palm. Arable crops grown are yam, cassava, maize, cowpea and cocoyam (15). The major livestock reared in the state include goats, poultry, sheep and pigs

Data collection

Multi-stage random sampling method was used for selecting the respondents. Two local government areas were randomly selected from each of the three agricultural zones in the state, to make a total of six local government areas for the study. From the selected local government areas, two towns were randomly selected, making twelve towns for the study. From the list of cocoa farm households, provided by the Ekiti State Agricultural Development Project (ADP), ten households were randomly selected from each of the twelve towns, making a total of 120 farm units for the study. The data, which were collected in July 2008, included type of food crops grown in the system and the level of contributions of men and women to farm activities decisions, etc.

Estimation procedure

In comparing the contributions of women and men to food crops and cocoa production activities decision, a 4 - point Likert Rating Scale (LRS) was employed. This was graded as Very High (VH)= 4, High (H)= 3, Low (L)= 2, Very low (VL)= 1. The mean score of respondents based on the 4 - point LRS was computed as 4+3+2+1= 10/4= 2.50.
Using the interval scale of 0.05, the upper limit cut-off point was determined as 2.50 + 0.05= 2.55; the lower limit as 2.50 - 0.05= 2.45. On the basis of this, mean scores below 2.45, (i.e. MS< 2.45) were ranked "Low; those between 2.45 and 2.54 were considered 'Medium' (i.e. 2.45≥ MS≤ 2.54) while mean scores that were greater than or equal to 2.55 (i.e. MS ≥ 2.55) were considered 'High'.

Results and discussion

Food crops grown within the agro-forestry

The distribution of food crops, cultivated as part of the cocoa-based agro-forestry system in the study area is presented in table 1 below.

Table 1 above shows that all the sampled farm units diversified production by having food crops integrated into their cocoa farms. This supports the views of Adegeye and Dittoh (2); Bishop and Toussaint (12) that farmers diversify their production because of the risks and uncertainties involved in farming. About 100% of the farm units integrated banana, plantain and fruits of different kinds as components of their cocoa farms; while about 98% of them integrate cocoyam as part of their cocoa farms.

The above result agrees with the submission of SCCSP (40) that cocoa plants are intercropped with plantain and cocoyam and other fruit trees in order to provide the temporary shade required by the growing cocoa plants. About 62% of the farm units integrated Chinese yam into their cocoa farms, 29% had white yam, 48% had yellow yam, 44% had different kinds of vegetables, while about 48% of them reported having walnuts[1] as part of the food crop component of their cocoa-based agro-forestry.

Contributions of women and men to food crops production activities decision making

Table 2 below presents the variations in the level of contributions to food crops production activities decision by women and their male counterparts. The table shows that the contributions of women to food crops production decisions at pre-harvest stage were high. For instance, sourcing for farm inputs, raising nursery, planting/transplanting, weeding and other management activities had LRS means ranging from 2.56-2.93. On the other hand, the contributions of men to decision making at pre-harvest stage were only high for sourcing for farm inputs, land/bed preparation and weeding with mean values ranging

Table 1
Frequency distribution of respondents by type of food crops cultivated

Food crops component status	Frequency	Percentage (%)
Cultivated food crops?	120	100
Did not cultivate food crops?	0	0
Total	120	100
Type of food crops cultivated	**Frequency***	**Percentage (%)***
White yam	35	29.2
Yellow yam	58	48.3
Cocoyam	118	98.3
Chinese yam	74	61.7
Banana and Plantain	120	100.0
Fruits	120	100.0
Vegetables	53	44.2
Walnuts	57	47.5

*There were multiple responses.
Source: Field survey, 2008.

Table 2
Result of Likert Rating Scale comparing the contributions of women and men to food crop production activities decisions

	Farming activities involving decision making	Women	Men
1	Sourcing for farm inputs	2.79*** (0.83)	2.61*** (0.97)
2	Land/bed preparation	2.49** (0.96)	2.66*** (0.93)
3	Nursery raising (e.g vegetables)	2.93*** (0.81)	2.18* (0.90)
4	Planting/transplanting	2.79*** (0.86)	2.28* (0.91)
5	Application of fertilizer/manuring	2.48** (0.74)	2.53** (0.76)
6	Weeding	2.56*** (0.87)	2.63*** (0.86)
7	Management activities	2.78*** (0.98)	2.52** (0.84)
8	Harvesting of the food crops	3.06*** (0.76)	2.39* (0.88)
9	Processing of harvested crops	3.18*** (0.68)	1.94* (0.81)
10	Marketing of food crops (fresh or processed)	3.19*** (0.64)	1.85* (0.83)
11	Storage of fresh or processed food crops	2.68*** (0.93)	2.24* (0.96)
12	Expansion of the food crop farm	2.53** (0.96)	2.49** (0.94)

Note: Figures in parentheses represent the standard deviation, * Stands for low contributions, ** Stands for medium, *** Stands for high ontributions

Source: Computed from field data, 2008.

[1] Walnuts are grown in Nigeria, particularly in the southern part. Processed ones are usually hawked and eaten in major Nigerian cities during the rainy season

from 2.61-2.66. Their (men) contributions to decision making were medium in fertilizer application and other management activities, but low in nursery raising and planting/transplanting operations.

Further, the contributions of women to food crop production decisions for farming activities ranging from harvesting through processing, storage to marketing of farm produce were high with means ranging from 2.68-3.19; whereas, the contributions of their male counterparts to these activities were low. For instance, the mean values of marketing and processing were as low as 1.85 and 1.94 respectively for the male farmers. In general, the contributions of women to decision making in these food crops production activities were generally higher than those of their male counterparts. The trend was further demonstrated as shown in figure 1. The figure represents percentage contributions of women and their male counterparts to decision making in food crop production. It shows consistently that women had higher contributions for all the activities except land preparation. Ijere (26) reported that men will only clear the bush and make ridges or heaps but other crop production activities from the planting to harvesting are left in the hands of farm women. The case of land preparation may be because under cocoa-based agro-forestry system, food crops are usually planted inside cocoa fields, so that its land preparation may also have to do with that of cocoa farm and cocoa is a male dominated crop.

This domination by women in food crops production activities decisions may be because the bulk of the activities are usually in their hands (22). FAO (20) reported that available data demonstrates the significant role played by farm women in household food production. Fresco (24) also noted that women farmers play vital roles in food production and food security, accounting for about 80% of food producers in Africa. Anyanwu and Agu (8) reported further that women are responsible for at least 70% of the staple food production in Africa and are closely responsible for household food processing, utilization and marketing. Their high level of involvement in food crop production activities could explain their high contributions to decision making in this regards. PATS (37) submitted that farm women play instrumental roles in decision making especially in relation to the farm tasks for which they are directly responsible.

Contributions of women and men to cocoa production activities decision making

Table 3 below presents the variation in the levels of contributions to farming decision in different cocoa production activities by gender. The table shows that the contributions of men to decision making at pre-harvest stage of cocoa production activities were exceedingly high, with LRS means ranging from 3.71-3.93. These activities ranged from choosing farm location through land preparation, securing planting materials, raising cocoa seedlings, transplanting, sourcing for farm inputs, weeding, to spraying of cocoa against pest and diseases. The contributions of women, on the other hand, were very low for these pre-harvest farm activities with means ranging from 1.42-2.32. The above were further demonstrated by figure 2. This is to be expected as Ojo (33) stated that men initiate the cultivation of cocoa and take responsibility for major initial farm activities while women only play supporting roles. FAO (20) reported

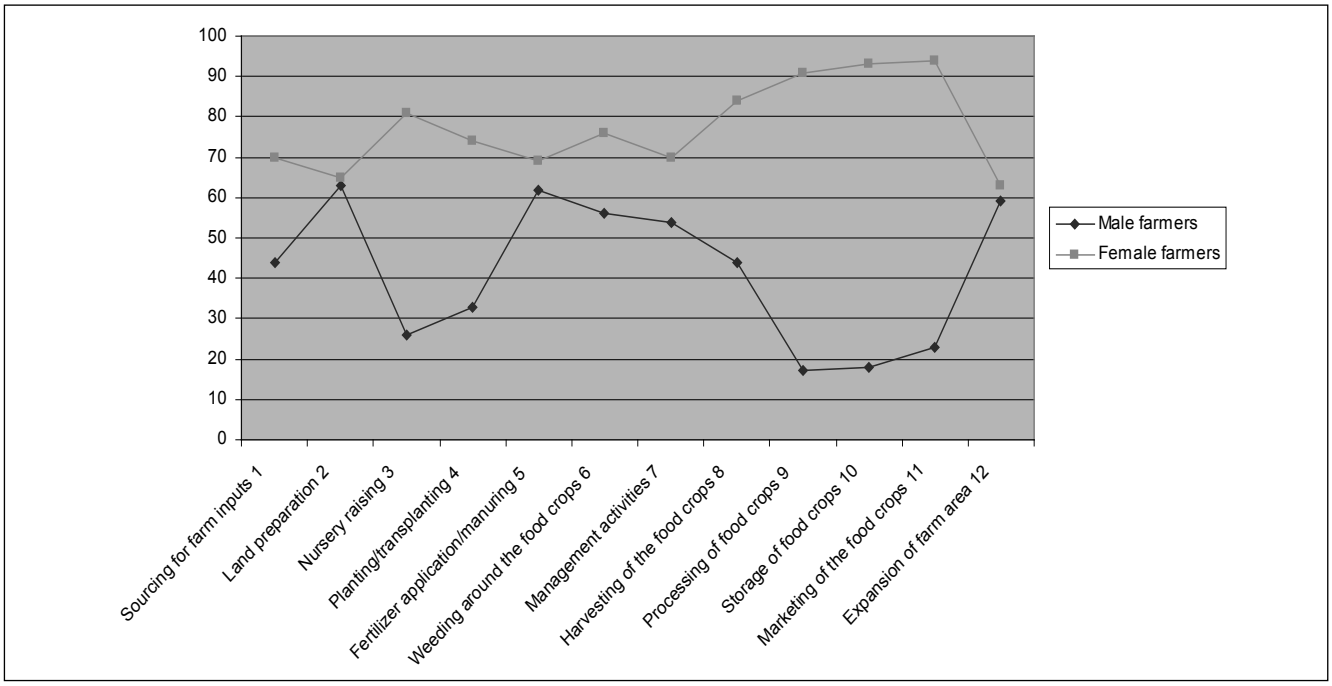

Figure 1: Percentage distribution of the contribution of women and men to farming decision making across food crop production activities.

Table 3
Result of Likert Rating Scale comparing the contributions of women and men in cocoa production activities decisions

	Farming activities involving decision making	Men	Women
1	Choosing location for farm site	3.91*** (0.29)	1.42* (0.59)
2	Bush clearing and land preparation	3.88*** (0.35)	1.47* (0.67)
3	Securing planting materials	3.88*** (0.40)	2.19* (0.88)
4	Raising cocoa seedlings in nursery	3.78*** (0.51)	2.23* (0.86)
5	Transplanting cocoa seedlings to the field	3.75*** (0.48)	2.32* (1.00)
6	Sourcing for farm inputs (chemicals, equipment)	3.78*** (0.46)	1.97* (0.81)
7	Weeding and pruning in the cocoa farm	3.71*** (0.51)	2.06* (0.89)
8	Spraying cocoa with chemicals against pest & diseases	3.93*** (0.26)	1.60* (0.67)
9	Harvesting of ripped cocoa pods	3.94*** (0.24)	2.76*** (0.88)
10	Breaking and scooping out of cocoa seeds from pods	2.26* (0.92)	3.17*** (0.85)
11	Fermentation and checking of cocoa beans	2.82*** (1.08)	2.89*** (1.06)
12	Transportation of cocoa beans from farm to the house	2.48** (0.93)	3.03*** (0.96)
13	Sun-drying and removal of bad cocoa beans	2.66*** (0.92)	2.94*** (0.90)
14	Storage of dried cocoa beans and maintenance	2.95*** (0.84)	2.52** (0.96)
15	Marketing of cocoa to the buyers	2.48** (0.74)	3.23*** (0.80)
16	Sourcing for fund for farm operations	3.49*** (0.64)	2.27* (0.92)
17	Hiring labourers and wages to be paid	3.76*** (0.47)	2.13* (0.96)
18	Expansion of household cocoa farm	3.84*** (0.37)	1.98* (0.89)

Figures in parentheses represent the standard deviation.*Stands for low contributions **Stands for medium contributions ***Stands for high contributions.

that compared to women's critical roles in food crop production and rearing of livestock, their contributions to agro-forestry is less substantial.

The contributions of men to decision making were also high in harvesting and in some post-harvest activities such as fermentation, sun-drying and storage (Table 2). In transportation and marketing of cocoa, the contributions of men were medium but it was low in breaking and scooping out of cocoa seeds from harvested pods. On the other hand, the contributions of women to decision making in many of these harvest and post-harvest activities ranging from harvesting through breaking and scooping out of cocoa seeds, fermentation, transportation, sun-drying and marketing were also high with LRS means ranging from 2.76– 3.23. The high contributions by women to harvesting of ripped cocoa pods (most often with long sickle), was quite unexpected due to the technical nature of the job. This could be as a result of their high involvement in other immediate post-harvesting activities such as gathering, breaking, scooping out, further processing and marketing of cocoa beans. However, the high contributions of women to decision making on processing activities, storage and marketing of cocoa is *a priori* expected. Arene and Omoregie (10) had noted that Nigerian women are frequently in charge of processing, preservation and marketing of all farm produce. PATS (37) then reported that farm women's decision making is influenced by their overall level of involvement in the farm work. CIAS (13) stated that whoever does the job in the farm makes the decision; although, there is bound to be contributions from farm spouses and even children.

Cocoa-based agroforestry according to Alabi (4) is more capital intensive than food crop production. Thus, finance is a major factor in cocoa farming business such that decisions on sourcing for fund for farm operations and hiring of labourers occur at all stages of production - pre-harvest, harvest and post-harvest stages. Table 2 shows that the contributions of men to decision making in these two major aspects of cocoa production were high while that of women were low. CIAS (13) reported that women's low level of income and economic resources limit their contributions to household farming decision. In addition, men's contribution towards the expansion of cocoa farms was high while that of women for this activity was low (Table 2). This is to be expected because Nigerian women have less access and control over land. Fabiyi *et al.* (19) stated that women in Nigeria rarely own land despite their heavy involvement in agriculture. Ojo (33) reported that the production of cocoa is distinctly a man affair because men have more access to land, especially for the growing of permanent crops. The degree of access and control over land according FAO (21) is a central factor affecting farmers' decisions.
These differences were further demonstrated by figure 2. The figure shows steady higher male contributions, especially at pre-harvest stage and relatively lower contributions by women across most of the cocoa production activities. However, unlike in food crop production activities, where women had consistently higher contributions in all the activities than men, in cocoa production, women still had higher contributions than men in many post-harvest activities (Figure 2 and Table 2). This underscores the heavy involvement of women in all agricultural activities (whether food

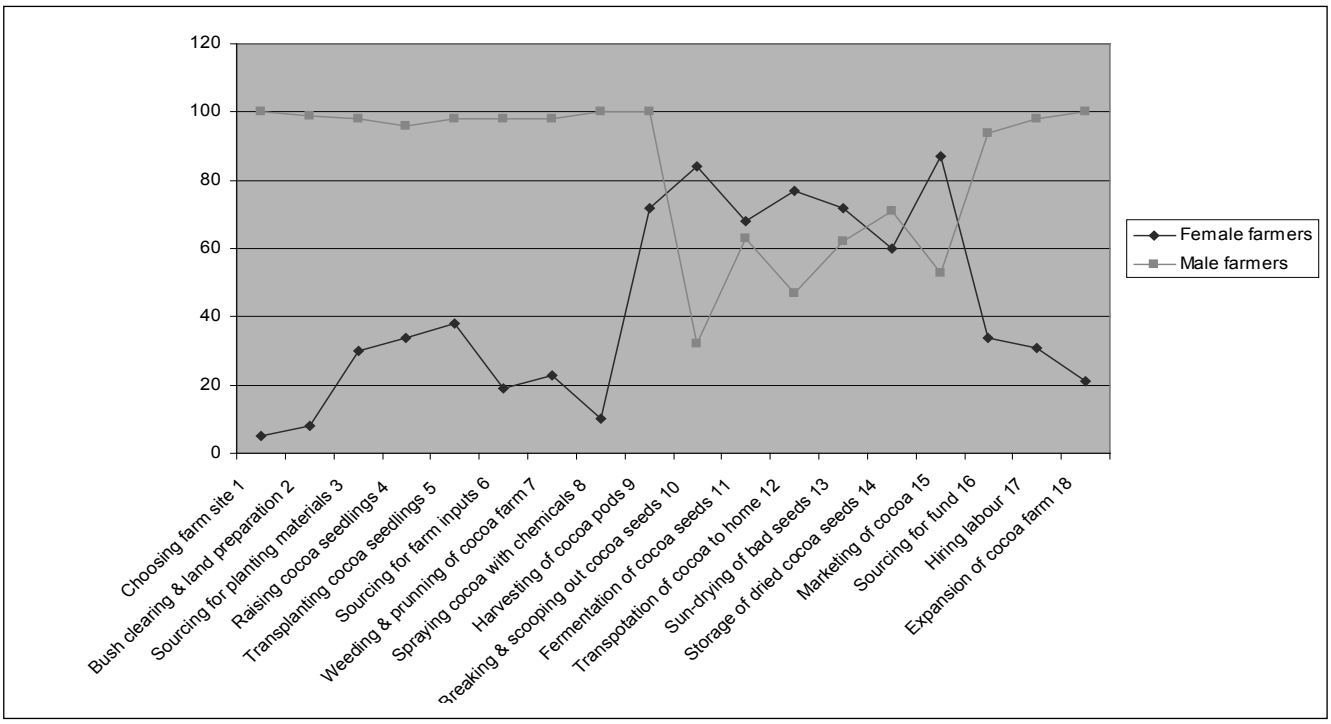

Figure 2: Percentage distribution of the level of contributions of men and women to decision making in cocoa production activities.

or cash crops) in the country. Arene and Omoregie (10) had noted that Nigerian women are frequently in charge of processing, preservation and marketing of all farm produce.

The foregoing discussions (both food crops and cocoa) fail to confirm dominance by men in farm decision making. Rather it shows clearly that there is gender division of labour even in decision making. While women were generally responsible for decisions regarding food crops, men were in charge of those of cocoa production activities. In terms of labour supply, Enete *et al.* (18) reported, across six countries in Africa, that while the number of fields in which women provided more labour for each farm operation increased consistently from the initial farm tasks such as land clearing and seedbed preparation, through sowing and weeding to the final farm operations such as harvesting and transportation, for which women provided more labour for the largest number of fields, the reverse was the case for men. This also shows a clear gender division of labour, in terms of labour supply in the farm.

Conclusion

In general, the contributions of women to decision making in all food crops production activities were higher than those of men. On the other hand, there were steady higher male contributions, especially at pre-harvest stage and relatively lower contributions by women across most of the cocoa production activities. However, unlike in food crop production activities, where women had consistently higher contributions in all the activities than men, in cocoa production, women still had higher contributions than men in many post-harvest activities. This underscores the heavy involvement of women in all agricultural activities (whether food or cash crops) in the country. The observations further support that of Enete *et al.* (18) on gender division of labour in the farm and fail to show any dominance by either men or women

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