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Socioeconomics of the Production and Marketing of Haricot Beans (Phaseolus vulgaris L.) in the Western Highlands of Cameroon

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Abstract
There has been an increase in the demand for Haricot beans (*Phaseolus vulgaris L.*) in Cameroon, most especially from buyers of neighbouring countries and institutions that feed their members. This indicates the existence of opportunities for farmers to exploit the market system and effectively participate in the supply chain within and across national borders. However, farmers don't make use of this opportunity resulting from multiple constraints ranging from low production levels, low income and inconsistency in market participation to high transaction cost. It is thus relevant to identify and address the constraints facing these farmers in a bid to improve production and market participation. This analyzes the factors influencing farmer's participation in the production and marketing of haricot beans in the Western Highlands of Cameroon. Data was collected from 200 farmers in 24 villages in the Western Highlands of Cameroon and analyzed using descriptive and inferential statistical techniques. Findings indicate that the production and marketing of beans was dominated by older and married farmers with low educational background who depend on these for their livelihood. In addition, the farming system practiced, production season, seed type planted and access to production resources significantly influence the quantities produced and marketed. To enhance haricot beans production and marketing, the study opines that development interventions lay emphasis on infrastructural and technology improvement especially with regards to the provision and use of improved farm inputs.
Keywords: Haricot beans, production, marketing, Western Highlands, Cameroon

1. Introduction

Haricot bean (*Phaseolus vulgaris L.*) is a major crop grown and marketed in the Western Highlands of Cameroon. This is grown for its high nutritional value and accessible source of income. It is also grown for its high agronomic value such as adaptability to many climates and soil types and provision of nitrogen to the soil (Buruchara *et al.,* 2011). This makes haricot beans an ideal crop for achieving the sustainable development goals of reducing poverty and achieving zero hunger, improving human health and nutrition as well as enhancing ecosystem resilience in rural communities (Akibode *et al*., 2011). Like other legume crops, it has increasingly been referred to as being pro-poor and environmental friendly since it is a source of cheap protein for the poor and its ability to synthesize atmospheric nitrogen (Tabe-Ojong and Mausch, 2017).

As a result of the numerous benefits that this crop offers, there has recently been an upsurge in the demand for haricot beans from Cameroon, most especially from buyers of neighbouring countries like the Republic of Congo, Equatorial Guinea, Central African Republic, Gabon, Chad, and Nigeria (Siri *et al*., 2014). Besides the cross border demand, the crop is highly solicited in Cameroon by institutions that feed their members such as boarding schools, hospitals, prisons, orphanages and military camps. This shows the existence of potential opportunities for haricot beans farmers to exploit the market system and effectively participate in the supply chain within and across national borders. Based on this premise, it is but logical to assume that the growth and development of the haricot beans sub-sector can substantially contribute to economic development at both the national and household levels in Cameroon.

Despite the rising demand for haricot beans, production is still low and unable to meet food demands (Chalwe, 2011; Oyang et al., 2018). This is even exacerbated by the fact that most households consume what they produce and only participate in markets to sell their surplus after meeting household food demands (Tabe-Ojong and Mausch, 2017). Despite low production and market participation, few donors, non-governmental organizations and local authorities have shown interest in the marketing, let alone the constraints faced by farmers in this sub-sector. However, from observations and discussions with farmers, they encounter multiple constraints ranging from inadequate production resources to gender-based discrimination, hence leading to low production levels and inadequate participation in the market.

Market participation according to Barrett (2008) is directly linked with the generation of a marketed surplus, implying market participation is affected by production technologies and productive assets. Lack of inadequate production technologies and the use of less productive inputs arguable leads to low production and productivity

which may deter farmers from output markets. Based on the non–separable farm household model, farmers are only able to participate and benefit in output markets, in the existence of a crop surplus after catering for their consumption needs. Even after meeting their household food demands, farmers still face a range of marketing challenges such as poor access to market and market information, high transaction cost to input and output markets, infrastructural limitations, limited access to market opportunities and exploitative pricing by middlemen (Bigsten,2008; Muimui,2010 and Kayama,2010). These factors also limit the ability of farmers to expand their scale of production and invest in technologies that increase efficiency and add value to primary production. It further limits the incentives of farmers to participate in formal markets, hence making it difficult for farmers to shift into commercial farming, thus making their contribution and participation in domestic and international markets low.

Some selected strands of literature (Balint, 2004; Mahelet, 2007; Bigsten, 2008; Alemu and Meijerink 2010) have investigated and attributed the low production and productivity of farmers as well as their dismal participation in output markets to inadequate production resources such as poor access to land, labour force, inputs (seeds, fertilizers and pesticides), capital, technology and extension services as well as high transaction cost. Lack of these resources is thought to affect overall production in terms of the quantity and quality produced, volume of products traded as well as market consistency (Randela *et al.,* 2008). Haricot beans like other legume crops are usually cultivated by both male and female farmers and it is no secret that they are affected differently by the constraints of agricultural production and marketing. Nevertheless, there exists little empirical evidence on the constraints faced by them in their production and commercialization. Thus far, there appear to be no research on the participation of women and men in the production and marketing of haricot beans in the Western Highlands of Cameroon despite its agro-ecological suitability in the cultivation of most staple food crops. Consequently, a gender approach to study the constraints and challenges of haricot beans production and market participation in the Western Highlands will generate a more holistic understanding of its problems and solutions.

Although International Organizations such as Pan African Bean Research Alliance (PABRA) and the Institute of Agricultural Research for Development (IRAD) have carried out activities on haricot beans in Cameroon, most of the activities only focused on agronomic aspects such as disease tolerance, soil management and multiplication of improved seeds (Ngueguim *et al*., 2010; Mboussi *et al*., 2012). Hence, information on the factors influencing the production and marketing of haricot beans in the study area remains unattended to. This study therefore aims to complement and build on earlier studies by analyzing the factors influencing the production and market participation of beans farmers in the western highlands of Cameroon. It will do so by describing the demographic and socio-economic characteristics of farmers and the determinants of haricot beans production and commercialization.

2. MATERIALS AND METHODS

2.1 Study area

The study was undertaken in the Western highlands of Cameroon and covered five Sub-divisions in this zone, namely Foumbot and Kouoptamo in the West Region and Babessi, Kumbo and Ndu in the North West Region. The choice of these areas is based on the potential of haricot beans production and marketing in the area (Ngueguim *et al*., 2011). The Western highland is one of the agro-ecological zones situated in the Soutwestern part of Cameroon and covers the northwest and west regions of the country. It is further subdivided into three ecological zones based on altitude; lowland (<800m a.s.l), mid altitude (800 – 1500m a.s.l) and highlands (> 1500m a.s.l). Its topography varies greatly from depressions lower than 400 metres to the mountain tops some 3000 metres above sea level. The population of the agro-ecological zone stands at about 3.6 million with an average of 90-300 inhabitants per km^2 based on the 2005 census. The notable crops cultivated here are maize, irish potatoes, cassava, carrot, cabbage, onion, leaks, green pepper, green beans, yams, water melons and haricot beans.

2.2 Sampling procedure

A multi-stage sampling procedure was used to select sampling units. In the first stage, a purposive sampling technique was used to select the Western highland agro-ecological zone wherein four divisions, five sub-divisions and twenty four villages were selected. This was established with the help of the sub-divisional delegates of agriculture, extension workers and the village heads in the various sub-divisions and villages. The snowball technique was employed in the second stage to select a sample of 200 women and men farmers of equal proportion in the twenty four villages. The study mainly focused on farmers who cultivate and market haricot beans in a bid to capture their production and marketing experiences. Eight (08) farmers of equal proportion of women and men were selected from five villages each in Kumbo, Ndu, Foumbot and Kouoptamo sub-divisions. This was not the case in Babessi Sub-division since it is comprised only of four villages. Ten (10) farmers of equal proportion of women and men were selected in all the four villages in this sub-division. Thus, a sample size of forty (40) farmers was selected in each sub-division, making a total of two hundred (200) female

and male farmers in the entire study. Farmers had to meet the following eligibility criteria to be considered for the study: male and female farmers who cultivate and market haricot beans, cultivate a land surface area of not less than 0.5 hectare, sell at least 119kg of haricot beans during the main growing season and live permanently in the study area.

2.3 Data collection procedure and analysis

The study made use of a structured questionnaire and an interview guide to gather primary data. The researcher used a self-designed questionnaire for data collection which comprised both close and open-ended questions. Sample information were collected on variables such as socio-demographic characteristics of farmers including sex, age, marital status, education, household size, source of income, and years of experience. Information on quantity planted, harvested, marketed and consumed was obtained from farmers. Finally, the constraints and challenges involved in production activities as well as in accessing production resources and farm infrastructures were gotten from farmers. Three focus group discussions were held to bring out issues that generated divergences and controversies in the course of data collection and post-data analysis for discussion. This was conducted using an interview guide with farmers in Babessi, Kumbo and Foumbot sub-division in order to reflect the activities of the two production seasons in the two regions. Each focus group comprised four (04) women and four (04) men (farmers) in order to bring out the differences in production and marketing of haricot beans by gender. Data was analyzed using descriptive statistics, Chi-square test, Mann Whitney U Test and Kruskal Wallis Test. Descriptive statistics such as frequency distribution, percentages, mean and mode as well as Chi-square test were used in analysing the socio-demographic characteristics of farmers and the constraints faced by farmers meanwhile, quantitative data was analyzed using Mann Whitney and Kruskal Wallis tests.

3. Results and Discussion

3.1 Biographic Profile

The socio-demographic characteristics examined in this study are age, marital status, educational level, household size and number of years of experience. Table 1 displays the frequency distribution of haricot beans farmers according to their socio-demographic characteristics. The table indicates that a large proportion of farmers (71.5%) were above 40 years. It is found that a majority (82%) of the farmers are married with large household sizes of seven persons and above. With respect to the educational levels of farmers, almost half (46.5%) had attended the primary level of education while more than a quarter (28.5%) had no formal education. Almost two-third (62%) had been cultivating and marketing haricot beans for more than 16 years.

The demographic characteristics of the farmers studied revealed that it has a great influence on the production and marketing of haricot beans. Looking at the ages of farmers involved in haricot beans activity, the study revealed an ageing population that dominates haricot beans activities. Similar results were reported by Abera (2009), Chalwe (2011) and Ayalew (2011) who found that majority of the farmers are above 41 years. Although experience is gained with age, farming needs not to be dominated by an ageing population as this is likely to have negative implications on future haricot beans production in terms of labour availability and adoption of new technologies. The survey further revealed that, a great majority (75%) of the farmers have low formal educational background with majority of women having no formal education. This suggests that haricot beans farmers have a relatively low educational level; a trend that could negatively impact on farmer's adoption of innovations since literacy level influences the rate at which farmers adopt technology (Nyagaka *et al.,* 2009). This therefore implies that written market information is of minimal benefit to most haricot beans farmers as they cannot understand and interpret such information.

Table 1: Socio-demographic Characteristics of farmers

Variable	Frequency	Percentage
Age distribution of farmers		
20 - 25	6	3.0
26 - 30	30	15.0
31- 35	22	11.0
36 - 40	29	14.5
41 - 45	29	14.5
46 - 50	35	17.5
51 and above	49	24.5
Marital Status of farmers		
Married	164	82.0
Single	28	14.0
Widow	6	3.0
Widower	2	1.0
Educational level of farmers		
No formal education	57	28.5
Primary school	93	46.5
Secondary school	36	18.0
High school	13	6.5
University	1	0.5
Household Size of farmers		
1-3 persons	11	5.5
4-6 persons	60	30.0
7 persons and above	129	64.5
Number of years of experience		
2-5 years	16	8.0
6-10 years	31	15.5
11-15 years	29	14.5
16-20 years	51	25.5
21-25 years	20	10.0
26-30 years	24	12.0
Greater than 30 years	29	14.5

Source: Field survey, 2014

According to the survey, most households (64.5%) have a size of at least 7 members per household. This is common in most rural farm households and very beneficial for labour purposes as such farm families will have little or no need for hired labour. Large family size is also indicative of more hands to aid in marketing. Findings from a cassava study in Ghana by Martey *et al.* (2012) empirically proves this as the household members act as motivational factors to participate in cassava markets. This study is thus in agreement with the above observations since additional labour as was used to compliment farm and marketing activities. Contrastingly, Nwachuku and Onyenweaku (2007) reveal that large household sizes negatively affect production output. They contend that farmers with large household sizes are faced with the challenge of attending to numerous family needs which affect resource allocation for agricultural activities. The findings of Makhura (2001) and Asfaw *et al.* (2010) also confirm that farmers with larger household sizes consume much of the output and hence participate less in the market. Another implication of large household size is that women will have a lot to do especially in meeting the food needs and welfare of the family since they are more inclined to these responsibilities. Hence, their propensity of participating in the marketing of haricot beans will decline. Despite the above contention, our study reveals that the size of the household did not influence the quantities marketed as farmers with household sizes of between 1-3 persons averagely marketed the same quantities (1003 kg) as those with more than 7 persons. Therefore haricot beans production across the study area is primarily for the market. Being a very profitable crop, farmers will prefer to sell the crop and rely on other food crops like maize, cassava and vegetables for their livelihoods.

3.2 Nature of Production

The farming characteristics considered in this study that are known to influence the quantity of haricot beans produced and marketed include the farming system practiced, quantities planted, quantities harvested, quantities marketed, and quantities used as food. Findings indicate that farmers practice mono, mixed and both cropping systems depending on the different production seasons. However, there was a significant association between the cropping system practiced and gender in the study area ($\chi 2=104.762$; df=1; p=0.001) as shown on Table 3.

Table 2: Distribution of Haricot Beans Farmers by Farming System and Gender

Gender	Farming System			Total
	Mono-cropping	Mixed cropping	Both	
Men	64	24	12	100
	64.0%	24.0%	12.0%	100%
Women	48	33	19	100
	48.0%	33.0%	19.0%	100%
Total	112	57	31	100
	56.0%	28.5%	15.5%	100%

Source: Field work, 2014

Over half (56.0%) of farmers practiced mono-cropping which was followed by those who practiced mixed cropping (28.5%) and a minority who practiced both systems (15.5%). A comparison between the farming system practiced and gender reveals a significant difference ($\chi 2=5.287$; df =2; p=0.071) whereby more men (64.0%) are involved in mono-cropping than women (48.0%) as confirmed in table 2. The quantity planted is highly influenced by the cropping system practiced and the production season. Result in table 3 revealed that farmers averagely planted 93.5kg with highest quantities (119kg) planted by those who practiced mono-cropping. Analysis using Mann Whitney U test revealed that the difference in quantities planted by sex was not significant =4658.000 p=0.397) though women planted slightly greater quantities (103.7kg) than men (86.7kg).

Overall, farmers averagely harvested 1164.5kg of haricot beans per season. The quantity harvested by gender was not significant. Mann Whitney U test: =1876.000 p=0.826, indicated that women averagely harvested more quantities (1574.2kg) compared to their male counterparts (1122kg) during the second season cultivation (table 3). However, this trend was not the same during the first production season. (March cultivation) as men harvested significantly (Mann Whitney U test: =734.000 P=0.001) greater quantities (678.3kg) compared to women (389.3kg). Farmers averagely marketed 918kg of haricot beans. The highest quantities were marketed by women during the second season cultivation (1802kg). This trend differ significantly during the first season cultivation as men marketed (719.1kg) greater quantities. This was the case of farmers in the North west region where majority of women intercropped haricot beans with other crops. There was a significant statistical evidence that the quantities used as food differed by gender (Mann Whitney U test: 2676.000; p= 0.001). Findings in table 3 indicated that women averagely used 88.9kg while men used 51.6kg.

This finding implies that farming system differ between regions, production season and gender. Typically, farmers in the Western highlands practiced both the mixed and the mono-cropping system in different production seasons. There are two main production seasons for haricot beans in the Western Highlands: the first season which is from March to June and the second season which runs from September to December. Haricot beans is grown as a mono-crop and/or intercropped with either cereal or perennial crop in the West Region (Ngueguim *et al.,* 2010). This is done mostly in the second season. According to Kalyebara (2005), haricot beans will yield more under mono-cropping than when intercropped with other crops due to high yield potentials. Jenkins, (2011) reveals that mono-cropping of red haricot beans is more profitable for the households compared to growing in association with other crops or intercropping. This affirms the study findings where farmers in the west region produced and marketed larger quantities as a result of the mono-cropping practiced during the second season.

Table 3: Distribution of farmers by farming characteristics

Variable	Gender	Quantities (kgs)	Statistical Values
Quantities Planted	Female	103.7	U=4658.000
	Male	86.7	P=0.397
Quantities Harvested	Female	1574.2	U=1876.000
	Male	1122	P=0.826
Quantities Marketed	Female	1802	U=4658.000
	Male	1105	P=0.005
Quantities consumed	Female	88.9	U=2676.000
	Male	51.6	P=0.001

Source: Fieldwork, 2014

Farmers in the North west region intercropped haricot beans with various crops like maize, potatoes, huckleberry, groundnut and cocoyam in order to diversify production per unit area of land especially during the first season. However, it is observed that haricot beans are commonly intercropped with maize due to their strong agronomic compatibility as evidenced in the North West Region. During the focus group discussion, the farmers mentioned that intercropping is preferred for two main reasons: it minimizes the cost of production and provides security against crop failure as a result of pest and diseases or bad weather and secondly, it is also a means of satisfying the family's taste for a variety of food crops.

Although the second cropping season has been established to be the best for haricot beans production in the west region due to climatic compatibility, production is not possible in some parts of the North West Region like

Kumbo and Ndu. This rather contradictory result may be due to the rapid decline in soil moisture immediately after rains have ceased leading to water stress, thus affecting production. Another possible explanation for this is that the maize season is usually very long (about 5 months in most parts of Kumbo) which does not allow for the cultivation of second season crops due to water stress. Another important limitation gathered during focus group discussion is that, animals are allowed to stray and feed on farm residues after the first season harvest, thus discouraging the second season cultivation of haricot beans. This was highly noticed in Ndu sub-division where second season cultivation was almost absent.

In spite of the growing demand for haricot beans for both domestic and export market (Siri *et al*., 2014), restricted availability of quality seeds and lack of the required knowledge on the associated agronomic practices have drastically affected production of haricot beans. There are several possible explanations for this result: low quantity of seeds stored, high costs of improved seeds, storage pest attacks, lack of knowledge on insecticide treatment and lack of storage facilities. Another explanation for low quantities of seed planted is related to the high level of intercropping practiced which is common during the first season in the North West region. A contrary view was noticed with farmers in the West region where many more seed quantities were planted because they practiced the mono-cropping system, cultivated on larger farm sizes and planted improved seeds due to their proximity to IRAD specialized in testing and multiplying improved haricot beans varieties.

Regarding the quantities of haricot beans harvested, there was a considerable difference between the quantities harvested by region and by gender. The study revealed that farmers in the West Region harvested greater quantities as compared to their counterparts in the North West Region. It seems possible that this result is due to the practice of mono-cropping, second season cultivation where post-harvest losses are minimal and easy access to improved seeds. Improved haricot bean varieties are not only drought and disease tolerant but also yield higher than the local indigenous varieties (Chirwa *et al.,* 2007). A closer look at the quantities harvested by gender reveals that women harvested greater quantities compared to their male counterparts. This implies that women have all it takes to contribute to production like men in various capacities despite the discriminative circumstances in which they find themselves. However, this trend differed significantly during the first season where the men harvested more quantities. This was mostly the case of farmers in the North West Region where the majority of women intercropped haricot beans with other crops because they cultivate mostly during the first season. Another explanation for the high quantities produced by men is related to the farming system (mono-cropping) and also because they cultivated high yielding and climbing seed varieties.

In connection with the quantities marketed, the study confirmed that there was a positive correlation between quantities harvested and quantities marketed as farmers with greater harvests supplied more to markets. This corroborates the ideas of Barrett (2008) that for farmers to participate in the market they have to harvest an amount above their own consumption needs. The farming system practiced and proximity to market centers also greatly influenced the quantities produced and marketed. In a study conducted on livestock farmers by Holloway *et al.* (2000), farmers with lower transaction costs participate more in the market and sold greater quantities because they are likely to recover their production and marketing costs. Randela *et al.* (2008) conclude by saying that the existence of a guaranteed market is expected to impact positively on household decision to increase production and participation in the market. The higher quantities harvested and marketed by women points to the fact that women are becoming more market-oriented and viewing their farming from a commercial perspective and not just as a way of life. This is a sharp improvement as haricot bean was previously cultivated just for subsistence purposes.

Although haricot beans is a major crop across the study area, field visits revealed that the quantities consumed are negligible compared to the quantities marketed. This is a clear indication that farmers in the Western Highlands produce haricot beans for the market rather than for subsistence purposes. This assertion therefore concurs with Ferris's (2008) study that many small-scale farmers in Africa rely on the marketing of haricot beans as an important source of household income. However, this discovery contradicts later study findings in Burundi where smallholders used a larger part of haricot beans on household consumption (Birachi *et al.,* 2011).This is probably because haricot beans is a major staple food in Burundi. In the West Region, the farmers sold a larger part of the output to the market hence, making them more market oriented than the farmers in the North West Region.

3.3 Resource Mobilization

Findings with regards to land acquisition indicated that farmers could inherit, purchase or rent land. While men acquired this through inheritance and purchase, women did so through rentage and inheritance either from other relatives or husbands' land. This mode of acquisition does not permit women to have control according to the Harvard Analytical Framework. Conversely, it can be concluded that women are not economically empowered because they cannot use them as collateral to get loans. This finding is coherent with findings from Fonjong *et al.* (2010) whose study reveals that women in Cameroon mostly acquire land through family bonds or through transaction (purchase or rent). Similar results were presented by Endeley et al. (2005) who report that in spite of

the efforts made by women to increase agricultural productivity, they face more constraints than male farmers, due to cultural aspects that deny them rights to owning land titles which sometimes are used as collateral for loans and for agricultural inputs. The manner in which women acquire land, therefore, has a bearing on decision-making (what to plant and how to manage the proceeds), production costs, production volume, involvement and participation in haricot beans activities. Farmers from the North West Region acquired land the most through inheritance while those from the West Region, especially in Foumbot, had theirs through renting due to high urbanization and need from institutions like IRAD. Farmers in the North West Region especially the men, therefore, have better control over their land compared to their West Region counterparts.

In terms of access to labour, farmers across the study area used additional labour besides family labour on their farm. The dominant labour force used by 87% of farmers was a combination of family and hired labour. Chi-square analysis revealed no significant difference between access to labour and gender ($\chi 2=6.052$; df =3; p=0.109). The high use of hired labour may be due to feminization in agriculture as a result of the out-migration of men and mostly male youths from rural areas to the cities; consequently, leaving behind the ageing and the women who rely solely on hired labour for physically demanding activities. This has caused women and the ageing to become the key haricot beans cultivators and agricultural workers in the Western highlands. Men are usually involved in land clearing, threshing and winnowing while the women do the hoeing, sowing, weeding, harvesting and sorting. However, these activities are all practically carried out by women in the North West Region. This finding differed with the ideas of Ntsebeza (2007) and Seidu (2008) that smallholder farmer operate their farms using mainly family labour for production and commercial activities. This observed difference could be due to a change in geographical location as well as the scale of production. There is, however, another type of non-household labour known as collective labour or labour exchange used more frequently by women who cannot afford to pay cash to obtain needed farm labour. This is more peculiar in the North West Region where women used friends, meeting groups and neighbours. Another reason for this is that it encourages fellowship and friendship amongst the farmers while confirming the adage that “many hands make work light”.

Support to farmers in terms of credit still remains a key challenge in the Western Highlands as only 11.5% farmers from the North West Region acquired loans from micro-financial institutions, of which 9.5% are men and 2% are women. At least half (58.6%) of farmers studied expressed ignorance of the procedure of getting a loan as the major constraint for not using this financial resource; (20%) were scared of the risk associated with untimely payment, and the rest 21.4% said they were more comfortable getting loans from other financial sources like meeting associations (njangi or tontine and bulk sellers). This affirms findings of FAO (2001) that farmers have limited access to income from formal institutions to provide the basic farm necessities. Findings further reveal that ignorance resulting from low level of literacy, unfavourable loan conditions from some of the micro-financial institutions and lack of money to approach formal credit institutions have caused many farmers to resort to informal sectors commonly known as ‘Njangi’ or borrowing from bulk sellers. Moreover, Abayneh (2013) states that, access to credit helps farmers buy different inputs for production, cover labour and transportation cost as well as other cost related to farm operations. In the same vein, Obare *et al.* (2010) hold that credit availability is expected to promote the timely purchase of inputs and engagement in other farm resources. Hence, those with higher capital and who can access credit are able to embark on more capital-intensive activities such as bulk selling that are more profitable. This indicates that access to credit has a positive influence on the quality and quantity of haricot beans produced as well as the farmer’s decision to participate in the market. In as much as some credits were obtained from the various informal groups, it limited haricot beans activities in the study area, because informal sectors do not provide as much credit as micro-financial institutions.

The majority (88.5%) of farmers used one or a combination of the following inputs: fertilizer, herbicide and improved seeds. While many more farmers reported their use of fertilizers and herbicides,few of them mentioned their use of improved seeds either gotten directly from a seed company or from IRAD. Only a minority (13.9%) of farmers from Foumbot indicated the use of improved seeds. In sum, a majority of farmers had access mainly to fertilizers and herbicides, especially men. Availability, high prices, lack of credit facilities are some of the limitations to access and use the necessary farm inputs. On the other hand, the use of indigenous or local seeds was very high in the study area due to its easy availability and the fact that it is less expensive as even testified by farmers. This confirms finding of a male farmer in Foumbot who harvested 476kg after planting just 17kg of white climbing improved variety (Mex 142) as against seven 15litres buckets harvested from a bucket of local white variety as recounted from another male farmer in Babessi (Focus group discussion). Therefore, promoting the use of improved seed varieties remains a plausible solution to increasing beans production and market surplus.In connection with access to inputs, findings reported high use of fertilizers by both the women and men. In conformity with this, Morgado *et al.* (2003) posited that fertilizer application in recommended quantity is essential for higher yields and quality of grains. Supporting this view, Tolera *et al.* (2005) added that, phosphorus is the second limiting element after nitrogen for the growth of legumes. This implies that the use of fertilizer in recommended quantities is indispensable for an optimum yield of haricot beans.

4. Conclusion

It is established that haricot beans activities are dominated by married women and men above 41 years with low educational background and who depend solely on haricot beans activity for livelihood.The quantity produced and marketed is influenced by the farming system practiced, the production season and the seed type planted. More men practiced the mono-cropping system and this was essentially in the West Region, while women practiced both mixed and mono-cropping. The volumes produced and marketed by women and men are equally influenced by access to production resources such as land, labour, credits and inputs. Women are highly affected by these resources that contribute to the quantity of haricot beans been produced, its quality and constant supply to the market.Due to inefficiency and inadequate awareness in the use of improved seeds, seed companies and research institutions should develop and disseminate improved haricot beans varieties to farmers at subsidized rate. Access to credit is a great driving force for farmers to improve on farm output and effective participation in the market. Therefore, to enhance borrowing and use of credit facilities, micro-financial institutions should formulate educative programs to sensitize farmers on credit acquisition and use.Farmers should also be encouraged by extension workers, NGOs and traditional and local councils to form effective producer groups and networks which will help improve their bargaining power and minimize infiltration by middlemen.Finally the study has implications for both the scientific community and the economic world. Besides concentrating on factors influencing farmers' participation in the production and marketing of haricot beans, the work also bring to light the gender dynamics involved in haricot beans production and marketing in the Western Highlands of Cameroon. Furthermore, to meet up with the country's development potentials, the work is in line with the Growth and Employment Strategy which highlights government's commitment to the achievement of the Sustainable Development Goals (SDGs).

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