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Opportunities and challenges of coffee marketing: Evidence from Gibe Woreda, Hadiya Zone, South Ethiopia

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Abstract

This study was initiated to opportunities and challenges of coffee marketing in Gibe district, Hadiya zone of Southern Nations Nationalities and peoples' region. The nature of the product on one hand and the lack of marketing system on the other hand have resulted in low producers' price and hence low benefit by the producers. Data was collected from 150coffee producing households and 25 traders through structured interview, focus group discussion, key informant interviews, as well as field observation. Structure, conduct and performance approach were used to analyze coffee market. The market actors in the study area were producers, local collectors, retailers, processors and consumers. Among the six marketing channels identified, the producers –retailers - consumers' channel was found the first important in terms of volume of coffee transacted while the producer-local collector-consumer marketing channel was identified as the least. The result of the multiple linear regression reveals that the supply of coffee to the market is significantly affected by price of the product, quantity produced, access to extension service, age and access to market information were significant influence on marketable supply of coffee. The favorable weather condition, suitable land, water accessibility and current demand for the products and comprehensive policy of government for the development of the product are one of the opportunities for enhancement of the product in the area. There is information asymmetry between the coffee producers and traders in the study area. However, traditional ways of production, poor post product handling, product quality problems, and lack timely distribution of market information, transportation problems and lack of access to formal credit were the main challenges to increase market supply in the area. Thus, it is recommended that stockholders should give due attention in convey reliable and timely market information in order to increase bargaining power of market actors and efficient marketing of coffee in the study area.

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Introduction

Ethiopia's development strategy has prioritized boosting agricultural output as a foundation for rural-development. Although agricultural productivity has increased, there have been negatives due to many households' restricted market engagement. Many farming households have restricted access to the market, which is a major obstacle in the fight against poverty (Best *et al.*, 2005). This demonstrates the critical relevance of an effective market that is a responsive, integrated, and efficient market for ensuring the best resource allocation and motivating households to raise productivity (FAO, 2003).

According to Bezabih (2010), Ethiopian agriculture still faces various issues and difficulties. The main ones are unfavorable climatic conditions, a lack of an appropriate land use system that results in the degradation of soil and other natural resources, limited adoption of improved agricultural technologies, the predominance of subsistence farming, a lack and/or absence of an agricultural production system focused on business, and limited or no access to market facilities that result in low participation of smallholder farmers in the value chain or value addition of their products. Ethiopia is the top-producing country of C. Arabica in Africa, ranking as the fifth-largest Arabica coffee producer and tenth in coffee exports globally (ICO, 2014).

Due to the labor-demanding nature of this agricultural subsector, it is essential to produce high-value and marketable commodities like coffee. It helps households generate higher levels of income, which in turn helps the nation's GDP and foreign currency earnings rise. For Ethiopia's economic prosperity, coffee is an important crop. In producing countries, coffee is a significant socioeconomic component because it is farmed by roughly 25 million farmers globally, 80% of whom are smallholders (International Coffee Organization, 2014). Since coffee production and harvesting require much labour and are essential sources of rural employment for both men and women, coffee is a crucial development agent that supports the livelihoods of millions of people worldwide, generates cash returns in subsistence economies, and generates income in developing countries. Coffee is one of the most traded commodities in the world. However, given the high concentration of production by smallholders in underdeveloped developing nations, the sector's trading structure and performance significantly affect development and poverty (Minten *et al.*, 2014).

The main crop exported from Ethiopia is coffee (Petit, 2007). For countries in East Africa, including Ethiopia, Uganda, Kenya, and Tanzania, coffee is currently one of their most valued export commodities. Over the past five decades, coffee has consistently made up 60% of all export revenue (Zekarias *et al.*, 2012). The primary source of variation for coffee arabica is thought to be Ethiopia, where it originated (Labouisse *et al.*, 2008).

Coffee production's significance in grassroots socioeconomic development is one alternative offered to developing countries to address the demands of its citizens locally. However, this subject has yet to be fully explored. The government currently views commercializing smallholder agriculture and increasing production as a key to Ethiopia's agricultural development (Neway, 2006). The rural development and food security policy's goal is market-driven agricultural advancement to provide the rural population with sustainable lives. The regions can support coffee tree growth and are provided with various natural resources. However, the local population in the region only partially benefits from the resources. Low producer prices and, consequently, low producer benefits are the outcome of the product's nature and the absence of a market system, respectively. As a result, it is critical to grasp and comprehend how this system works if the resources are to be used sustainably to support the community's way of life in the region where the resource is found. Therefore, an assessment of the prospects and constraints of coffee marketing was attempted in this study. The study explicitly identifies the main coffee marketing channels, analyzes the market's composition, activity, and performance, and

pinpoints variables influencing the marketable supply of coffee. Additionally, pinpoint coffee marketing prospects in Gibe Woreda.

Material and methods

Type and source of data

Data for this study was collected from two sources: primary and secondary sources.

Primary data

The data was collected formally by the method of individual interview using pre-tested structured interview schedule questionnaire and informally through focus group discussion, key informants and field observation using checklists. In this study the primary data was collected from farmers focused on factors affecting coffee marketing, size of output, access to information, credit access, and access to market, production cost, and return from product, extension service, and demographic characteristics of the household.

Secondary data

The primary data obtained from the fieldwork were also supplemented with data obtained from secondary sources in order to bridge information gap from primary sources. Secondary sources of information were used for this study include published materials such as reports, plans, official records, census records, project reports, research papers and data files from internet/ web pages. Thus, these are data collected by other people and were used carefully by counter checking for their accuracy.

Methods of data collection

A combination of methods were used to collect relevant data. These include field observation, informal interview, focus group discussion and structured interview.

Field observation and informal interview

Field observation was conducted throughout the whole process of the research in order to ensure the validity of information obtained. It was used for development of the formal question. The fact that local people fail to articulate the details of what they do (Girma, 2000) necessitated the need for maintaining thorough observation throughout the research. On the other hand, informal interview was conducted with the purpose of obtaining information for developing fully-fledged structured questionnaire which is the main tool of collection of information needed. It was conducted in an informal manner and in a relaxed setting while attempting to center the issue the researcher attempts to attain. There was no formal questionnaire posed on discussants, rather, interview is incited by the researcher and followed by discussion made by the informants on the issue under consideration.

Structured interview

This is the most important tool of data collection in this research. On the bases of information obtained from techniques discussed above and literatures, questionnaire was developed. The questionnaires are handled by enumerators. The enumerators have good experience are taken on and train on the techniques of data collection and they was familiar with the study kebeles. As farmers in the area are speaking local knowledge, bilingual enumerators and those that know the area well are recruited for the enumeration. Prior to implementing the survey, the questionnaire was used to train enumerators and tested for their clarity. Questioners that are found not to be clear to the local people and enumerators during training and testing were modified. Amendments are also incorporated into the questionnaire so as to make the idea easily comprehendible to the interviewees and enumerators. The survey questionnaire covered a wide range of information which included household characteristics, farming system and asset endowment, institutional and policy issues and farm orientation from the selected Kebeles.

Determination of sample size

In this study, a three-stage sampling procedure was employed to select a specific coffee producer household. In the first stage, by employing purposive sampling method, Gibe woreda is selected from Hadiya zone based on the huge potential for coffee production and productivity. Second, three kebeles

from the district was selected also through purposive sampling approaches based on the kebeles potential of coffee production. In the third stage, from the total lists of administrative kebeles, 150 household heads households in the sample were selected randomly.

Accordingly, in this study sample size selection was based on the rule of thumb N≥50+8m developed by (Green, 1991), where, N is sample size and `m` is the number of explanatory variables (Xi) where i=1, 2…. Based on this rule the researcher was taken a total sample of 150 respondents from the selected Kebeles of districts.

Data analysis

In the study both descriptive and econometrics methods of data analysis was employed.

Descriptive statistics

This method of data analysis was used in terms of Tables, minimum, maximum, frequency, percentages, means, ratios and standard deviations in order to get values and interpret the data obtained from sampled households and traders' socio-economic characteristics and structure of the market, conduct and performance of the coffee producers' markets and marketing systems. And those data that are not analyzed through quantitative analysis was analyzed by using qualitative based on interview and group discussion.

Econometric analysis

This method of data analysis refers to the use of different economic and statistical tools or models for testing hypothesis related to the objective of the study. An econometric model consists of a dependent variable, also called the left-hand-side variable, and independent variable(s), also called explanatory or right-hand-side variable(s) and an error terms, or to be more precise stochastic disturbance terms, which stand for unobservable random variables not explicitly included in the model. The error term may also reflect randomness in human behavior or measurement errors, and has certain assumed properties such as a mean, variance and covariance (Gujarati, 2003). The multiple linear regression analysis was used to study the relationship between a dependent variable and one or more independent variables.

Multiple regression model

Multiple Linear Regression analysis is statistical technique used to analyze the influence among variables (*i.e.* single dependent variable and several independent variables) with the objective of using the independent variables whose values are known to predict the single dependent value (Hair *et al.*, 1998). The purpose of using a multiple linear regression model when there are two or more independent variables is to estimate how the included variables are related. The estimated coefficients indicate the effect of a change in the independent variables on the dependent variable (Green, 2003).

The general form of the multiple linear regression models is:-

$Y = \beta_o + \beta_1X_1 + \beta_2X_2 + \ldots\ldots\ldots\beta_kX_k + \varepsilon_i$

Where Y= dependent variable

Xi = a vector of explanatory variable, and 'i' = 1, 2, 3… n

β= coefficient of i^{th} independent variable, β_o= intercept

ε_i = unobserved disturbance term

Multiple Linear Regression (MLR) analysis in this study was used to identify factors affecting the supply of coffee in the study area.

According to Gujarati (2004), the coffee supply model to be specified in this study was taken the following form.

$Y = \beta_o + \beta_1X_1 + \beta_2X_2 + \ldots\ldots\ldots\beta_kX_k + \varepsilon_i$

QS_i = f (PR, QPRO, FAMS, EXTS, DMK, CRA, EDU, MKIN, AGE, SEX, EXP--------Xi)

$QS_i = \beta_{o+} \beta_1$ PR + β_2 QPRO + β_3FAMS + β_4 EXTS + β_5 DMK +β_6CRA +β_7 EDU +β_8 MKIN +β_9AGE+β_{10}SEX + β_{11} EXP …+ β *k*-1 *Xk*-1+ βk+ ε_i

Where: Q^S_i = quantity of coffee supplied to market, PR = Price of the product, QPRO = Quantity of coffee produced in 2008E.C, FAMS = Family size, EXTS = Extension services,

DMK =Distance to the market,CRA = Access to credit, EDU = Educational level of household head, MKIN = Access to market information, AGE = Age of household head, SEX = Sex of household head and EXP= Experience of the HHH.

Result and discussion

Socio-economic characteristics of coffee producers

This subsection presents and discusses the descriptive analysis results of both continuous and discrete/dummy variables showing coffee producers' socio-economic characteristics. The survey result shows that there are households with as few as two family members and as many as fourteen members. In addition, 12.33% of the respondents belong to a low family size (a family size with a minimum of two and maximum of three), 54.67% of the respondents have a medium family size (a family size with a minimum of four and maximum of six), and 26.67% have large family size (a family size with a minimum of seven and maximum of ten). In contrast, 6.33% of the respondents have a considerable family size (a family size with a minimum of eleven and a maximum of fourteen).

Respondents' ages vary between 36 and 67 years, with an average age of 43.32. This shows that all the coffee producers were in the age range of active labour force. Thus, this is very important with respect to the amount of coffee supplied to the market. As active family labour increases, the production of coffee may increase, and as production increases, the supply of coffee to the market will also increase. As the active labour force increases, the hands-to-work will also increase. The result shows that less than half (40.67%) of coffee-producing household heads did not attend formal education, but 59.33% of the sampled households attended formal education. Out of 59.33% of household heads that attended formal education, 22.67% attended elementary school (grade 1-4), 24% attended secondary school (grade 5-8), and only less than one-tenth of them (12.66%) attended high school (grade 9-12).

The result indicates that coffee producers have an average of 8.82 years of experience, with a minimum of 8 years and a maximum of 19 years of experience in producing coffee.

The survey result shows that 83.33% of the respondents were male, while the rest, 16.67%, were female. Furthermore, concerning the respondents' marital status, 75.33% were married, 8% were widowed, and 16.67% were divorced. Finally, regarding religion composition, 14% of the respondents were followers of Orthodox, 72.67% were Protestant, 6% were Catholic, and the remaining 7.33% were others. This shows that most sampled households in the study area were Protestants.

The result indicates that out of the total sampled respondents, 48% of the respondents have access to an extension service. However, the remaining 52% of the coffee producers in the area needed access to extension services. This shows that most coffee producers in the study area needed access to extension services. The result shows that 42% of the households have access to market information, but 58% of the households do not have access to market information. This might be due to poor infrastructural facilities and the proximity of the market centre from their residence. The survey result indicates that 80% of the respondents did not have access to credit, but the remaining 20% got credit from their relatives and friends. This implies that most households in the study area need help to access credit services. This is because anyone who wants to engage in coffee production and marketing can do it. After all, it is not labour-intensive.

Socio-economic characteristics of traders

Regarding the gender dimension of the coffee producers, most of the traders who engaged in coffee trading in the study area were males. The number of male traders engaged in coffee trading was more significant than female traders. The survey result indicates that 88% of the interviewed traders were males, and only 12% were females. Regarding their religion, 84% of the traders were Protestant, and 16% were Orthodox. The result shows that trader' ages range between 21 and 39 years, with an average age of 23. The traders in the study area have an average of

2.5 years of experience, with a minimum of 5 and a maximum of 9 years in coffee trading, with a standard deviation of 2.13.Regarding the education status of traders, 13% of sampled traders did not attend formal education, 50% of sampled traders attended elementary school, and the remaining 25% attended secondary school.

Coffee marketing channel

During the survey, six marketing channels were identified for coffee, and a comparison was made among channels based on the volume of coffee that passed through each channel. As indicated in Fig. 1, the buyers who buy the coffee from the producers were local collectors, consumers, processors and retailers and shared an estimated percentage of 21, 13, 38 and 28, respectively.

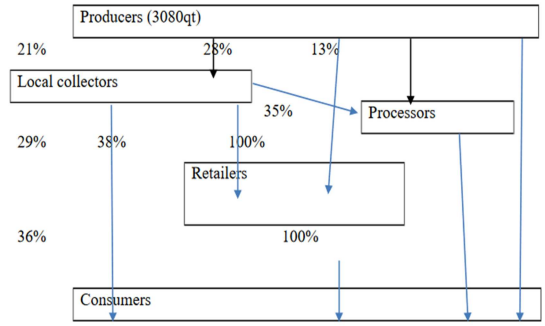

Fig. 1. Marketing channel of coffee

In the study area, the result shows that there are six marketing channels for coffee. Among the channels, the producer-retailer-consumer channel was identified as the first important marketing channel in the study area with respect to the volume of coffee transacted. This might be because local collectors in the study area are part-time traders, so that they may buy less coffee than retailers. Therefore, retailers can buy more quantity of coffee than local collectors. This makes the transaction of coffee in a producer-retailer-consumer channel the highest.

On the other hand, the producer-local collector-consumer marketing channel stands last for coffee in the study area. This might be because local collectors sell more of the coffee to retailers rather than selling it to consumers. The reason is their prior agreement with retailers, and the workload is also low when they sell to the retailers rather than directly to consumers. This is in line with the results by Woldemicheal (2008) and Adugna (2009), who stated that the producer–retailer–consumer channel was the first most crucial channel in terms of the volume of commodities marketed while the producer-local collector-consumer marketing channel was the minor marketing channel.

Degree of market transparency

The survey result indicates that only 42 per cent of producers have adequate, timely and reliable market information in the study area. However, the remaining 58% of the coffee producers need adequate, timely and reliable market information in the study area. This might be because of poor infrastructural facilities and other related problems. Concerning traders, 59% of the traders mentioned that they have adequate, timely and reliable market information in the study area. However, the remaining 41% of the traders need adequate, timely and reliable market information in the study area. The result found that traders have better exposure to information than producers. This may be because the traders have better access to mobile phones and other means of getting market information. This is in line with the study of Ayelech (2011), who reported that traders have more privileged information access than producers.

Degree of market concentration

The concentration ratio for the coffee market was calculated by taking the annually purchased volume of coffee by market participants in quintals. The degree of market concentration was measured using the standard market concentration measure, the Concentration Ratio (CR4).

The result shows that the concentration ratio for coffee is 21.54%. This indicates that unconcentrated suppliers/traders/sellers characterized coffee markets in the districts. Following the market structure criteria suggested by Kohls and Uhl (2002), the coffee market showed a competitive nature of CR4 of 21.54%. The result does not coincide with Assefa (2009), who found out that the oligopolistic nature of the market is due to a limited number of traders.

Entry and exit barriers

The data shows no technical, financial, or institutional barriers regarding entry and exit. All fruit producers and traders can enter the market without any limitations. The same is true when they want to leave the market. Anyone who wants to engage in coffee marketing can enter the market without any problem. The concentration ratio results also ascertain this. Since the concentration ratio of all coffee shows the competitive nature of the coffee market in the area, the traders can enter and exit the market quickly. So, there are no entry and exit barriers in coffee marketing in the study area.

Market conduct

In this subsection, the conduct of producers and traders in the coffee market is presented and discussed in terms of price setting and payment terms.

Conduct of producers

Price setting

The survey result shows that 91.52% of the respondents indicated that fruit price was set by demand and supply interaction. This means that buyers and sellers negotiate and finally agree to exchange the products at the agreed-upon price. However, only in rare cases (7.48%) do the producers set the price. The selling strategy of the respondent farmers is open to any buyer. This is in line with Ayelech (2011), who stated that the more significant proportion of the price for coffee was set by demand and supply interaction, and the selling strategy of the respondent farmers was open to any buyer.

Terms of payment

The survey result shows that almost all producers in the study area practised cash in hand system. Out of the total respondents, 89% of the respondents received the price for their product as soon as they sold it, and the remaining 11% received the price on other days. In most cases, the producers in the study area practised cash in hand system, so they were not willing to take the price some days after they sold their product because they may use the money for their daily and other related problems. This is in line with the findings of Adugna (2009), who explained that a large proportion of the fruit producers practised cash in hand system and took the price as soon as they sold the fruits.

Conduct of traders

Price setting

The survey indicates that 85% of the price was set by demand and supply interaction via the negotiation of sellers and buyers, and the traders themselves set the remaining 15%. The result shows that most of the price was set by the demand and supply interaction of sellers and buyers, and the traders set the least amount. The result is in line with Adugna (2009), who found that a large proportion of the price for coffee was set by negotiation with farmers and traders, and traders set the least amount.

Terms of payment

The survey results show that 88% of the traders pay the price as soon as they buy the coffee, and the remaining 12% pay it the other day. This might be due to the competitive nature of the coffee market in the study area. Therefore, to compete with their competitors, the traders pay the price as soon as they buy the coffee, but in rare cases, they intend to pay the price another day.

Market performance of coffee

Table 1 presents the results of the marketing margin among different actors in different channels. It shows that farmers' share of the total consumer price was 100% in channels I, 90.5%, 89.23%, 87.35%, 91.26% and 91.13% in channels II, III, IV and IV and IV and V, respectively. Without considering channel-I (producers sell directly to consumers), the total gross marketing margin (TGMM) is the highest in channel IV, which is about 12.74% and lowest in channel VI which is about 8.65%. Producer's share (GMMp) is highest (91.35%) from the total consumers' price in channel VI and lowest in channel IV (87.26%). Retailers have a relatively higher marketing margin which is 27.5%whereas local collectors have a lower marketing margin of 11.05% in channel IV.

Determinants of the supply of coffee

In this section, the factors that influence the supply of coffee are presented and discussed. Multiple linear regression models were employed to analyze the factors that affect the supply of coffee. Before estimating the parameters, multicollinearity and heteroscedasticity detection tests were performed using appropriate test statistics.

The econometric result in Table 2 shows that five variables were found to be significant among the eleven hypothesized determinants of the market supply of coffee. These were the quantity of coffee produced, price of coffee, access to market information, access to extension service and distance from the market and age of the respondents. The coefficient of multiple determinations (R^2) was estimated at 0.84, and the adjusted R^2 value was 0.81. This means that 84% of the variation in the dependent variable is explained by the explanatory variables included in the model. Furthermore, the adjusted R^2 of 81%, which is significant, has further consolidated the model's goodness.

Age of the household head

The age of the household head directly affected the volume of coffee supplies to the market. It was significantly related to the age of the household head at a 10% significance level. The coefficient of the variable shows that as the age of the household head increases by one year, the amount of coffee supplied to the market rises by 0.010 quintals, *others things being constant*.

Table 1. Market performance of coffee in terms of marketing margin with respect to the share of actors in each channel

Actors	Price in birr	Ch1	Ch 2	Ch3	Ch4	Ch5	Ch6
Producer	Selling price	2012.50	1860	1856	1850	1850	1850
	Farmers share%	100	90.5	89.23	87.26	91.35	91.13
	TGMM%		9.5	10.77	12.74	8.65	8.87
Local collector	Selling price				2080	2025	2030
	Margin				230	175	180
	Marketing margin%				11.05	8.64	8.86
	TCMMa%				88.46	71.42	
Retailer	Selling price		2055		2120		
	Margin		195		40		
	Marketing margin%		9.48		27.5		
	TCMMr%		100		15.38		
Processor	Selling price			2080		2095	
	Margin			220		70	
	Marketing margin%			10.57		3.34	
	TCMMr%			100		100	
Final consumer price		2012.50	2055	2080	2120	2095	2030
TCMM			195	220	260	245	180

Source, Survey result (2016).

Quantity of coffee produced

The result in Table 2 shows that the quantity of coffee is significantly and positively related to the marketed supply of coffee at a 1% significance level. The value of the coefficient for the production of coffee implies that an increase in the production of coffee by one unit per hectare resulted in an increase in the farm-level marketable supply of coffee by 1.42 quintals, *ceteris paribus*. As the production of coffee increases, the farmers are going to supply more quantity of coffee to the market. The result coincides with Wolday (1994) and Rehima (2007), who identified that an increase in agricultural products positively and significantly influenced the market supply of commodities positively and significantly.

Price of coffee

The result in Table 2 shows that the price of coffee is significantly and positively related to the marketed supply of coffee at a 1% significance level.

As the price of coffee increases by one unit, the amount of coffee supplied to the market increases by 0.587qt, *ceteris paribus*. As the price of coffee increases in the market, farmers will supply more coffee to get a better price for the products. The result coincides with the findings of Wolelaw (2005), who stated that as the price for products in the market increases, there would be a higher supply of products.

Access to market information

As hypothesised, access to market information is positively related to the market supply of coffee at a 1% significance level. The result indicated that households with access to market information supply 0.05qt more coffee to the market than those without access to market information, *other things remaining constant*. Therefore, as the farmers have better access to market information, the probability of getting a better price for the product will increase, which in turn increases the supply of the coffee to the market. This is in line with Mohammed (2011), who found that access to market information is significantly and positively related to the marketable supply of products significantly and positively.

Table 2. Determinants of quantity of coffee supplied to the market

Variables	Coefficients	Std. Err.	t	p-value
Constant	-0.244	0.717	-0.310	0.734
Sex of household	0.110	0.162	0.68	0.495
Age of household (in years)	0.010*	0.006	1.78	0.078
Education level of household	0.011	0.078	0.134	0.893
Quantity produced in quintal	1.42 ***	0.016	1.230	0.000
Price of coffee	0.587***	0.013	3.58	0.001
Active family size	0.039	0.072	1.84	0.768
Years of experience	0.002	0.027	0.091	0.928
Access to market information	0.05**	0.029	1.01	0.000
Access to extension service	0.003**	0.002	2.521	0.024
Distance from the market	-0.019*	0.012	-1.83	0.070
Access to credit service	0.033	0.186	.178	0.895
R^2 0.84				
Adjusted R^2 0.81				

*, **, ***indicates significance at 10%, 5% and 1% respectively.

Extension service access

As hypothesised, access to extension is positively and significantly related to the marketed supply of coffee at a 5% significance level. On average, if a wheat producer got more extension contact, the amount of coffee supplied to the market increased by 0.003qt, *other things remaining constant*. This suggests that access to get extension service avails information regarding technology which improves production that affects the marketable supply. This might be because extension service enables the farmers to know better about how to get better production and creates farmers` awareness about new technologies. This is in line with the result of Yishak (2005), Rehima (2006), and Ayelech (2011), who found that if coffee producers get more extension service access, the marketable supply of each of the commodities will increase. Therefore, it is related significantly and positively to the supply of products to the market.

Distance from the market

Table 2 shows that distance from the market is significantly and negatively related to the marketed supply of coffee at a 10% significance level. An increase in distance by one kilometre indicates a decrease in the quantity of coffee supplied by 0.019qt, *with other things remaining constant*. As the distance from the production area to market place increases, the producers supply a lesser quantity of coffee. This is because of the nature of the product (i.e. perishability) and the costs related to transportation. This is in line with the findings of Bosena (2008), who explained that as the distance increased from the production area to the market, the quantity supplied to the market decreased.

Opportunities of the Woreda

Gibe is one of the naturally endowed *Woredas,* even if it has some production and marketing constraints. Some of the potentials to mention are the following. First, the *Woreda* is very suitable for producing

coffee, one of the dominant ones in the study area. On top of this, relatively fertile arable land and access to water potential are some to mention.The natural proximity to the woreda market and one of the private processors in the woreda were the opportunities that enhanced the level of commercialization.

The conducive government policy in general and exceptional attention to the district in particular as one of the development corridors, explained by the expansion of irrigation, deployment of extension workers in each *Tabias* based on their potential, and increased infrastructure facilities like mobile and electric power and all-weather roads could facilitate coffee production and marketing. Moreover, the ever-growing demands for commodities are the main incentives to increase the activities in the area. Agricultural marketing Promotion Agency that gives price information on coffee from significant marketplaces weekly is another opportunity for the district.

Challenges along the market chains

Some factors hinder the production and marketing of coffee in study areas. According to the sample respondents: - The overall activities created power imbalances among actors, which intermediaries primarily control, resulting in - priced outputs and discouraging the total production volume. Tradition ways of production and poor product handling, in turn, paved the way for accessing inequitable information where a large proportion of market power is captured by elite traders who favoured them to govern the markets. Shortage to access to formal credit is also one of the major setbacks which ultimately affected farm gate prices drastically.

A lack of market information problem was also reported by 58% of the sampled farmers. In the study area, village markets are linked with Woreda town by a poorly covered road that constrains buyers from coming to the market or farmers from taking coffee to the Woreda town market, where there are more buyers. The survey results show that 81% of the sampled respondents' lack of coffee drying materials influenced the producers' bargaining power.

Access to transportation and quality problem are also among the priority jeopardizes identified by coffee traders. Thus, most spoilage occurs at the level of packing into sacks, loading and transporting on the rough rural road. The absence of a specialized transportation facility has made coffee transport customary and compelled the transportation system to rely on a traditional system, just like transporting any other commodity on trucks.

Conclusion

The study was conducted at Gibe woreda to analyze the coffee market chain and investigating the factors that influence the supply of coffee. The actors who are participating in production and marketing services of coffee in the study area include producer, local collectors, retailers and consumers. Six marketing channels were identified for transaction of coffee and among the channels producer-retailer-consumer marketing channel shared the largest volume of transaction while producer-local collector-consumer marketing channel shared the least volume of each coffee in terms of transaction.

Coffee marketing in Gibe Woreda is characterized by having large number of buyers and sellers, free entry and exit and the majority of coffee price is set by demand and supply of the coffee in the market. The marketing structure of coffee in the study area is competitive market.

Moreover, the OLS result shows that infrastructural, institutional and household factors influenced the supply of coffee in the area. Infrastructural factor such as access to market affects the supply of each coffee negatively and significantly. Institutional factors such as access to extension affect the supply of coffee positively and significantly. Quantity produced and prices are positively and significantly related with the supply of coffee. Generally, the significant variables were consistence with priority expected sign.

The suitability of land, water access, existence of private processor, expansion of irrigation water, and attention of the government for development and enhancement of the product are one of the main

incentives to increase the activities in the area. The conducive government policy in general and special attention to the district in particular as one of the development corridor, explained by expansion of irrigation, deployment of extension workers in each *Tabias* based on their potential and an increased infrastructure facilities like mobile and, electric power and all weather roads could facilitate coffee production and marketing. The ever-growing demands for the commodities are the main incentives to increase the activities in the area. While, conventional methods of production, poor post product handling, lack to access to formal credit, lack of adequate timely market information, road accessibility, lack of coffee drying materials and quality problems were major challenges which affect the coffee market supply.

Recommendation

Based on the findings of this study, the following points were recommended to improve marketing chains of coffee so as to enhance its production, productivity and marketing in the study area.

Quantity of coffee produced is one of the determinant factors that affect volume of coffee supplied to the market positively and significantly. Therefore, concerned bodies should focus on increasing production and productivity of the coffee by supplying improved varieties of coffee for producers.

Distance from the market is a critical issue which affects the supply of coffee negatively and significantly. Therefore, the intervention of governmental and non-governmental organizations (NGO) is needed to improve the rural communities' infrastructure service in order to encourage the communities to exchange their products effectively and efficiently.

The result shows that the extension services significantly affect marketable supply of coffee. Hence, the existing agricultural extension approach and stakeholders' in the study areas should give better emphasis on practical demonstration and continuous training to acquire new idea in relation to coffee production improvement and marketing of coffee so as to help famers produce more and get the advantage of having the resource base sustainably.

References

Adugna G. 2009. Analysis of Fruit and Vegetable Market Chains in Alamata, Southern Zone of Tigray: The Case of Onion, Tomato and Papaya. An MSc Thesis Presented to the School of Graduate Studies of Haramaya University. 114p.

Assefa A. 2009, Market Chain Analysis of Honey Production in Atsbiwemerta district, Eastern zone of Tigray National State. A MSc Thesis presented to School of Graduate Studies of Haramaya University. 67-69p.

Ayelech T. 2011. Market Chain Analysis of Fruits in Gamma Woreda, Jimma Zone, Oromia National Regional State. An MSc Thesis Presented to the School of Graduate Studies of Haramaya University. **127**p.

Bezabih E. 2010. Market Assessment and Value Chain Analysis in Benishangul Gumuz Regional State, Ethiopia. Final Report, SID-Consult-Support Integrated Development, Addis Ababa.

Bosena T. 2008. Analysis of cotton marketing chains: the case of Metema Woreda, North Gondar Zone, Amhara National Regional State (Msc Thesis, Haramaya University).

FAO (Food and Agricultural Organization). 2003. FAO action program for the prevention of food loses. Milk and dairy products, post-harvest loses and food safety in subSaharan Africa and the near east. Regional approaches to national challenges. Synthesis report. ILRI, Nairobi, Kenya.

Girma 2000. A Participatory Aproach to Agroforestry in Watershed Management: A Case study at Yanessie, Southern Ethiopia. Unpublished MA thesis. University, Wageningen.

Green HW. 2003. Econometric Analysis: Fourth Edition. New York University Macmillan Publishing Company. Implications for development interventions Master thesis.

Green SB. 1991. How many subjects does it take to do a regression analysis. Multivariate Behavioral Research **26**, 499-510.

Guajirati DN. 2003. Basic of Econometrics, 4th edition. McGraw hill Company, IN. pp563-636

Gujarat D. 2004. Basic of Econometrics, Fourth-ed. McGraw hill Company, In. United States Military Academy, West Point.

Hair JF, Anderson RE, Tatham RL, Black WC. 1998. Multivariate Data Analysis, (Fifth edition), New Jersey: Prentice Hall, Inc.

ICO (International Coffee Organization). 2014. World coffee trade (1963-2013): A review of markets, challenges and opportunities facing the sector. ICC 112th session, 3-7 March 2014, London, United Kingdom. **29**p.

International Coffee Organization. 2014. Development Strategy for Coffee. London, ICO - ICC, p. **24**.

Kohl RL, Uhl JN. 2002, marketing of Agricultural Product, 9th Edition, Prentice-Hall of India PLC, New Delhi.

Labouisse JP, Bayetta B, Surendra K, Benoit B. 2008. Current status of coffee (*Coffea arabica* L.) genetic resources in Ethiopia: Implications for conservation. Gene. Res. Crop Evol. **5**, 5079. https://doi.org/10.1007/s10722-008-9361-7

Minten B, Mekdim D, Ermias E, Tadesse K. 2014. Structure and performance of Ethiopia's coffee export sector. Working Paper 66, Addis Ababa, Ethiopia.

Urgessa M. 2011. Market chain analysis of teff and wheat Production in Halaba special woreda, southern Ethiopia. An MSc Thesis Presented to School of Graduate Studies of Haramaya University. pp 45-120.

Gebre-ab N. 2006. Commercialization of smallholder Agriculture in Ethiopia. Ethiopia Development Research Institute, notes and papers series No.**3**.

Petit N. 2007. Ethiopia's coffee sector: A bitter or better Future. J. Agrarian Change **7(2)**, 225–263.

Rehima M. 2007. Analysis of red pepper Marketing: The case of Alaba and Silitie in SNNPRS of Ethiopia. A M.Sc. Thesis presented to School of Graduate Studies of Haramaya University.**96-95**p.

Wolday A. 1994. Food grain marketing development in Ethiopia after the reform of 1990: A Case Study of Alaba Siro district, Ethiopia. **292**p.

Woldemichael S. 2008. Dairy Marketing Chains Analysis: The Case of Shashemane, Hawassa and Dale District's Milk Shed, Souhern Ethiopia. MSc Thesis, Haramaya University, Ethiopia

Wolelaw S. 2005. Factors Determining Supply of Rice: A Study in Fogera District of Ethiopia. MSc. Thesis Presented to the School of Graduate Studies of Haramaya University.**90**p.

Yishak G. 2005. Determinants of Adoption of improved Maize Technology in Damote Gale Woreda, Wolaita, Ethiopia. Msc.Thesis (Unpublished) Presented to School of Graduate Study of Alemaya University.

Zekarias S, Kaba U, Zerihun K. 2012. Analysis of market chains of forest coffee in southwest Ethiopia. Acad. J. Plant Sci. **5(2)**, 28–39. https://doi.org/10.5829/idosi.ajps.2012.5.2.2748