Honey Market Outlet Choices of Producers in Abe Dongoro District of Oromia National Regional State, Ethiopia

Amente Negussa
MSc in Agricultural Economics, Department of Agricultural Economics, College of Agriculture and Natural Resource, Assosa University, P.O. Box 018, Assosa, Ethiopia
E-Mail: amentnug@gmail.com; Tel: +251- 916 – 051- 054

This study was initiated to Honey market outlets choice of producers in Abe Dongoro District of Oromia National Regional State, Ethiopia. The focus of the study was to assess factors affecting honey market outlets choice in the study area. The data was supplemented by primary and secondary sources. The binary logit model was applied to estimate the effects of explanatory variables on market outlets choices of honey producers. There are two market outlets choice of honey for producers. The first market outlets choice was the farmers sell their honey product at farm gate. The second market outlets choice was when farmers sell their honey product at market place with slight price differences from the first market outlets. The result obtained from this analysis indicate that volume of honey produced, distance to the market, average price of honey 2014/2015, and market information were found to be the most important significant variables influencing honey marketing outlet choice in the district. Therefore, providing extension services to improve volume of honey produced, improving transportation facilities and strengthening the vertical and horizontal linkages among the marketing chain actors are recommended to develop strengthen information on honey product marketing in the study area.

Key words: Honey, logit model, marketing outlet choices.

INTRODUCTION

Background and Justification

Agriculture is the mainstay of Ethiopian economy, accounting for about 43% of the GDP, 80% of employment and 90% of the export (MoFED, 2011). Beekeeping is one of the agricultural sectors and is best suited to extensive range of ecosystems of tropical Africa (Ayalew, 2001). Ethiopia is the largest honey producer in Africa and 10th largest honey producer of all over the world. Honey is one of a high valued agricultural commodity and is an important source of income for small-holder farmers in Ethiopia. It also plays an important role in the cultural and religious life of the people and has long been valued for its medicinal uses. Hence, commercial honey producing has advantages to improve the farmer’s income (Dayanandan, 2014).

The contribution of beekeeping to supporting natural processes, for example cross pollination, is enormous; beekeeping therefore integrates well with agricultural activities through enhancing productivity of other crops. This function promotes the establishment of other income generating activities that can be supported by beekeeping for example cultivation of high value horticulture and agricultural crops. In addition to these, beekeeping is not a capital-intensive business enterprise but has potential to yield income thus increasing its potential as a major income generating activity for marginalized communities. That it is a low-skill activity that can be practiced by men, women, youth, the elderly and persons with physical disabilities makes it a crucial avenue towards poverty reduction and enhancing the quality of life across the social spectrum (SNV, 2009).

Of all African countries no country has longer tradition of beekeeping than Ethiopia. Ethiopia is the largest honey producer in Africa and 10th largest honey producer all over the world. Honey is one of a high valued agricultural commodity and is an important source of income for small holder farmers in Ethiopia. It also plays a major role in the cultural and religious life of the people and has long been valued for its medicinal uses. Hence, commercial honey producing has advantages to improve the farmer’s income (Dayanandan, 2015).
The total estimate of honey production for Ethiopia is about 54,000MT per year. Although thousands of tons of honey are produced every year it is usually poorly managed and unattractive in appearance. Out of the total honey produced roughly 70% is utilized for brewing 'tej' (honey wine) with the balance being sold either as table honey or in other forms. The entire honey production in the country is mainly for marketing and more of the honey produced is sold by rich, middle income and poor households (Edessa, 2005, as cited in Dayanandan, 2015).

Though honey production has huge potential, still traditional low productive system has been observed. Further, market outlets choices for honey in Ethiopia are not well developed, mainly due to poor market infrastructure and information. Almost all of the honey that is produced in Ethiopia is consumed in the domestic market, with only about 2% of the total yearly production being exported (CSA, 2011).

Honey value chain in our country generally needs fundamental change in its structure and functioning systems, to address the accessibility of the better price market for the producers and better-quality honey for fair price to the consumers. The legality issue in the honey market also needs systematic consideration to fight against problems like smuggling and adulteration so that the country can benefit from the expanding export market (Legesse, 2013).

A study conducted by SNV (2005) shows that Oromia regional state produces about 41% of total national honey production followed by Southern Nations Nationalities and Peoples Republic and Amhara regions contributing about 22% and 21% of the national production respectively. Abe Dongoro district, blessed with natural forest, is producing huge amount of honey than other districts of Horo Guduru Wollega zone; Oromia national regional state (DOARD, 2015).

**Statement of the Problem**

Ethiopia has a lot of opportunities for producing honey. However, this potential has not been used effectively due to different several reasons. According to Edessa (2005), as cited by Dayanandan (2014), lack of skilled manpower, level of technology used, high price of improved beekeeping technology, poor extension services and in adequate research institutions to address the problem are the major constraints in beekeeping sub sector.

Honey marketing in Abe Dongoro district suffers from unfavorable marketing of the product often results in a much lower value of honey in the district. No studies have been carried out to analyze marketing outlet choices and no remedial measures were taken so far in Abe dongoro district on honey marketing participants and their roles along the marketing choices of producers. Honey market outlet choices analysis so is supposed to be the current approach working in marketing problems. Furthermore, Analysis of honey marketing choices in terms of different marketing participants and their roles comes up with precise possible solution. This study is therefore, designed to analyze the existing market outlet choices and identify factors influencing farmers marketing choices in the study area.

**Objectives of the Study**

The overall objective of the study was to examine factors affecting honey market outlet choice of producers in Abe Dongoro district.

The specific objectives of study were to:
1. Identify the major honey marketing participants and their roles in the study area
2. Analyze factors affecting honey market outlets choice in the study area

**MATERIALS AND METHODS**

**Description of the Study Area**

This study was undertaken in Abe Dongoro district of Horo Guduru Wollega zone, Oromia National regional state, Ethiopia. The district is composed of 24 rural and 1 urban kebeles. It is located about 362km north western of Addis Ababa and 47km north western of Shambu town, the capital of Horo Guduru Wollega Zone (DOARD, 2015).

The district has total population of about 79,417 of which 34,887 are females. About 25%, 60% and 15% of the total population were young, economically active and old age, respectively. Average family sizes for the district is 6 persons per household (DOARD, 2015).

Lowland (86.33%) and midland (13.67%) agro-ecological zones characterize the district’s climate. The annual rainfall of the district ranges from 1750mm–2750mm and temperature ranging from 12 to 32°C. The district has altitude of 1300 to 2800 above sea level.

The main rainy season in the district is from April to end of September. The economy of the district is mainly dominated by traditional cash crop farming and major crops produced in the district include honey, coffee, sesame, groundnut, haricot beans and maize. This district is the first in producing honey than all the ten districts because it is blessed by natural forest which is available for beekeeping activities (DOARD, 2015).

**Sampling Design**

This study used multi-stage sampling techniques. At the first stage Abe Donoro District was selected purposively based on its honey production potential. At the second stage three kebeles (2 from lowland and 1 from midland) were randomly selected from the two agro-ecologies to represent the district. Sample size in each kebele was determined based on proportion to size of the households.
The sample size was determined using a simplified formula provided by Yamane (1967) as follow:

\[ n = \frac{N}{1 + Ne^2} \]  

**Where:**
- \( n \) – Sample honey producer households
- \( N \) – Total number of honey producer households in the three kebeles
- \( e \) – Level of precision.

**Table 1: Honey producer households and respondents**

<table>
<thead>
<tr>
<th>SN</th>
<th>Study area</th>
<th>Selected kebeles</th>
<th>Total honey producer households (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Abe</td>
<td>1. Tulu Moti</td>
<td>275 n = 47</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Gorite</td>
<td>172 n = 30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Wirtu Senta</td>
<td>266 n = 45</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>Total = 713 n = 122</td>
</tr>
</tbody>
</table>

Source: Own survey, 2015.

**Method of Data Collection**

Both primary and secondary data sources were used. The primary data was collected through questionnaires, individual interview and organizing group discussion. The data was focused on factors affecting honey market outlets choice and identifying major honey marketing participants and their roles in the study area. Focused group discussions and key informant interview were held with honey producer farmers. Secondary data were collected from different institutions, organizations and offices as well as through reviewing documents and publications.

**Method of Data Analysis**

The collected data were analyzed using both descriptive statistics and econometric model.

**Descriptive Statistics**

The study was employed descriptive statistics such as percentages, means, and table of frequency, mean, etc.

**The Econometric Model**

The binary logit model was applied to analyze factors affecting honey market outlets choice in the study area by applying both SPSS Version 20 and Stata Version 12.0 software’s.

The market outlet choices of producers (dependent variable) obtained two values:

- \( P = 0 \): if producers sell their honey product at farm gate
- \( P = 1 \): if producers sell their honey product to market

Linear form of the logit function is given as:

\[
\ln \left( \frac{p}{1-p} \right) = \beta_0 + \alpha_1 X_1 + \alpha_2 X_2 + \ldots + \alpha_i X_i + \beta_1 D_1 + \beta_2 D_2 + \ldots + \beta_k D_k + \varepsilon
\]

**RESULTS AND DISCUSSION**

**Descriptive Statistics**

**Demographic Characteristics**

Of the total sample respondents (122) handled during the survey period, 86.07% were male-headed households and 13.93% were female-headed in the study areas. Average household heads age was 43.14 years. The average family size of the total sample respondents was found to be 5.45. The average years of farming experience related to honey production was 13.12 years.

**Means of livelihood**

Abe Dongoro District farmers depend on different means of income generation strategies where coffee and honey production were major sources of cash income for the majority of the producers. About 33.61% and 31.97% of the respondents earned their living from coffee and honey production as a primary source of income generation. Similarly, coffee trading (12.5%) and honey trading (10.66%) were the principal income generations followed by others (6.56%) like sesame and ground nut production. Moreover, 4.92% of the respondents participate in combination of all.
Table 3: Major means of income generation of the respondents

<table>
<thead>
<tr>
<th>Major means of income generation</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee production</td>
<td>41</td>
<td>33.61</td>
</tr>
<tr>
<td>Honey production</td>
<td>39</td>
<td>31.97</td>
</tr>
<tr>
<td>Coffee trading</td>
<td>15</td>
<td>12.30</td>
</tr>
<tr>
<td>Honey trading</td>
<td>13</td>
<td>10.66</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
<td>6.56</td>
</tr>
<tr>
<td>Combination of all</td>
<td>6</td>
<td>4.92</td>
</tr>
<tr>
<td>Total</td>
<td>122</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Own computation from survey result, 2015

Market Outlet Choices of Honey in the Study Area

As identified in the study, there are two market outlet choice of honey for producers. These choices occur when farmers sell their honey product at farm gate and/or at market place. The possible choices of honey marketing in the study area indicates that producers sold about 81.97% at farm and the rest 18.03% of honey carried to the market. This may be due to lack of transportation facilities; absence licensed marketing participants of honey product etc. in the study area. Therefore, marketing channel of the study area is traditional and inefficient way of market honey product market.

Table 4: Possible choices of honey marketing in the study area

<table>
<thead>
<tr>
<th>Choices of honey marketing</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honey sold at farm gate</td>
<td>100</td>
<td>81.97</td>
</tr>
<tr>
<td>Honey carried to the market</td>
<td>22</td>
<td>18.03</td>
</tr>
</tbody>
</table>

Source: Survey result, 2015

Honey Marketing Participants and their Roles

Though good volume and quality of honey is produced unless it is sold properly, the farmers may not be benefited. This section describes different actors of honey Market chain such as Primary actors (producers, honey collectors, whole sellers, retailers, tej houses and consumers) and supporting actors (Training and Extension Services, financial services) and their roles in increasing the marketing efficiency of honey product.

Producers/farmers

Producers are small scale farmers and they sell their honey products to different buyers or participants of honey market. As the survey results show that farmers used to sell their products directly or indirectly different parties such as final consumers, honey collectors. According to the sample respondents, in the production year 2014/15, producers sold about 17.21% of their honey products to consumers because most of the districts farmers (31.97%) are honey producing farmers next to (33.61%) coffee production (Table 5). The other purchasers were 82.79% honey collectors as they by themselves buys honey from the producers at their home with the minimum price difference between price at home and at market place. This indicates that there are many mediators between farmers and consumers however two market outlet choices. In addition, farmers do not experience bee wax extraction at all rather than selling the crude honey. If producers extract the bee wax and link to the market, it is possible to increase the income of the farmers easily.

Honey Collectors

The honey collectors purchase the honey directly from farmers at their home or in the small village markets for resell to other retailers and consumers who come from different parts of the district at the district market center. They are small and fragmented participants but they play significant role in collecting and supplying honey to the market. Even though their role enables farmers to reduce the cost of transportation and other market related costs, they purchase honey from farmers with low price as compared to consumers. Honey collectors receive the product from the farmers with the average price of Birr 43.08 per kg (Table 10).

Whole Sellers

They are bulky purchasers as compared to other agents of the market from the farmers or from the retailers and from honey collectors and distribute honey product to other retailers, traditional processors and final consumers. There are no such actors of honey product in the study area.

Retailers

Retailers are the participants involved in the selling of honey product to ultimate consumers. There are few retailers who divide large-amount of produce and sell it to consumers in small units. These are the final agents in the channel that delivered honey to end users. The majority of retailers found at the district center, having their own retail shops.

Processors

Processors are traditional private units and they purchase honey from different marketing participants like farmers, honey collectors, whole sellers and retailers. Then they prepare traditional drink so called tej for local consumption only. There are no other private enterprises those process honey product for national market rather than traditional consumption in the area.

Consumers

They are the end users of honey product through purchasing from different marketing agents. In the study area, honey consumed in two ways i.e. crude honey consumption and tej consumption. As discussed above, 17.21% of honey sold to the final consumers.
### Econometric Results

**Influences of factors on the choices of honey market outlet choices**

Honey is produced mainly for market and is one of the most important cash commodities for Abe Dongoro district farmers. Several variables are hypothesized to determine honey market outlet choices of producer farmers. The effects of explanatory variables on market outlet choices of producers (dependent variable) were identified. The marginal effects of \( X_i \) on \( P \) were measured by taking partial derivative of \( P \) with respect to \( X_i \). Estimated values of the coefficients and results of the binary logit model are presented in Table 6.

#### The effect of significant variables on marketing outlet choices

Assumption: \( \beta_1, \ldots, \beta_5 \) were coefficients of qualitative variables in the model. \( \text{Exp}(\beta) \) of extension crevices dummy variable was 1.092 \((e^{0.088} = 2.718^{0.088})\) implied that the number of producers who got extension service was greater than that of female producers by 1.092 times. \( \text{Exp}(\beta) \) of market information which is was 1.002 \((e^{0.002} = 2.718^{0.002})\) implied that the number of producers who got extension service was greater than that of female producers by 1.002 times. \( \text{Exp}(\beta) \) of gender which is was 3.678 \((e^{1.302} = 2.718^{1.302})\) implied that the number of male producers was greater than that of female producers by 3.678 times. \( \text{Exp}(\beta) \) of lack of equipment was 7.154 \((e^{1.968} = 2.718^{1.968})\) implied that the number of producers who lacked equipment was greater than producers that have enough equipment by 7.154 times.

In the model, variables (Volume of honey, age, education level, labor, producers’ experience in honey producing, gender, market information and lack of equipment) were not significant (Table 6).

Assumption: \( \alpha_1, \ldots, \alpha_7 \) were coefficients of quantitative variables in the model.

In terms of quantitative variables, we could measure the expected values by:

\[
\frac{\partial P}{\partial X_i} = \{\text{Exp}(X_i, \alpha)\}/(1 + \text{Exp}(X_i, \alpha))\]. \( \alpha_i \) Let \( \text{Exp}(X_i, \alpha) = a \), we have:

\[
\frac{\partial P}{\partial X_i} = [a/(1 + a)]\]. \( \alpha_i \)

- The effect of volume of honey \((X_1)\) on marketing channel choices

\[
\frac{\partial P}{\partial X_1} = [a/(1 + a)]\]. \( \alpha_1 = [0.999/(1 + 0.999)](-0.001) = -0.00025 = -0.025\% \text{ implied that if the volume of honey increases by 1 unit, then the probability of producers selling to local collectors decreases by 0.00025\%, ceteris paribus. Because of excess supply of honey product and no price difference between fresh and stored honey at a time interval, producers have to sell honey as soon as possible (Table 6).}

- The effect of Proximity to Market \((X_2)\) on marketing channel choices

\[
\frac{\partial P}{\partial X_2} = [a/(1 + a)]\]. \( \alpha_2 = [0.906/(1 + 0.906)](-0.908) = -0.2264 = -22.64\% \text{ implied that the closer to the market by the lesser would be the transportation cost and opportunity time spent so that it makes easy access to essential inputs influencing market surplus of honey. Therefore, the closer market channels to the producers by 1km then 22.64\% of the producer prefer to sell their honey product to the market (Table 6).}

- The effect of age variable \((X_3)\) on marketing channel choices

\[
\frac{\partial P}{\partial X_3} = [a/(1 + a)]\]. \( \alpha_3 = [1.013/(1 + 1.013)](0.013) = 0.0033 = 0.33\% \text{ implied that if the age honey producers increases by 1 unit, then the probability of producers selling their honey product to local collectors increases by 0.33\%, ceteris paribus (Table 6).}

- The effect of price variable \((X_4)\) on marketing channel choices

\[
\frac{\partial P}{\partial X_4} = [a/(1 + a)]\]. \( \alpha_4 = [1.3/(1 + 1.300)](0.262) = 0.0644 = 6.44\% \text{ implied that if the price honey increases by 1 unit, then the probability of producers selling to local collectors increases by 6.44\%, ceteris paribus. Because of the increase in price, producers prefer to sell to local collectors to reduce transportation cost, save time, and gain higher profits (Table 6).}

- The effect of education variable \((X_5)\) on marketing channel choices

\[
\frac{\partial P}{\partial X_5} = [a/(1 + a)]\]. \( \alpha_5 = [0.985/(1 + 0.985)](-0.15) = -0.017 = -1.7\% \text{ implied that if the education level of the producer increases by 1 more class, then the probability of producers selling to local collectors decreases by 1.7\%, ceteris paribus. Because producers want to maximize their profit by finding the equilibrium point for the market price (Table 6).}

- The effect of labor variable \((X_6)\) on marketing channel choices

\[
\frac{\partial P}{\partial X_6} = [a/(1 + a)]\]. \( \alpha_6 = [1.150/(1 + 1.150)](0.140) = 0.03483 = 3.48\% \text{ implied that if the number of the producer
increases by 1 unit, then the probability of producers selling to local collectors increases by 3.4%, ceteris paribus, because if the number of producers it results excess volume of honey product in the market (Table 6).

- The effect of experience variable (X7) on marketing channel choices

\[
dP/dX_7 = [a/(1 + a)^2] \cdot \alpha_7 = [1.092/(1 + 1.092)^2](0.088) = 0.022 = 2.2\% \text{ implied that if the producers experience increases by 1 year, then the probability of producers selling to local collectors increases by 2.2%, ceteris paribus (Table 6).}
\]

### CONCLUSIONS AND RECOMMENDATIONS

#### Conclusions

Farmers of Abe Dongoro district which is blessed with natural forests have long lasted experience of honey producing and the indigenous practices of honey marketing. However, farmers still use traditional system of honey production and informal way of marketing system. Honey marketing participants were producers/farmers, honey collectors, retailers, processors and final consumers of the product. There were only two market outlet choices of honey for producers in the district. The factors volume of honey produced, distance from the market, average price and market information affects honey market outlet choices in the study area. Therefore, taking actions that can minimize the identified bottlenecking factors affecting honey market outlet choices in the study area is necessary.

#### Recommendations

Based on the findings of the study, the following recommendations are forwarded.

- It was found that volume of honey production in the study area is not sufficient enough for marketing purpose as required. This problem tends to narrow the marketing outlet choice of honey producers. Having a confined potential to produce more, there is a chance to increase volume without additional investment only by improving type of bee hive used by the farmers. The farmers should play vital role in increasing volume of honey product in the study area.

- The study revealed that lack of infrastructure thereby distances of the market from farmers influence the market outlet choices of producers. Therefore, government and other concerned bodies are recommended to improve basic infrastructure for farmers so that they can take their honey product to the market through available transport services.

- Average price of honey product and lack of market information are identified as factors affecting marketing outlet choices of honey products. To solve honey market information problem institutions specially marketing departments are recommended to strengthen the vertical and horizontal linkages among the marketing participants, if it is required to sell honey product by fair price at the place where farmers wish.

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