

HONEY BEE PRODUCTS MARKETING PRACTICES: CHALLENGES AND OPPORTUNITIES IN AND AROUND MAKSEGNIT TOWN, AMHARA REGION, ETHIOPIA

ABSTRACT

The study was conducted in Amhara region Maksegnit town north Gondar Ethiopia with the objective of investigating honey bee products marketing practice; opportunities and constraints. The data was collected from 40 households from four PAs by using pretested semi structure questionnaire. The collected data revealed that the major products of honey bee are honey (67.5%) and the rest (32.5%) colony itself. The major reason of keeping bees in the study area is for income source. The value obtained by ranking index revealed that middlemen, tej (a mead or honey wine) houses and retailer are the three major honey buyers with the index values of 0.30, 0.24 and 0.21, respectively. The price of honey is majorly governed by quality and color of the honey with index values of 0.4 and 0.3, respectively. The highest and the lowest price of honey in the study area was found to be  $133.50 \pm 6.222$  and  $69.25 \pm 12.483$  Ethiopian birr (ETB) for white and black honey, respectively. Lack of road, lack of materials for measuring the quantity of honey and the variation in the color of the honey were found to be the three major constraints of honey marketing with the index value of 0.16 of 0.143 and 0.141, respectively. The major challenge for marketing of bee colony is unavailability of organized marketing place. The increment in number of unemployed youth, increment in price of honey and colony and the high demand of honey and colony in the area are the three major opportunities available to be engaged in beekeeping sector in the study area. To alleviate challenges of bee product and colony marketing, the government should provide important inputs and awareness should be created for the farmers.

**Key words:** Bee product marketing, Challenges, Colony, Opportunities.

29 **INTRODCTION**

30 Ethiopia is a leading honey producer in Africa and one of the ten largest honey producing  
31 countries in the world. Beekeeping contributes to peoples' livelihoods in almost every country in  
32 the world. Particularly in developing countries, small-scale beekeeping contributes significantly  
33 to the livelihood security by producing honey and accessing it into market (FAO, 2009). The  
34 beekeeping sector is also an integral part of agriculture in Ethiopia. It is contributing to the  
35 household food security and national economy through export.

36  
37 Beekeeping is valued environment friendly agricultural activity. It produces mainly natural  
38 honey and its associated by-products - beeswax, royal jelly and pollen. Honey is one of the  
39 products of beekeeping which has nutritional and medicinal value. It is a useful source of high-  
40 carbohydrate food. According to Kumar and Debjit (2010) a 100mililitre of honey contains about  
41 300 to 320 calories. Honey also contains anti-bacterial, anti-inflammatory and anti-oxidant  
42 properties that may be beneficial for combating multi-drug resistant bacteria as well as for  
43 preventing chronic inflammatory processes, such as atherosclerosis and diabetes mellitus  
44 (Natalia.et al. 2014). Due to its wide climatic and edaphic variability, Ethiopia is a home to some  
45 of the most diverse flora and fauna in Africa that provide surplus nectar and pollen source to  
46 foraging bee colonies (Girma, 1998). This assisted to exist more than 12 million honey bee  
47 colonies in the country (Gezahegn, 2001). Despite the favorable agro ecology for honey  
48 production and the number of bee colonies the country is endowed with, the level of honey  
49 production and productivity in the country is remain low. Ethiopia has the potential to produce  
50 500,000 tons of honey per year and 50,000 tons of beeswax per annum, but currently production  
51 is limited to 43,000 tons of honey and 3,000 tons of beeswax (MoARD, 2009).

52 The major honey and beeswax producing regions in Ethiopia are Oromia (41%), Southern  
53 Nations Nationalities, and Peoples' Region (SNNPR) (22%), Amhara (21%) and Tigray (5%)  
54 however, the country is suffering from the ecological degradation of its natural resources and this  
55 means the basis for any honey production is threatened and affected. in many regions of the  
56 country, beekeeping is considered as one of the income-generating activities for resource-poor  
57 farmers including women, youth and the unemployed sectors of the community (CSA,2011).

58 Ethiopia produces about 43,373 metric tons of crude honey per year, thus shares 23.5% of Africa  
59 and 2.35% of the world's honey production. This makes the country rank 1<sup>st</sup> in Africa and 10<sup>th</sup> in  
60 the world (AMP, 2007). Despite the long tradition of beekeeping in Ethiopia, having the highest  
61 bee density and being the leading honey producer as well as one of the largest beeswax exporting  
62 countries in Africa, the share of the sub-sector in the Gross Domestic Product (GDP) has never  
63 been commensurate with the huge numbers of honeybee colonies and the country's potentiality  
64 for beekeeping. Productivity has always been low, leading to low utilization of hive products  
65 domestically, and relatively low export earnings. Thus, the beekeepers in particular and the  
66 country in general are not benefiting from the sub sector (Nuru, 2002).

67 North West part of the Amhara region is believed to have diversified type of vegetation and  
68 cultivated crops and potential for beekeeping activities. In north Gondar zone large proportion of  
69 inaccessible lands for agriculture are covered with various types of trees, shrubs, bushes, and  
70 field flowers that make this part of the regions still potential for beekeeping. This could be great  
71 opportunity to tackle food insecurity through beekeeping. However, it requires making efforts to  
72 address some of the major problems of honey bee product marketing and opportunities and to  
73 keep it productive and profitable in the sustainable way. Therefore this research was aimed at  
74 investigating honey bee products marketing practices: challenges and opportunities to generate  
75 baseline information for further research and policy makers.

## 76 MATERIAL AND METHODS

### 77 Descriptions of the Area

78 The study was conducted in Gondar Zaria District (Maksegnit town) in North Gondar Zone,  
79 Amhara National Regional State of Ethiopia. The District is located at 37° 24' 24' 'E - 37° 45' 43'  
80 'E and 12° 7' 23' 'N - 12° 39' 24' 'N and its estimated total area is 1286.76 km<sup>2</sup>. Being part of the  
81 North Gondar Zone, it is bordered to the South by Libo Kemkem District of South Gondar Zone,  
82 to the Southwest by Lake Tana, to the West by Dembiya, to the North by Lay Armachiho, to the  
83 Northeast by Wegera, and to the Southeast by Belessa districts. Gondar Zuria District is located  
84 at about 1107 - 3022 meters above sea level, and falls in to two agro-ecological zones. The two  
85 agro-ecology zones, Weynadega (1500-2300 m.a.s.l) and Dega (2300-3200 m.a.s.l.) constitute  
86 the largest area coverage. In the District, temperature ranges between 14 – 20 °C with the mean

87 annual temperature of 17.9 °C. Rainfall ranges between 1030 - 1223 mm with the mean annual  
88 of 1100 mm.



95

96 Figure 1. Map of Amhara Region, Maksegnit town.

### 97 Study Design

98 For this study cross sectional design was used, and it was conducted starting from February up to  
99 June 2018.

### 100 Sampling size and Sampling Techniques

101 The study was conducted in beekeeping potential around Gondar Zuria district in Maksegnit  
102 town of the Amhara region. To conduct this research, multistage stage sampling techniques was  
103 utilized. Prior to the actual survey, information was gathered from primary data and informal  
104 survey from key informants. Based on the information obtained from primary data and informal  
105 survey study Peasant Associations (PAs) were selected purposively. Selection was based on  
106 accessibility of road and honey bee population in the study area. Accordingly, a total of four  
107 PAs namely Seguj, Jayra, Tsiyon, Chichaye were selected for this study. From each PAs, 10  
108 respondents with a total of 40 household's was randomly selected after identifying beekeepers  
109 purposively.

110 **Data Sources and Data Collection Method**

111 Both Primary and secondary data was collected. The primary data was gathered by using  
112 questionnaires, focus group discussions, and direct observation. Whereas secondary sources of  
113 data was collected from previous reports of agricultural office of the district. The secondary data  
114 was also collected from previous documents, internet, published books. Semi-structured  
115 questionnaire interviews was developed to discover demographic characteristics, honey bee  
116 products acquisition and reasons for keeping them (including, income from honey bee products  
117 and use), major constraints and opportunities of honey bee products in the study area.

118 **Data Analysis**

119 Depending on the type of information collected different analysis methods was applied. Data  
120 collections were organized, summarized and analyzed used SPSS statistical package (SPSS 20).  
121 Descriptive statistics such as mean, percentages, standard deviation was used during analysis and  
122 it was presented by using tables and graphs.

123 Rank of Responses were calculated based on the following formula.

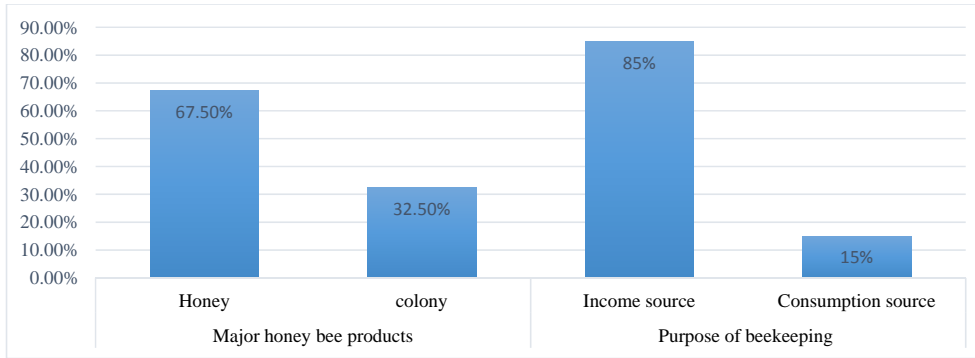
124 Index = sum of [The last rank \* respondents in rank 1 + the second rank from the last \*  
125 respondents in rank 2 ... will continue as per the rank level + 1 \* respondents in the last rank] for  
126 particular purpose divided by sum of [The last rank \* respondents in rank 1 + the second rank  
127 from the last \* respondents in rank 2 ....will continue as per the rank level + 1 \* respondents the  
128 last rank] for all purpose.

129 **RESULT AND DISCUSSION**

130 **Purpose of keeping Bee colony and Major Honey Bee Products**

131 The Major honey bee products and purposes of keeping honey bee in the study area is presented  
132 in Figure 2. The major purpose of beekeeping in the study area is for cash income and the  
133 majority (67.5 %) of respondents revealed that honey is first bee product in the study area. Other  
134 finding in the region also indicated that income source and consumption are the two major  
135 purpose of keeping bees in Amhara region and in Gamo Gofa Zones of Southern Ethiopia  
136 (CACC 2003; Keralem, 2005; Yemane and Taye 2013). The majority (45 %) of households

137 starts of beekeeping by catching swarms. In line with this research, honey (97.5 %), and bee  
 138 colony (46.7 %) are the major bee products in Burie district (Tessega, 2014).



139  
 140 Figure 2. Major honey bee products and purpose of production

141 **Marketing system of honey**

142 **Customers of honey in the study area**

143 A customer of honey in the study area is presented in Table 1. Beekeepers of the study area  
 144 produce honey for income source and for consumption and sell their produced honey at original  
 145 market places and have different costumers. In the study area, honey is transported to the market  
 146 more of by human labor due to lack of road access. The major customers of honey in the study  
 147 area are middlemen, tej (a mead or honey wine) house and retailer with the index value of 0.30,  
 148 0.24 and 0.21, respectively. In line with this finding the major customer of honey **major**  
 149 **customer of honey** in Burie districts are tej houses (Tessega, 2014).

150 Table 1. Customers of honey in the study area.

Customers	Sample of respondents n=40					weight	index	rank
	1 <sup>st</sup> rank	2 <sup>nd</sup> rank	3 <sup>rd</sup> rank	4 <sup>th</sup> rank	5 <sup>th</sup> rank			
Tej house	6(15)	14(35)	17(42.5)	3(7.5)	0(0)	143	0.24	2
Middlemen	25(62.5)	11(27.5)	4(10)	0(0)	0(0)	181	0.30	1
Wholesaler	2(5)	15(37.5)	9(22.5)	12(30)	2(5)	123	0.09	5
Retailer	0(0)	1(2.5)	2(5)	6(15)	31(77.5)	53	0.21	3
consumer	6(15)	0(0)	8(20)	19(47.5)	7(17.5)	99	0.17	4
Total weight				599				

Comment [H1]: Justify column & numbers below

151 Values in bracket are percentages

152 **Factors that govern the price of honey**

153 The factor which govern the price of honey is presented in Table 2. The survey results indicates  
 154 that the marketing system or the price of honey is affected by different variables. Among many  
 155 factors, the first is quality of honey, followed by color of and taste of honey and season of honey  
 156 production with the index value of 0.40, 0.30, and 0.18, respectively. In line with this finding  
 157 color and test of honey and season of honey are found to be the major factors that govern the  
 158 price of honey in Gamo Gofa Zones of Southern Ethiopia (Yemane and Taye 2013). According  
 159 to the survey, the price of honey in the study area is subjected to price fluctuation with the  
 160 highest price in the dry seasons, especially during the wedding time from January to April and in  
 161 wet seasons from June to August, the period when there is no honey production. The lowest price  
 162 is during honey harvesting season from October to December and June to August. In agreement  
 163 with this, beekeepers sell the largest proportion of their honey during harvesting season at low  
 164 price mainly to meet their demand for cash to pay taxes, debts and other social obligation in  
 165 Burie district of Amhara Region (Tessega, 2014). The highest price of honey in the study area  
 166 was  $133.50 \pm 6.222$  for white honey while the lowest was  $69.25 \pm 12.48$  ETB for black honey  
 167 Table 3. The price of honey in the study area was found to be very high compared to the  
 168 study conducted in Burie district (Tessega, 2014) and Gamo Gofa Zones of Southern Ethiopia  
 169 (Yemane and Taye 2013). On the other hand the price of one bee colony ranged from 600.00 to  
 170 1000.00 ETB with a mean of 800.00 (ETB). The same is true for other places in Ethiopia  
 171 (Gezahegne, 2001; Assefa (2009).

172  
 173 Table 2. Governing factors for the price of honey in the study area

Factors	No of respondents n=40						
	1 <sup>st</sup> rank	2 <sup>nd</sup> rank	3 <sup>rd</sup> rank	4 <sup>th</sup> rank	weight	index	rank
Quality of honey	40(100)	0	0	0	160	0.4	1
Color and taste of honey	1(2.50)	35(87.50)	4(10)	0	117	0.3	2
Distance from market	0	0	11(27.5)	29(72.5)	51	0.13	4
Season of honey production	0	4(10)	25(62.5)	11(27.5)	73	0.18	3
Total weight	401						

174 Numbers in brackets are percentages

175  
176  
177

Table 3. The price of honey by color (ETB)

Types of honey	No of respondents N=40			
	minimum	maximum	mean	Std. deviation
Red honey	70	110	97.75	10.975
White honey	120	150	133.50	6.222
Yellow honey	60	100	78.25	8.738
Black honey	50	100	69.25	12.483

178

### 179 Major challenges of honey and colony marketing

180 The challenges of honey marketing system is presented in Table 4. The result of the finding  
181 revealed that lack of roads for transportation of honey followed by, Lack of modern measuring  
182 devices like kilo and color of honey” are the three major constraints that affect honey marketing.  
183 In contrast to this, Beyene and David, (2007) and Tezara (2013), indicated that lack of  
184 information is the first challenge for honey marketing in Lasta district of Amhara region. Other  
185 studies also supported that the major challenge of honey marketing is the discouraging price of  
186 honey, quality problem and lack of market information (Gezahegne 2001; IVCA, 2009; Legesse,  
187 2013). On the other hand lack of organized market was found to be the major challenge of  
188 colony marketing in the study area. In support of this finding, poor extension systems, lack of  
189 credit service, lack of information are found to be the major constraints of honey and colony  
190 marketing in Amhara region (Ejigu et al. 2009).

191



192 Table 4. Major challenges of marketing system of honey

Challenges	No of respondents n=40									weight	index	rank
	1 <sup>st</sup> rank	2 <sup>nd</sup> rank	3 <sup>rd</sup> rank	4 <sup>th</sup> rank	5 <sup>th</sup> rank	6 <sup>th</sup> rank	7 <sup>th</sup> rank	8 <sup>th</sup> rank	9 <sup>th</sup> rank			
Lack of container for storing and transporting	3(7.5)	0	0	0	0	2(5)	9(22.5)	4(10)	22(55)	92	0.05	9
Lack of roads for transporting	19(47.5)	7(17.5)	8(20)	0	0	0	4(20)	2(5)	0	299	0.16	1
Lack of measuring device	0	8(20)	23(57.5)	5(12.5)	0	0	2(5)	2(5)	0	265	0.143	2
Lack of training and technical advice	1(2.5)	0	1(2.5)	11(27.5)	8(20)	2(5)	0	17(42.5)	0	166	0.089	8
Lack of market information	0	0	4(10)	1(2.5)	5(12.5)	28(70)	0	2(5)	0	175	0.094	6
Fluctuation of honey price	5(12.5)	0	2(5)	0	22(55)	1(2.5)	5(12.5)	1(2.5)	4(10)	212	0.115	5
Lack of market linkage	0	3(7.5)	0	3(7.5)	1(2.5)	5(12.5)	15(37.5)	9(22.5)	4(20)	146	0.078	7
Quality of honey	3(7.5)	18(45)	2(5)	3(7.5)	1(2.5)	1(2.5)	3(7.5)	1(2.5)	8(20)	232	0.125	4
Color of honey	11(17.5)	0	2(5)	0	22(55)	1(2.5)	5(12.5)	1(2.5)	1(2.5)	262	0.141	3
Total weight										<b>1849</b>		

193 Number in bracket is percentages

194 **Opportunities of honey bee products marketing system**

195 Honey bee products marketing opportunities are examined with seven measuring items is  
196 presented in Table 5. The survey data illustrates that the major opportunities of bee products  
197 marketing system are increment in number unemployed youth, increment in cost of honey bee  
198 products and increasing demand of honey and colony with index value of 0.91, 0.90 and 0.175,  
199 respectively. In agreement with this finding, Tessega (2014), reported that an increment in  
200 production amount of honey and presence of organized unemployed youth are the major  
201 opportunities in Bure district, Amhara Region. Increasing demand for honey for domestic  
202 consumption and export by different customers and organizations was also found to be the major  
203 opportunity of beekeeping practice in Haramaya District, Eastern Ethiopia (Serda et al., 2015).  
204 In Amhara region, presence of high honey bee races and forages, attention of the government  
205 and NGOs, and the presences of micro finance are among the major opportunities of beekeeping  
206 (Ejigu et al., 2009). On the other hand Melaku et al. (2008), reported that potentials for  
207 apiculture development in Yere and Zuquala watersheds are numerous which consists of  
208 availability of strong colonies and high yield, Availability of forages and Market access.

Comment [H2]: Burie?

209 Table 5. Opportunities of honey bee products marketing system

opportunities	Number of respondents n=40							weight	index	rank	
	1 <sup>st</sup> rank	2 <sup>nd</sup> rank	3 <sup>rd</sup> rank	4 <sup>th</sup> rank	5 <sup>th</sup> rank	6 <sup>th</sup> rank	7 <sup>th</sup> rank				
Increase in demand of honey and colony	8(20)	1(2.5)	22(55)	3(7.5)	2(5)	0	4(10)	194	0.175	3	
Increase in the number of unemployed youth	24(60)	1(2.5)	4(10)	0	0	7(17.5)	4(10)	212	0.191	1	
Increment in support of Gov,t and NGO to honey market	1(2.5)	3(7.5)	2(5)	1(2.5)	10(25)	24(57.5)	0	115	0.103	6	
Improvement of infrastructure	0	0	3(7.5)	20(50)	4(10)	0	13(32.5)	120	0.108	5	
Improvement of extension and training	0	2(5)	1(2.5)	14(35)	0	5(12.5)	18(45)	101	0.091	7	
Increase in population size of colony	1(2.5)	5(12.5)	9(22.5)	1(2.5)	23(57.5)	0	1(2.5)	156	0.140	4	
Increase in price of honey and colony	1(2.5)	28(70)	3(7.5)	2(5)	1(2.5)	5(12.5)	0	211	0.190	2	
Total weight	<b>1109</b>										
Number	in			bracket			is			percentage	

210

211 **CONCLUSION AND RECOMMENDATION**

212

213 From this study, it was concluded that lack of infrastructure like road for transportation and  
214 absence of important inputs like measuring devices are the major problems in the study area. In  
215 addition to this, lack of organized marketing place for sale and buying of colony were found to  
216 be the major problems for colony marketing in the study area. Therefore, to alleviate the  
217 problems, well developed market channel has to be built in order producers to fetch reasonable  
218 income.

219 **ACKNOWLEDGEMENTS**

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222 **CONFLICT OF INTEREST**

223 The authors declare that they have no competing interests

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