Contribution of Non- Timber Forest Products to the Rural Household Economy: Gore district, Southwestern Ethiopia

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Abstract

In forest resource abundant areas, NTFPs play an important role to the rural household economy. The traditional use of these forest products in the area of study have not been thoroughly studied and documented. Therefore, this study was conducted in Southwestern Ethiopia, Gore district with the main objective of investigating and analysing the extent to which the NTFP utilization contribute to the local household economy. Purposive sampling was employed to select the villages. Seventy-five households were sampled using stratified random sampling. Questionnaire and PRA tools were used for data collection. The result indicated that about 87 % of the local communities generate 23 % of their total income from NTFPs. NTFPs are widely utilized in the study area and provide seasonal job opportunity. The input of NTFP to household income of the poor (28 %) is more than medium (23 %) and rich (15 %). This shows that variation in the extent of dependency on NTFP income. But considering the absolute values the rich get more than the medium and poor. However, statistically there is no significant difference between the three-wealth status and NTFP income. Households lacking land and/or livestock depend on NTFP income for about 35 % of their total income. The level of dependency of the poor category is more than that of the other. Therefore, any negative change of the availability of NTFPs directly affects the poor.

Introduction

Forests are the main natural resource for villagers who live near it (Saowakontha, 1994). The provision of forest mainly includes two products: timber and non-timber forest products (here after NTFPs). NTFPs is an umbrella term for forest products that are of biological origin other than timber and extracted from forest (FAO, 1995). People have been trading and using NTFPs for generations (Chamberlain *et. al.,* 1998) this indicates that this product has a history longer than many timbers-based products. There are wide ranges of NTFPs that are extracted from the forest by the farmers either for consumption purpose or to generate income. In spite of the fact that NTFP activity is a very popular activity since long ago and provide an immense economic importance especially to the large majority of the rural community that are located in and around forest resource areas, there is no objective information about the utilization and the economic importance or contribution to the local household economy. This is mainly because the traditional use of these forest products in the area of study have not been thoroughly studied and documented. Therefore, this study aims to explore an often neglected class of forest products, NTFPs that are collected by

local people to be either consumed or sold and study the inputs that these products contribute to the rural household economy of forest adjacent community in the study area by so doing contribute the gap that currently exists.

Materials and Methods

Description of the study area

The area selected for the research is Gore (Alle-didu) district in the South-western Ethiopia. It is about 620 kms far from the capital city, Addis Ababa. It is one of the areas with good forest cover and it has an area of 155,388 ha. It contains one national forest priority area (NFPA) known as Syilum Gebre-Dima, which is amongst the 38 NFPA found in Oromia region. Of all the total district area, 44 % is forestland, 34 % cultivated land, 15 % grazing and 7 % is marsh and swamp, built up, bush land etc.

The natural vegetation cover of the study area is composed of moist evergreen broad-leaved species of woody forest dominated by trees with an abundant-under growth and it could be categorized under moist evergreen Montane forest (EFAP, 1994). The characteristics plant species found in the area include the largest and commercially most important trees such as: *Aningeria adolfi-friedericii*, *Afrocarpus falcatus*, *Albizia gummifera, Celtis africana, Polycias fluva, Schefflera abyssinica, Bersama abyssinica, Cordia africana, Ekebergia capensis, Croton macrostachyus, pygeum africanum, Syzygium guineense, Apodytes dimidiata*, and many others.

The study area lies within the altitude ranging from 1428 – 2292 m.a.s.l. The mean annual average rainfall for the woreda is about 1982 mm. The area has high amount of rainfall and long rainy season. The rainfall is of uni-modal pattern. The mean maximum temperature is 24 ^{0}C and mean minimum temperature is 14 ^{0}C. The average annual temperature is 19 ^{0}C for the period of 10 years.

Crop production is the main source of income of the rural households. The major food crops produced are maize, sorghum, and Teff. Among these different cereals, maize is the most frequently grown crop. Besides these crops Enset, chat, sugar cane, finger millet, barley, wheat, banana, etc are also grown. Small-scale animal production is an integral part of the cropping system and it is one of the common economic activities

exercised by the farm households. Coffee is the predominant cash crop of the area.

Sampling method

Two villages: Dewa and Gosi were purposefully selected from amongst the villages within and around the forest area. This is based on different criterion; namely accessibility, available time and resource for the thesis work, availability of NTFPs and level of dependency on the forest resource. For the selection of sample households, stratified sampling were employed that involve the grouping of study population in to different strata and selecting a random sample within each stratum to yield a sufficient number of sub population in the sample for reliable analysis (Henry, 1990). This was done to get a more representative respondent from each stratum with equal probability and thus improve efficiency.

Considering variation in the socio-economic situation of the farmers; peasant association leaders, the key informants and Development Agent categorized the study population in to relatively rich, medium, and poor by setting criteria such as number of livestock, farm size, crop production and coffee.

Prior to the start of the research work, an attachment was made with the district forestry department. Permission to get an authorization to conduct the study in the area was granted from the woreda administration. An informal discussion was made with the forestry department on the types of NTFPs available in the forest and where they occur. With this information in mind, field visits were arranged and conducted with an expert from the Department of Forestry, the purpose of which was to verify the information acquired at office level. Field visits were done to every accessible villages located in and around the forest. There are inaccessible villages in which the forest of their area is rich in NTFPs. During these field visits, contacts and informal discussion were made with development agents and residents of the area. These have helped in the selection of villages for the research.

Data collection

Primary data collection involves the collection of qualitative and quantitative data that requires different approaches: the participatory and the statistical. Data were collected between September and December 2003. To obtain quantitative information statistical approach

were implemented and data were collected through a survey with face to face interviewing using structured and semi- structured questionnaires. These questionnaires were developed based on literature review, informal discussions with forestry department and informal discussion made during preliminary survey, and in ways that enabled the required data collection based on the study objective. An interview was made with the heads of the households (mostly men). Few female-headed households were also included in the survey.

In addition to the quantitative household survey, qualitative data collection method was used (PRA tools such as key informants, focus group discussion, and informal discussion) the main objective was to gain maximum information with in a minimum time and resource and to assess the veracity of information from the interview.

Secondary data source were review of literatures, and governmental organizations at zone and district rural development office regarding basic data.

Measuring income

Information was collected regarding the possible sources of income of the households. Each household was asked to give an estimate of how much quantity of product obtained from each sources of income during the year preceding the interview including all that obtained which either could be for consumption or sell, if any. It relies up on respondents' estimation of the amount harvested, consumed and sold, rather than empirical observation and measurement. The respondents were asked to estimate, the total amount collected, consumed and sold during the past harvesting year.

The income collected was the total income including own consumption and sell of agricultural produce, livestock, NTFPs, coffee cultivation etc. The total amount of estimated product quantified were converted to monetary value, were calculated by multiplying the quantity of the product during the year, with the reported average price per unit in the local market.

Method of data analysis

Data collected was checked, corrected, coded and captured using Micro- soft Excel. Both qualitative and quantitative data were analysed. Data analysed using Statistical Package for Social Studies (SPSS). To glow

light on the objective of the study and describe the findings, simple descriptive statistical tools and One Way ANOVA in the package were used. One way ANOVA were used to test whether there be a significant difference between the wealth status and NTFP income. The results were presented using Tables, charts and frequency distributions.

Results and Discussions

Socio economic characters tics

Income

According to the socio-economic survey result, incomes of the sample households are chiefly derived from agriculture, forest resource collection, livestock, and coffee cultivation; and to a limited extent pension, wage labour and petty-trade for a few households. The survey found out that there are no single sources of income the household entirely depended on. Except very few, all respondents have more than one source of means of income. The survey encountered only two households not involved in crop production.

Household income in the study area mainly comes from crop production. But it is insufficient and cannot sustain them year round. It was reported that about 65 % of the respondents face food shortage. This can be partially attributed to small land holding. The survey results show that 11 % of the respondents are landless. This group of respondents are doing sharecropping. Only sixteen per cent of the respondents possess greater than two hectares of land. The range lies between 0.125 and 6 ha. The average land holding is 1.3 ha (Table 1).

The local people of the study area assume land to be the base for their life. This is due to their dependence on crop production, which is impossible without land. The result shows that there is scarcity of land in the study villages. This has an implication that it influences negatively the income of the households.

The other source of income is livestock. The different types of livestock include cattle, goats, sheep, horse and mule. The survey result shows that across the village 28 % of the respondents do not possess any livestock. They suffer with respect to draft power, access to milk and its products. Livestock income is the sum of income from milk, butter and sale of livestock. On average, the number of livestock possession in the sampled households across the village is small this in turn

influences their income which implies that they get limited amount of income from livestock (Table 2).

Weighing all the responses of the respondents from each sources of income, the mean annual household income found to be 1895 ETB, with a range of 500 to 4946 ETB. There is a wide variation. The distribution of the total income across all households indicates that about 59 % of the households had income less than 1900 ETB per annum, 33 % earn income between 1901 and 3300 ETB per annum and the remaining only 8 % earn more than 3300 ETB per annum (Table 3). The result shows that the study villages are poor because the majority of the respondents are getting an estimated annual total income of small amount.

The reliability of the estimated income figures is questionable. Since a number of households were hesitant to make known their income because of different reason. Some were also unable to estimate due to absence of memory-aide at the time of interview. This is because most of these products are consumed at home.

It is important to note that in calculation of the total household income, the income from different forest products such as timber, poles, withies, firewood and charcoal were not accounted. For one thing these products are not marketed and also during the survey there were no single household reported marketing these products. However, it is obvious that these local communities are using these products for different purposes at household level. But due to difficulty of accounting system they were not included in the total household income.

Utilization of forest products

During different group and informal discussions the participants pointed out that forest is the basis for their life: through provision of different forest products. They indicated that it is everything for them. They utilize the forest in a variety of ways. It was pointed out that many of those local communities are dependent on forest for construction materials such as poles, liana, timber, etc., fuel wood, Animal feed or grazing, coffee cultivation, farm implements, household furniture, for placement of beehives and traditional beekeeping site, traditional medicine, foods, fodder, shade, fencing, fresh water for their livestock and themselves, source of cash income and so forth.

All the local people are well aware of the forest resource in their area. They have knowledge of the availability of different forest products. The forest of the study area is utilized in different ways for different purpose. There is a close interaction between the local people and the forest. It provides a wide variety of NTFPs that are very important. Moreover, the results of the questionnaire survey with 75 household representatives shows that almost all the respondents identified the benefits of the forest as a source of different NTFPs. Even, those who do not collect told what is available in the forest and the local people make use. Every household responded at least by mentioning some NTFPs. Based on the results of the socio – economic survey, about 88 % collect NTFPs. This indicates that NTFP activity is a popular activity in the area. Additionally, it shows that NTFP activity provides the large majority of the households' seasonal job opportunity.

Table 4 shows that the main NTFPs utilized and accordingly, most respondents (69 %) keep traditional bee in the forest, collect wild coffee (52 %), *Afromomum corrorima* (48 %), *Phoenix reclinata* (41 %), *Rhamnus prinoides* (4 %), and medicinal plants (3 %) and also exercise hunting (4 %). As mentioned by the participants, the main objective of collecting these NTFPs varies. Among them are as an income generation, as an option during food shortage and as a part of normal diet. The purpose of NTFP utilization varies with the type of the NTFPs. For instance, the result of socio-economic survey shows that honey, *Afromomum corrorima*, and wild coffee are mostly collected for a cash income generation purpose, besides small amount of domestic consumption. Hunting is exercised for all the three purposes mentioned. There are three hunters included in the socio-economic survey. Two of them are doing this activity to generate income and as an alternative during food shortage and the other one adds or uses as a part of normal diet in addition to the earlier mentioned ones.

While *phoenix reclinata* is mainly used as an option during food shortage by the majority of the respondents and also as an income generating through making mats by the minority of the respondents in the area, whereas *Rhamnus prinoides* is collected for income generation only, though it was stated during group discussion that it is also used domestically for making local beverage known as 'Tella'. Therefore, the study finding indicates that NTFPs are utilized for different purposes. And different NTFPs have different roles. The quantity of harvest of each product depends on the degree of effort

each individual expended. It was indicated during group discussion that any individual devoted in doing this activity could collect as much as he can. Nevertheless, what limits them is the time these NTFP are available. For instance, the availability of wild spice, the collection of coffee and the placement of beehives overlap with each other and with other activities like crop harvesting.

Contribution of NTFPs to household economy

The quantitative analysis of the survey result was done in different ways. One is by considering only 87 % of the sampled households taking the villages independently and together. The second is by considering the wealth status (relatively rich, medium and poor) of the sampled households. The last one is by taking the households that don't have any of the following resource or both: land and livestock to see the level of dependency of the different strata of the community on forest resource or NTFP – income.

Accordingly, 87 % derives income from collecting and selling of NTFPs. The result shows that for 87 % of the respondents, NTFPs income make up to 23 % of the total income of the households. With this, it comes the second to crop production in terms of the proportion to the total household income (Fig. 2). Agricultural crops take the major share and that of NTFP is half of it.

Since before sampling the households were categorized in to three strata, the proportion NTFPs income makes up was performed independently for each category. And it was found that all wealthier households collect NTFPs. Crop and livestock production takes the major proportion and followed by NTFP (Fig. 3.). It is only three types of NTFPs: namely, honey, wild coffee and wild spice that account for it.

In the same way, in households of the middle strata crop and livestock production make up the largest proportion followed by NTFPs (Fig.4.). For this group NTFP income makes up 23 % and it is almost equal with that of livestock (24 %). In this case, there are five types of NTFPs including, honey, wild coffee, wild spice, *phoenix reclinata* and *Rhamnus prinoides* that accounted for the proportion.

In the poor categories, the proportion of NTFP became 28 %. It is the second major important source of income (Fig.5). Six types of NTFPs contributed. They include honey, wild coffee, wild spice, *phoenix reclinata*, *Rhamnus prinoides*, and hunting. Therefore, for the poor

the second major source of income is the income from NTFP.

However, considering the absolute values the input of NTFP income is more for the rich and the medium than the poor. The poor category is getting less as compared to the other (Table 5).

In extreme cases, households lacking either one or two of the resource such as land and/or livestock, and that are involved in NTFP activity are selectively taken together to see the level of dependency of these poor households. They account for about 28 % of the sample households. And the result shows that these households depend on NTFPs for 35 % of their total income. Next to crop production, NTFPs make the major share for these households (Fig. 6).

The study finding shows that the majority (87 %) of the study community generate income from NTFP activity. It is the second most important source of income. It contributed for about 23 % of the total income of the households using NTFPs in the study area. This indicates that NTFP activity is a common activity and majority of the local people of the study area depend on this activity especially to meet their cash needs.

Moreover, considering the different categories of the local community, the input of NTFPs income shows some difference. For instance, the result shows that, for the rich group NTFPs present a significant component accounting for about 15 % of their annual total income and for the medium category (31 %), it makes up about 23 % of their total income. Whilst for the poor category (45 %), the income from NTFP comprises about 28 % of their total income. This indicates that there is a variation in the level of dependency on NTFP among the three-wealth status. The wealthier group derive substantial amount of income from NTFP activities. But they depend on few commercially important ones; namely coffee, traditional beekeeping and wild spice. This indicates that these people seasonally depend on NTFP income.

Similar with the finding of Lacuna-Richman (2002) writing about subsistence NWFPs in the Philippines, though there is a variation in the proportion of NTFP income differed for the different households in different wealth category, NTFPs remained important to the community for both food security and a cash income. This study also indicates that the contribution of NTFPs increase the total income of the household.

However, it doesn't mean that the poor category get more from the forest than the others. Because the results from the absolute values indicate that on averages the rich category gets more than the others. This has an implication that the rich benefits more from NTFPs than other categories. But statistically there is no significant difference (at p<0.05) between the three-wealth status and the income from NTFPs (see Table 6). This implies that there is no significant difference between the entire wealth category and the income obtained from NTFPs.

The wealthier groups use the income from NTFP as supplementary purpose whereas; generally for the middle and poor households it is important for their sustenance. Hence, NTFP income has different roles in the livelihoods of different categories of the local community of the study area. That means the poor group are using for survival purpose. However, sometimes, in line with the study of Falconer (1990), income earned from forest-based activity offers the poor a means of investing in the future. As some informants pointed out, if the poor works hard in NTFP related activities one-year especially in traditional beekeeping, it is possible to buy ox or livestock. The contribution of the proportion of NTFP to the total household economy is more for the poor household category. The input of NTFP income becomes the highest for the poorest group (those lacking at least one of the two resources: land and livestock). It accounted for about 35 % of the total household income (for 28 % of the respondents). These households have less access to land and livestock. The input of NTFP income for this group of household is high. This shows that for the poor group of the local community the NTFP income makes an important part of their annual total income. This indicates that this group of households depend more on NTFPs and this implies that for the rural poor lacking land and/or livestock, harvesting or collection of NTFP is a common option. This is a similar finding as Stoian (2003) points out in his study in Bolivian Amazon that NTFPs is the last resort for the poor. It is the major source of cash income. Moreover, the output of this study agrees with the study of different Authors that the poor due to lack of access to other resources depends on forest resource (Falconer, 1990; FAO, 1995; Ruiz Perez and Arnold, 1996; Ruiz Perez and Arnold, 1998).

The result of the study shows that for the rural poor of the study area (especially those lacking either land and/or livestock) the income from NTFPs represents a high percentage of the total income as compared to the other category of the rural population. This study finding is similar to Berhanu (2001) that indicates the income from forest forms high percentage of the total income of the rural people. However, this study finding is in the contrary with Ambrose-Oji (2003) whose study in southwest Cameroon indicates that the relative contribution of NTFP income to the total household economies is higher for the middle groups than for the richest and poorest groups. Generally, NTFPs activity is important for all groups of the community. The study finding indicates that income from NTFP activity is a constant element of means of household income for households in all wealth categories. However, its essentiality is more in the case for the poor groups because of lack of other alternative means of income. According to the study finding the majority of the local communities of the study area are very poor. These people could not feed them selves' year round on subsistence agriculture alone. The income from NTFPs play great role in minimizing the level of poverty. One of the methods of copping food shortage problem is selling NTFPs and buying of food crops. In the absence of NTFPs activity the level of food shortage would have been higher. The study finding is in agreement with Berhanu (2001) that explains that the income from forest minimizes the level of poverty. The poor would suffer more due to the lack of alternative means. In the study area there is unavailability of other means of non- farm income in which the poor category would be involved and smoothen some of its hard times. Due to this and other reasons like poor agricultural productivity, they turn to what is available in the forest in an attempt to earn a living. Therefore, NTFP activity is the last resort of the poorest among the poor households. As a whole in the area the income from NTFP activity is mainly two times a year. One is from September to January and the other is from April to June. Of all, in the second season NTFP activity comprises an important part of coping strategy of food shortage. It is important to note that the study did not exhaustively include all the available and utilized NTFPs in the accounting system. Had it been the contribution of non-timber forest products would have been more than what is appeared or shown. There are a lot of forest resource utilized at household level which were not accounted in the household income calculation of economic contribution but have substantial contribution to the household total income. They include the non-commercial non-timber forest products such as medicinal plants, forest ropes, and forest grazing and forest foods. Rather, due consideration was paid to the few commercialised ones because of the difficulty of finding equivalent monetary value to those not commercialised.

Table.1 Reported Land holding size of the sample households (n= 75)

Category	Number of households in each village		
	Dewa n (%)	Gosi n (%)	Total N (%)
Land less	6 (18)	2(5)	8(11)
< 1 ha.	15(44)	9(22)	24(32)
1 – 2 ha.	12(35)	19(46)	31(41)
>2 ha.	1(3)	11(27)	12(16)
Average	0.8 ha.	1.7 ha.	1.3 ha.

Table.2 Mean ($\pm$ std. Dev.) live stock numbers per household of sample household

No.	Live stock	Villages				Total
		Dewa	%	Gosi	%	Mean
1	Cattle	4.0($\pm$4.2)	65	3.6($\pm$4.0)	78	3.8 ($\pm$4.1)
2	Sheep and goats	0.9($\pm$1.4)	38	1.1($\pm$1.6)	51	1.0 ($\pm$ 1.5)
3	Equines	0.5 ($\pm$0.7)	38	0.5($\pm$0.8)	39	0.5 ($\pm$ 0.8)

Table.3 Economic status of the sample households (n=75)

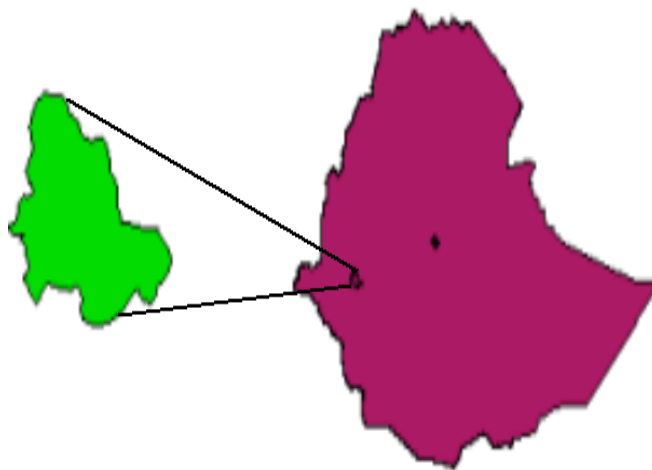|	Dewa (34)		Gosi (41)		Total (75)	
Index of economic status	Freq.	%	Freq.	%	Freq.	%
Annual household income (in Birr)						
500 – 1200	11	32	4	10	15	20
1201 – 1900	11	32	18	44	29	39
1901 - 2600	7	21	10	24	17	23
2601 – 3300	3	9	5	12	8	11
3301 – 4000	2	6	1	2	3	4
4001 – 4700	0	0	1	2	1	1
4701 – 5400	0	0	2	5	2	3
Major sources of income of the household						
Crop production						
Animal raring	32	94	41	100	73	97
Coffee cultivation	22	65	32	78	54	72
NTFPs	3	9	36	88	39	52
Petty trade	33	97	33	81	66	88
Wage labor	3	9	4	10	7	9
Others	1	3	7	17	8	11
	0	0	2	5	2	3
Possession of own land						
Yes	28	82	39	95	67	89
No	6	18	2	5	8	11
Possession of Cattle						
Yes	22	65	32	78	54	72
No	12	35	9	22	21	28

Table.4 Major NTFPs collected and proportion of household using a range of NTFPs

Main NTFPs	Dewa (n=34)		Gosi (n=41)		Total	
	N	% Household	n	% Household	N	% Household
Collect NTFPs						
Yes	33	97	33	80	66	88
No	1	3	8	20	9	12
Honey	25	74	27	66	52	69
Wild coffee	32	94	7	17	39	52
	19	56	17	42	36	48
Afromomum corrorima						
	0	0	31	76	31	41
Phoenix reclinata						
RhamnusPrinoides	0	0	3	7	3	4
Hunting	3	9	0	0	3	4
Medicinal plant	1	3	1	3	2	3

Table.5 Mean ($\pm$ std. Dev.) income per household in each category of sample households

Source of income	Wealth category		
	Poor	Medium	Rich
Crop production	645.3 (357)	983.2 (406.3)	1451.0 (468.5)
Coffee	147.1(178.9)	152.9 (173.1)	434.4 (538.7)
NTFP	348.8 (246.2)	429.0 (325)	512.9 (180.4)
Livestock	159.6 (206.6)	527.4 (325.7)	939.0 (317.9)
Petty trade	20.5 (78.9)	20.7(66.8)	62.5 (176.8)
Wage labour	52.7(154.4)	.0 (.0)	.0 (.0)
Others	28.6 (178.7)	39.9 (210.9)	.0 (.0)
Total	1402.6 (521)	2153.1(778.1)	3399.8 (1100)

Fig.1 Map of the study area

Fig.2   Input of each source of income for the user households
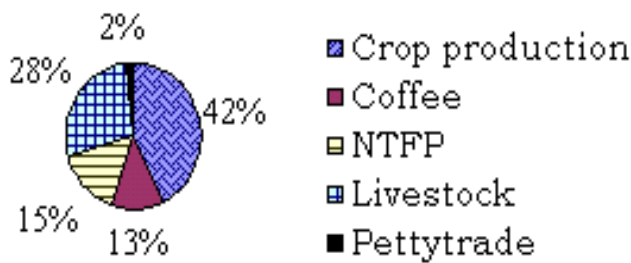

Fig 3   Input of each source of income for households in the rich category
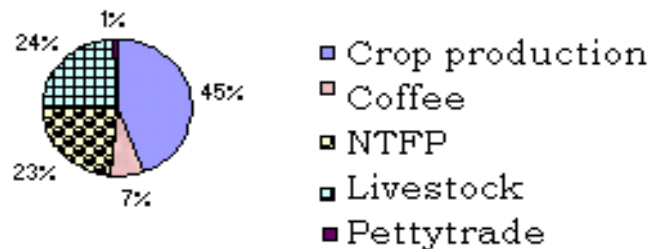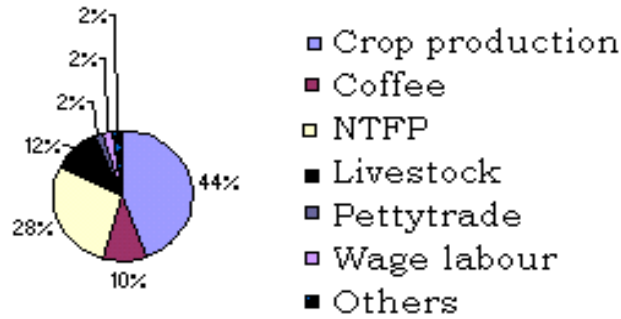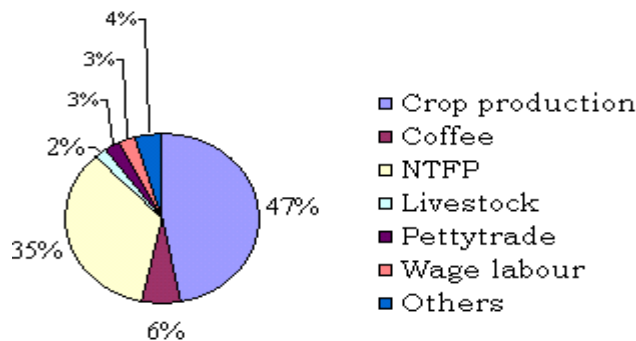

Fig 4   Input of each source of income for households in the middle wealth status

Fig.5 Input of each source of income for households in the poor category

Fig 6 Input of each source of income for households without land and/or livestock

Conclusions and Recommendation are as follows:

Forests of the study area supply a number of NTFPs. The majority (88 %) of the inhabitants collect a range of NTFPs for their consumption and for income generation and it is a popular activity. The main widely utilized NTFPs of the area are honey, wild coffee, *phoenix reclinata*, *Afromomun corrorima*, *Rhamnus prinoides*, hunting, medicinal plants, edible plants, forest grazing and forest ropes. Except the last four, all are sold in the local markets. The main aims of collecting these products are generally for income generation, as an option during food shortage and rarely as part of normal diet.

NTFP income plays a key role in most rural household economy. It has substantial input to the total income of those households with in each wealth category. The income from NTFPs makes up 15 %, 23 % and 28 % for rich, medium and poor households, respectively. The share of NTFP income is higher for the poor households. The contribution of NTFPs for households lacking land and/or livestock (28 %) accounted for about 35 % of their total income. There is a difference in the level of dependency between the different wealth categories. The magnitude of dependency becomes high for the poorer group. But taking the absolute values, it is the rich that get more. However, statistically there is no significance difference between the wealth status and the NTFP income.

NTFP income helps the poor people in smoothening hard time. The poorer category, especially those lacking livestock and/or land relay more on NTFPs because of

lack of alternative means of income. The income from NTFPs fills cash flow gaps. It is an important part of cash flow. It also serves as a copping strategy of food shortage. With the present status of living condition, NTFPs play a key role especially for the poor, which imply that any negative change of NTFPs availability affects the poor households.

Based on the preceding discussions the following recommendations are made:

- Development of traditional beekeeping: The area has high potential of honey production. But, its full potential is not yet exploited. The reason as to why beekeeping needs to be developed is to increase yield because the present production system is exclusively dependent on traditional way. Development can be through awareness raising and introduction of new materials and methods.
- Further research into the use and its contribution to the local household economy in the area is needed since this study only covered a small portion of large population using many different NTFPs and in the present study some of the non-commercialised NTFPs were not included in the accounting system and the calculation is also based on the respondents estimation rather than empirical observation and measurement.

Acknowledgement

References

Ambrose-Oji. 2003. The contribution of NTFPs to the livelihoods of the 'forest poor': evidence from the tropical forest zone of southwest Cameroon. *International forestry review* 5(2), pp.106-116.

Anonymous, 1996. Ecological study on impacts of timber logging and encroachment in Fotoka forest.

Ilubabor zone Department of Agriculture, Environmental Protection and planning team, Mettu.

Anonymous, 2001. Natural resource assessment land use/land cover, soil and Land degradation data, Land use and Environmental Protection Team, Mettu.

Arnold, J.E.M. and Ruiz Perez, M (1996). Framing the issues relating to non – timber forest products research. In: Ruiz perez, M. and Arnold, J.E.M.(eds). Current issues in non-timber forest product research, pp.1-18. CIFOR/ODA, Bogor, Indonesia.

Arnold, J.E.M. and Ruiz Perez, M. (1998). The role of non – timber forest products in conserving and development. In Wollenberg, E. and Ingles, A. (eds.) (1998). Incomes from the forest. Methods for the development and conservation of forest products for local communities, pp.17-42.CIFOR/IUCN, Bogor, Indonesia.

Berhanu Mengistu, 2001. International Conference on Public Management, Policy and development. Governance and sustainable development: Promoting collaborative partnership. Addis Ababa, Ethiopia.

Chamberlain, Bush, R. and Hammett, A.L.1998. Non-Timber Forest Products. the other forest products. Viewed on line 29July 2003:http//www.sfp.for prod.vt.edu/pubs/sf.pdoc1.pdf

EFAP, 1994. Ethiopian Forestry Action Program. EFAP, Addis Ababa.

Falconer, J. 1990. The major significance of 'minor' forest products. The local use and value of forests in the western African Humid forest zone, Community forestry Note, 6, FAO, Rome.

FAO. 1995. Marketing Information Systems for Non timber forest products. FOA Community forestry field Manual No. 6, FAO, Rome.

FAO. 1995. Non-wood forest products for rural income and sustainable forestry. FAO Non wood forest products No. 7. FAO, Rome.

Henry, G.T. (1990), Practical sampling: Applied social science research method volume 21, Sage publication inc. , Newbury park, USA, 139pp.

Lacuna-Richman, C. 2002. The socio economic significance of subsistence non-wood forest product in Leyte, Philippines. *Environmental conservation* 29 (2): 252-263.

Ruiz-perez, M. (1996). Current issues in non – timber forest product research. Bogor, Indonesia: CIFOR.

Saowakontha, 1994. Dependency on forest and tree products for food security IRDC, Uppsala.

Stoian, D. 2003. Making the best of two worlds: rural and peri-urban livelihood options sustained by non-timber forest products from the Bolivian Amazon. Viewed on line 18 July 2003:http://www.cifor.cgiar.org/publications/corporate/cd-roms/bonn-results/papers/T$_2$ Final Dietmar stoian.pdf

Taylor, F.W. and Parratt, N.T. 1995. The potential of NTFPs of Botswana. The sixth conference of the Australian council on tree and nut crops Inc. Lismore, NSW, Australia. Viewed on line 18July, 2003:http//www.laf.uq.edu.au/staff/rfletcher/acotanc/papers/taylor.thm.