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Analysis of the Contribution of Utilization of Non-Wood Forest Products to the Income (Case Study at Some Village Communities Around the Forest of North Tapanuli Regency, North Sumatra, Indonesia)

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Abstract. The contribution of forest in North Tapanuli Regency can increase the economic income of the local community through the use of Non-Wood Forest Products (NWFPs). Most village communities around the forests of North Tapanuli Regency have used NWFPs for generations to meet their needs. This study aims to analyze the value of the contribution of NWFPs to the income of village communities to determine the level of community dependence on these forest resources. Knowing the value of the contribution of NWFPs can be used as recommendations for policymakers to allocate increasingly scarce NWFPs and distribute the benefits of NWFPs fairly and optimally. This research was conducted in five Districts in North Tapanuli Regency considering that there are still many people who live depend on NWFPs. The research method was carried out by field observations and interviews using questionnaires, with a total sample of 98 respondents. Respondents were taken using the purposive sampling method. Respondent identification was done through the snowball technique. Data analysis of the contribution value was carried out by calculating the total income of the community, such as incomes sourced from NWFPs and other income. The results showed that the monthly income of villagers outside of NWFPs was in the range of IDR 1,000,000 – 2,000,000. Then the contribution of NWFPs to the income of villagers around the forest was 74.9% of income outside of NWFPs.

Keyword: Community, Contribution of NWFPs, Income, Forest, Forest Products

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1 Introduction

The forest zone of North Tapanuli Regency is managed by three of integrated forest management systems as known as Kesatuan Pengelolaan Hutan (KPH or forest management

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unit/FMU), namely Region XII of Tarutung, Region IV of Balige, and Region XI of Pandan. The forest area holds the potential of Non-Wood Forest Products (NWFPs) which have been used by the community for generations to meet the living needs of the village community.

NWFPs have contributed sustainably greatly to Indonesia's foreign exchange for decades. The largest production of NWFPs is founded in the gums including resins, fruit, seeds, and leaves. Data on Forest Resources Provision revenue from NWFPs in 2015 was IDR 15,854,299,007.00. In 2016, it was IDR 15,441,784,274.40, and IDR 15,766,710,821.20 in 2017. The sources of NWFP production are mostly from Izin Usaha Pemanfaatan Hasil Hutan Kayu (IUPHHK) or Permit for Timber Business in an industrial plantation forest or Hutan Tanaman Industri (HTI) and Perum or State Forestry Corporation (Perhutani) namely in the form of eucalyptus latex and leaves while FMUs are still very small, where the utilization of NWFPs is carried out with KPH cooperation schemes can collaborate on forest utilization with investors (BUMN/S/Cooperatives, etc.), such as the use of pine resin, utilization of rattan, nature tourism services, etc [1]. The economic value of NWFPs used by the community in the Kapuas-Kahayan FMUs area reached IDR 684,450,000/year [2]. The economic value of NWFP used by the Sembahe Village community is IDR 967,529,300/year, donating 57.28% of the total family income. While the economic value of NWFPs in Bengkurung Village is IDR 509,180,000/year, which donates to 65.57% of the total household income [3].The results of Dewi [4] research, show that the economic value of the utilization of forest resources in the Baluran National Park by the people of Wonorejo Village is IDR 973,799,746/year. The village community has a high level of economic dependence on forest resources. In 2018 there were 293 transactions for depositing PNBP (Non-Tax State Income) of PSDH by 35 FMUs from 13 provinces, especially for NWFP products of the rattan group, pine and gum, resin, bark (cinnamon), forest bamboo, leaves and roots (eucalyptus, lemongrass, patchouli, wind wood), and others [5]. Interest in NWFPs is increasing because they can increase rural development and reduce poverty. The description of Adam [6] showed that the income from selling the fruits was positively and negatively influenced by different external and internal factors. The study concluded that any assumption regarding the potential of NWFPs to positively affect rural development depends on their role in an accumulative strategy that lifts people out of poverty.

This study will calculate the value of the contribution of NWFPs to the income of rural communities in several Districts in North Tapanuli Regency which has not been carried out before. This research was conducted given the importance of this assessment of the forestry sector has viewed forests as a resource with multifunctional and multi-interested. Furthermore, its utilization is directed to realize the greatest prosperity of the people. NWFPs are one of the forest resources that most touch the lives of village communities around the forest. The contribution of NWFPs can have an impact on increasing community income and local revenue.

This study aims to analyze the value of the contribution of NWFPs to the income of village communities to determine the level of community dependence on these forest resources. Further, knowing the contribution value of NWFPs can use as recommendations for policymakers to allocate increasingly scarce NWFPs and distribute the benefits of NWFPs fairly and optimally. This study was conducted to obtain information and an overview of the community's use of NWFPs. This research is expected to be able to provide data, information, and recommendations in the form of the level of community dependence on NWFPs as a source of community income that can be used as an alternative solution to improve the management of NWFPs to boost the welfare of the local community of North Tapanuli Regency.

2 Research Method

This research was conducted in five Districts in North Tapanuli Regency, North Sumatra Province, Indonesia (Figure 1). The selection of this location was based on the RPHJP (Rencana Pengelolaan Hutan Jangka Panjang or Long Term Planning of Forest Management) of three FMUs, namely Tarutung, Balige, and Pandan. KPH Tarutung [7] states that the location of the highest NWFPs is in both Districts of Sipaholon and Adiankoting. KPH Balige [8] listed the areas with high NWFP potential in the District of Garoga, Pangaribuan, and Sipahutar KPH Pandan [9] states that the potential for NWFPs is in the District of Adiankoting, Pangaribuan, and Garoga. This research was conducted from December 2021 to April 2022.

2.1 Population and Sample of Research

The sampling technique used was the purposive method, with random or intentional. Respondent identification was carried out through the snowball technique, involving one or two respondents who took and used NWFPs from the forest. Then from the respondent's information, another respondent was selected who also took and used NWFPs. This procedure was conducted until the number of respondents met the criteria [10]. Respondents in the study consisted of general respondents and key respondents. The general respondents were village communities around the forests of North Tapanuli Regency that take and utilize NWFPs. The key respondents were forest handlers, forest police, village heads, tribal chiefs, Mantri or rural health workers, religious leaders, and other community leaders who went in and out of the forest area, recognized the types of NWFPs and the condition of the forest area in North Tapanuli Regency.

The sample size of respondents was calculated using the Slovin formula as depicted in equation [11]:

$$n = \frac{N}{1 + N(e)^2} \quad (1)$$

where: n = sample size

e = slack level (10%)

N = total population

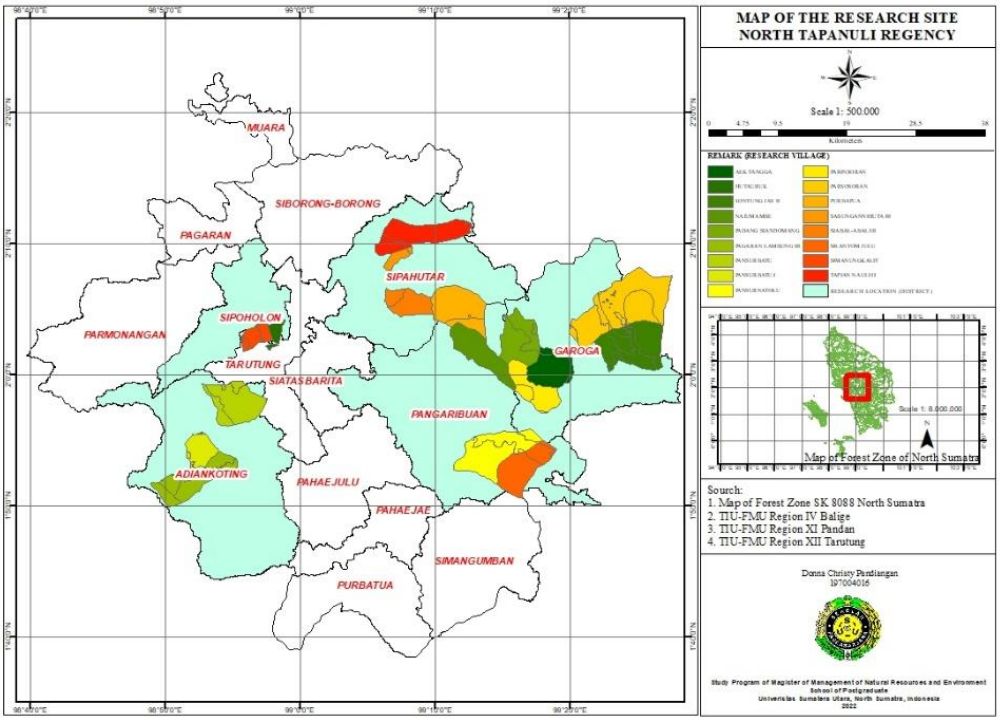

Figure 1 Map of Research Sites (The five Districts of research sites are blue colored)

The number of family heads (FH) in five Districts covering forest areas in North Tapanuli Regency is 4957 [12]. So the total number of respondents in this study was 98 families. Research respondents in Adiankoting District were 17 respondents (3 villages), Garoga District were 29 respondents (5 villages), Pangaribuan District were 23 respondents (4 villages), Sipahutar District were 17 respondents (3 villages), and Sipaholon District were 12 respondents (2 villages). Determination of the location of the research village is based on related FMUs recommendations supported by RPHJP (Rencana Pengelolaan Hutan Jangka Panjang) or Long Term Planning of Forest Management) data: FMU Region XII Tarutung, FMU Region IV Balige, and FMU Region XI-Pandan. Number of the respondents was determined by purposive sampling considering proportionality and the status of respondents, namely general and key person.

2.2 Method of Data Collection

The types of data collected in this study were consisted of primary data and secondary data.

A. Primary data

Primary data were collected through field observations and interviews with respondents based on a prepared questionnaire. Primary data collected includes:

1. Information on the type and value of NWFPs is volume, the intensity of collection, price, time spent in collecting NWFPs, and other costs related to NWFP management.

2. Information on the utilization of NWFPs is local names and parts of plants used and the amount.

3. Information on the contribution of NWFPs to the incomes of communities around the forest is community income from the use of NWFPs and other incomes.

4. Sociocultural information is respondent identity data, namely name, age, gender, livelihood, education and others.

B. Secondary data

The secondary data was collected by doing a literature study. It collected includes the general condition of the area which comprises the location, boundaries and area, climate, topography, and flora. Socio-economic conditions consisted of The North Tapanuli Regency government, especially government agencies that manage the North Tapanuli forest area, population, facilities, and infrastructure, as well as location maps obtained from District offices and related agencies conducted through a literature study.

2.3 Method of Data Analysis

Income from NWFPs is calculated using the market price method [13]-[14]. The economic value of NWFPs was calculated using the market price approach [15],[4],[3]. In addition, assessing economic benefits is based on the price of the Indirect Opportunity Cost (IOC) technique. IOC is used to assess forest goods/services approached from the cost factor procurement. IOC takes into account the perception that time is a resource [16].

Analysis of NWFPs contribution level is carried out by calculating the total income of the community, both income from NWFPs and other incomes. The percentage of income from NWFPs is calculated by comparing the income obtained from NWFPs with the total income sources of respondents using the formula as follows [13]-[14]:

$$NKj = \frac{\frac{\sum Yjt}{Nj}}{\frac{\sum Yjtot}{Nj}} x100\% \quad (2)$$

where: NKj = contribution value of NWFPs to the average income of the community in the j village (%)

Yjt = benefits value of NWFPs used by the community in j village in t year (IDR/year)

Yjtot = value of total household income in j village in t year (IDR/year)

Nj = number of respondents in j village

Percentage of the number of NWFP i users in each village is calculated by the formula (3) as follows:

$$Pij = \frac{nij}{Nj} x100\% \quad (3)$$

where: Pij = percentage value of utilization of NWFP type i originating from j village (%)

Nij = number of NWFP type i users from j village (FH)

Nj = total number of respondents in j village (FH)

Each type of NWFP used by the community from the forest calculated the real value in the form of Indonesian currency (IDR or Indonesian Rupiah), then recapitulated the value of the benefits of all types of NWFPs used by the village community around the forest. The final stage is to analyze the data descriptively, namely an analysis that provides explanations and descriptions of the object of research.

3 Result and Discussion

The age characteristics of the village community around the forest at the study site that utilized the NWFPs were in the 36-45 year age class (34.69%) (Figure 2). Age affects the level of forest resource harvesting. The elder a person is, the less productive they are, so the utilization of existing forest resources is also relatively small. The high percentage of NWFP utilization in this age group is affected by the productivity of the age group category. The level of productive age group in Indonesia according to BPS [17] is in the range of 15-65 years, while the unproductive age is under 15 years and over 65 years.

Figure 2 Percentage of Age Group Class of Villagers Around the Forest Using NWFPs

Further, education level could also affect the level of utilization of forest products. The low level of education caused high interaction and community dependence on forest resources to fulfill their daily needs [18].

The education of village communities around the forest in five Districts in North Tapanuli Regency that utilizes NWFPs was predominant at the high school level (47.96%). Only 3.06% of people with tertiary education have had a college education (Figure 3). Even though it was dominated by the high school education level, the villagers preferred to collect and utilize NWFPs from forest areas and carried out other side activities such as seasonal crop farming and other occupations. This is due to the limited skills and jobs that make people have no choice only to utilize the natural resources around them. The level of education will affect the utilization of NWFPs. Education will affect mastery of technology and skills. These NWFPs are a resource that requires more expertise to collect and produce [19].

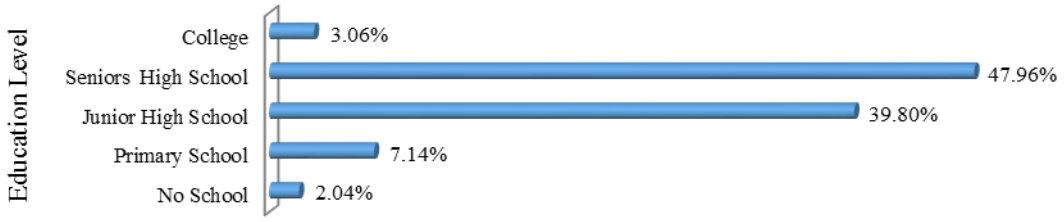

Figure 3 Percentage of Education Level of Villagers Around the Forest Using NWFPa

Community interaction can affect the size of the use of NWFPs for rural communities. The interaction around the forest in five Districts in North Tapanuli Regency is categorized into five sections from very infrequently to very often. The results showed the intensity of going in and out of forest areas based on the length of days farmers spend in the forest. Village communities around the forest in five Districts in North Tapanuli Regency spend time in the jungle generally more than 5-6 days, which is 38.78% as well as 3-4 days (Figure 4). The interaction around the forest shows the level of community dependence on the forest area. The high dependence of the community on the forest can affect the income level of the community that collects forest products. People who have better access to the forest have a relatively higher total forest income.

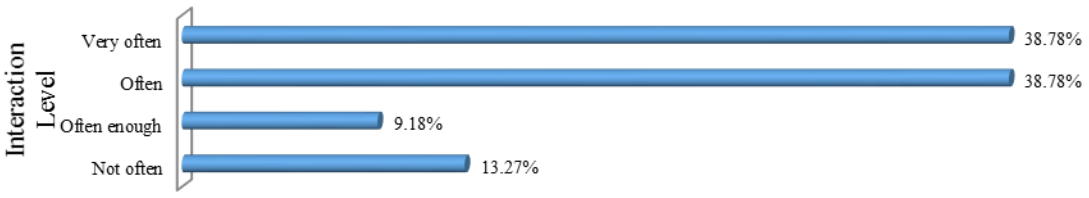

Figure 4 Percentage of Interaction Level of Village Communities Using NWFPs with Forest Areas

Interviews with village communities resulted in the predominant family member is consisting of 5-6 people (44.90%) and the smallest comprising of only 1-2 people (3.06%). A number of an adult within family members (according to Act 3/2003), adults were people aged a minimum of 18 years or already married), the highest was 3-4 people (48.98%), and the smallest was 5-6 people (6.12%) (Figure 5). The data was collected from several family members and adults are the characteristics. Since the collection and utilization of NWFPs were generally influenced by this stuff. The higher the number of family members, the higher the need for NWFPs. Meanwhile, the number of adult family members affects the workforce which can help find additional income. The size of the number of family members affects the increase and utilization of forest resources, the larger the family, the greater the availability of labor. The number of workers who work to utilize forest resources has a direct effect on the amount of forest resources used and the amount of family income. It is related to the amount of costs that must be incurred for household consumption costs. However, on the other hand, not all family members can take advantage of NWFPs because some family members are not old enough and are elderly [13].

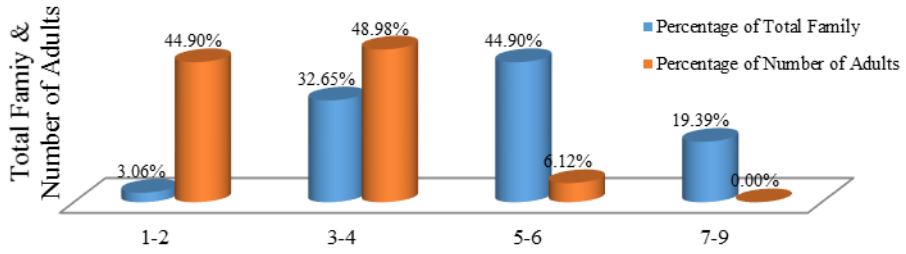

Figure 5 Presentation of the Total Number of Family Members and Number of Adults in Village Communities Around the Forest

Interviews conducted with village communities around the forest in five Districts resulted in eight types of work carried out by village communities. The secondary and primary occupations of the respondents studied were seasonal crop farmers, forest farmers, civil servants, private sector (journalists), village officials, and others such as handymen and drivers, and other casual daily workers (Figure 6). The type of work will generally affect the monthly income level of the village community. Poor households depend on non-agricultural income (forest) while upper-middle-class households have other incomes outside of NWFPs, such as agriculture and animal husbandry [20].

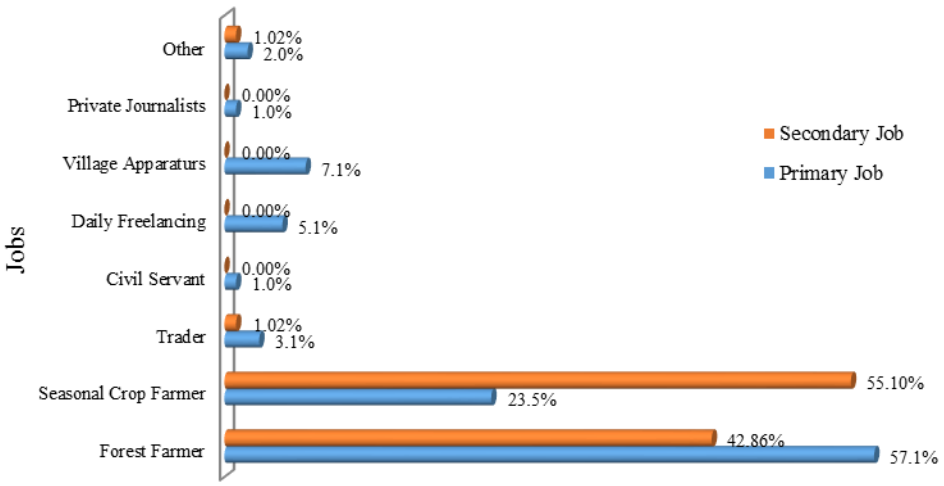

Figure 6 Percentage of Jobs for Villagers Around the Forest

The level of income outside of NWFPs for village communities around forest areas in five Districts in North Tapanuli Regency was the highest (43.88%) in the range of IDR 1,000,000 - IDR 2,000,000 per month (Figure 7) while the income range of IDR 3,000,000 per month and above was 3.06%.

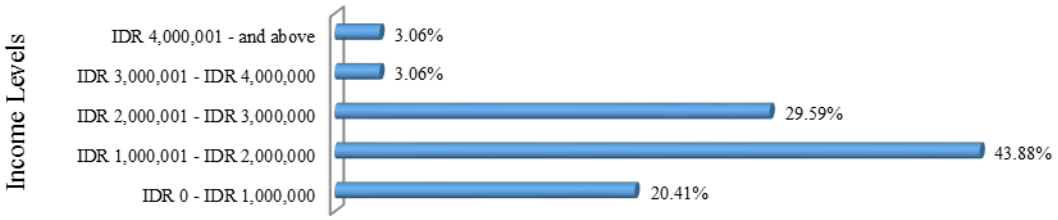

Figure 7 Percentage of Income Levels Outside NWFPs for Village Community

3.1 Types and Potential Utilization of NWFPs in North Tapanuli Regency

The main reason for forest communities in the five Districts of North Tapanuli Regency to collect and use NWFPs is because of their availability in nature and the location of the forest area not far from where they live. The results of interviews with village communities around the forest found that the potential of NWFPs that were utilized by communities living around the forest was 42 species which were grouped into 10 groups of NWFPs based on Minister of Forestry Rule or Permenhut No.35/2007 (Table 1).

Table 1 Distribution of NWFPs Groups Based on the Ministry of Forestry Rule No. 35/2007

No.	Group	Found Type in North Tapanuli Regency	Local Name	Use
1	Resin and Gum	*Styrax sp., Pinus merkusii, Hevea brasiliensis*	Haminjon, Tusam, Karet	Sold as the main and additional income

No.	Group	Found Type in North Tapanuli Regency	Local Name	Use
2	Palm and Bamboo	*Bambusoideae sp., Calameae sp., Daemonorops draco*	Bambu, Rotan, Jernang	Handicraft materials such as chairs, gates, and cattle pens, bamboo shoots are consumed as food ingredients. Pakkat or young rattan is used as food. Clean fruit is consumed as a source of vitamin c.
3	Decorative plants	*Diplazium esculentum, Orchidaceae spp., Areca catechu, Cyrtostachys renda, Ficus benjamina*	Pakis, Anggrek, Pinang, Pinang Merah, Beringin	Pakis is consumed as a vegetable, areca nut consumed for nyirih, ornamental plants, and ornamental plants during large religious celebrations such as Christmas
4	Medicinal plants	*Etlingera elatior, Saurauia bracteosa DC, Gaultheria leucocarpa, Syzygium polyanthum, Piper aduncum, Pogostemon cablin, Cymbopogon nardus (L.), Cinnamomum verum*	Kecombrang, Pirdot, Sae-sae, Daun Salam, Sirih Hutan, Nilam, Sangge-sangge Babi, Kulit Manis	Consumed to cure disease
5	Carbohydrate	*Auricularia auricula-judae, Colocasia Esculenta, Arenga pinnata*	Jamur Kuping, Suhat, Aren Nira	Tubers and mushrooms are consumed as food, palm sugar is used for the ingredients of making tuak (alcoholic drinks)
6	Fruits	*Parkia speciosa Archidendron pauciflorum, Durio zibethinus, Ananas bracteatus, Cucumis sativus L, Flacourtia rukam, Flacourtia rukam, Tamarindus indica, Arenga pinnata* fruit	Pete, Jengkol, Durian, Nanas Hutan, Antimun Bodat, Buah tatada, Alpukat, Asam Jawa, Aren Buah	Sold as the main and additional income, consumed as food,
7	Fat Oil	*Aleurites moluccanus*	Kemiri	Consumed as cooking ingredients
8	Tannin	*Uncaria gambir* Roxb	Gambir	The leaves are consumed for medicine stomach acid
9	Game Animals and Animal Products	*Sus scrofa*, *Apis dorsata*, *Aves sp.* (varied), *Cissa thalassina*, *Cinnyris jugularis*, *Poksay* bird, *Chloropsis sonnerati*, *Cissa thalassina*, *Jalak* bird	Babi Hutan, Lebah, Burung, Burung Ekek Keling, Burung Madu, Burung Poksay, Burung Murai Daun, Burung Tasking, Burung Jalak	Pigs are consumed as food and sold for additional income, honey is consumed as medicine and sold for additional income, birds are partially sold and partly maintained.

3.2 Contribution of NWFPs used by Communities Around the Forest in North Tapanuli Regency to Income

The calculation of income from NWFPs located in forest areas is part of the contribution value of forest resources. One of the aims of calculating the economic value is to link the interests of natural resource conservation and economic development. The economic value of the utilization of NWFPs is obtained by multiplying the value of the benefits of each type of NWFP utilized by the village community (IDR/unit) by the volume of utilization carried out by each village community (unit). NWFPs used by village communities around the forest are mostly valued based on the market price approach, but for some benefits, such as NWFPs, which do not have a market price, they are calculated based on the consideration that time is a resource. This method assumes that the decision to spend time collecting NWFPs is weighed against alternative uses of productive labor [16].

The total economic value of using NWFPs in five Districts of North Tapanuli Regency is IDR 12,277,274,450 per year. Sipaholon District is the largest District that has had the economic value of using NWFPs, which was IDR 4,937,760,000/year, followed by Sipahutar (IDR 2,047,248,500/year), Garoga (IDR 2,016,239,250/year), Adiankoting (IDR 1,643,214,000/year) and Pangaribuan Districts (IDR 1,632,813,700/year), respectively. The resin and gum group was the NWFP group which had the largest economic value of utilization, which was 83.364% or IDR 10,234,793,000/year. The other NWFP groups were included carbohydrate group (5.150%) or IDR 1,860,006,000/year, fruit group (0.445%) or IDR 54,646,000/year, game and animal products (0.373%) or IDR 45,765,000/year, group of medicinal plants (0.340%) or IDR 41,690,750/year, the palm and bamboo group (0.195%) or IDR 23,897,700, ornamental plant group (0.115%) or IDR 14,174,000/year, the fatty oil group (0.016%) or IDR 1,983,000/year, and as the smallest of the tannin group (0.003%) or IDR 318,000/year, respectively.

By comparing people's income from NWFPs of IDR 12,277,274,450/year with people's incomes from outside of NWFPs of IDR 2,420,400,000/year, then the largest income obtained by rural communities comes from NWFP income with a difference of IDR 9,856,874,450/year or NWFPs contribute to the income of communities around the forest by 74.9% of income outside of NWFPs (Table 2). It shows that the village communities around the forest in the five Districts have had a high level of dependence on NWFPs to meet the needs of people's lives, both as their primary income and just to fulfill their daily needs. This is following the statement [21] that 71% of respondents in Mukwe Village, Kavango, Namibia depend on NWFPs for their diverse livelihoods, where this dependence is influenced by the type of work, length of stay in the village and number of people in the household. The types of NWFPs used by the local community are fruits, mushrooms, honey bees, insect worms, medicinal plants, wild meat, rope, and reeds.

Sipaholon District is the area that has the highest dependence on forest areas because income from NWFPs accounts for 93.3% and 90.3% of their income, respectively. It is because the local community makes the collection of pine resin NWFPs their main job in addition to farming seasonal crops. It can also be seen from the interaction of the people of Sipaholon District who can spend time in the forest for six days a week. On the contrary, the lowest is in Garoga and Pangaribuan Districts. Parsosoran Village is one of the villages that has a low level of dependence on NWFPs, namely 22.3%, followed by Lobu Sonak Village, Pangaribuan District, which is 38%. It is because the village community makes NWFP collection activities additional work. After all, seasonal crop farming is the main job in the District. In addition, the type and amount of NWFPs taken by the people of Garoga District is low compared to other Districts.

NWFPs have a significant role in household income and contribute 24% of the average income of Indigenous peoples in Peninsular Malaysia [22]. The low contribution of NWFPs is due to people switching from NWFP-based income to plant-based income due to poor sustainable forest management and lack of forest ownership rights. The details of this income and the contribution of each income are in Table 2.

The very high contribution of NWFPs to the income of rural communities generally occurs in people who do not own their agricultural land and do not have permanent jobs or even do not have other jobs besides taking NWFPs. Meanwhile, NWFP users with very low levels of dependence are people who have permanent jobs and agricultural land. Thus, the income from Forest Natural Resource (SDAH) is only as additional income. NWFPs help 20% of households in the Metema and Quara Districts of the Amhara region of Ethiopia to stay above the poverty line. In addition, the study shows that age, household size, land ownership, cooperative membership, per capita income, and access to extension services affect household dependence on NWFPs [23]. In the South Nandi forest, around 90% of household heads benefit from the forest. The results of the study revealed that there were socio-economic variables related to the dependence of the household head on NWFPs, namely the distance from the village to the forest, time spent by households collecting NWFPs, NWFP stock conditions, membership in community forest associations, the main source of income, marital status, and ethnicity [24].

Table 2 Contribution of NWFPs to the Income of Village Communities Around the Forest of North Tapanuli Regency

District	Village	Income outside of NWFPs/month (IDR)	Income outside of NWFPs/year (IDR)	NWFP income/year (IDR)	Total (IDR)	Contribution of NWFP (%)
Adianko-ting	Dolok Nauli	5,700,000	68,400,000	289,605,500	358,005,500	80.9
	Pansur Batu I	10,500,000	126,000,000	610,575,000	736,575,000	82.9
	Pagaran Lambung III	7,900,000	94,800,000	743,033,500	837,833,500	88.7
Sipahu-	Siabal-abal III	20,000,000	240,000,000	856,948,750	1,096,948,750	78.1

District	Village	Income outside of NWFPs/month (IDR)	Income outside of NWFPs/year (IDR)	NWFP income/year (IDR)	Total (IDR)	Contribution of NWFP (%)
tar	Tapian Nauli II	9,000,000	108,000,000	154,700,750	262,700,750	58.9
	Sabungan Ni Huta III	12,800,000	153,600,000	1,035,599,000	1,189,199,000	87.1
Sipaho-	Simanungkalit	20,000,000	240,000,000	3,317,760,000	3,557,760,000	93.3
lon	Hutauruk	14,500,000	174,000,000	1,620,000,000	1,794,000,000	90.3
Garoga	Parinsoran	11,500,000	138,000,000	395,735,250	533,735,250	74.1
	Padang Siandoman	5,900,000	70,800,000	629,184,000	699,984,000	89.9
	Parsosoran	11,000,000	132,000,000	37,857,500	169,857,500	22.3
	Lontung Jae II	13,000,000	156,000,000	258,956,000	414,956,000	62.4
	Aek Tangga	11,000,000	132,000,000	694,505,500	826,505,500	84.0
Pangari-	Silantom Julu	11,200,000	134,400,000	465,249,200	599,649,200	77.6
buan	Purba Tua	15,500,000	186,000,000	502,985,000	688,985,000	73.0
	Lobu Sonak	13,200,000	158,400,000	97,219,500	255,619,500	38.0
	Pansur Natolu	9,000,000	108,000,000	567,360,000	675,360,000	84.0
Total		201,700,000	2,420,400,000	12,277,274,450	14,697,674,450	83.5
Difference between NWFP Income and Non NWFP Income				9,856,874,450	Mean of Total Contribution	74.9

4 Conclusions

The potential of NWFPs that are utilized by village communities around the forest in 5 Districts of North Tapanuli Regency is 42 species. The total economic value of using NWFPs in 5 Districts of North Tapanuli Regency is IDR 12,277,274,450 per year so NWFPs contribute to the income of village communities around the forest in 5 Districts of North Tapanuli Regency by 74.9% of income outside of NWFPs. This shows that the village community around the research forest has a high level of dependence on NWFPs to meet the needs of people's lives. So that forest resources in the forest management unit area in North Tapanuli Regency can continue to benefit in the corridor of its function, as well as being distributed fairly in the community, the recommendations of this study is a management model is needed which contains the ecological function of forest areas, the potential of natural resources, and forms of economic use by the community and the role manager. In addition, it is necessary to make efforts to approach, foster, assist, and participatory counseling to the village community around the forest to want to conduct cooperation relations between FMUs and the community in terms of community partnerships in the form of Forest Farmers Groups or Kelompok Tani Hutan (KTH).

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