Types and benefit of non timber forest product for community around the forest

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Abstract. Community dependence on logging forest resources which exceeds the carrying capacity limit. The existence of natural resources in the form of Non-Timber Forest Products can directly reduce the exploitation of timber forest products. Method of data collection were interview technique and field observation. The results showed that the types of non-timber forest products (HHBK) that have economic potential are sugar palm (Arenga pinnata), patchouli (Pogostemon cablin), cinnamon (Cinnamomum verum), frankincense (Sytrax benzoin), rubber (Hevea brasiliensis) and areca nut (Areca catechu).

1. Introduction
Non-timber forest products are one of the forest resources that have a comparative advantage and are in direct contact with communities around the forest [1]. According to [2] the community can utilize NTFPs for household or industrial purposes in the form of: food or additives, seeds, mushrooms/fungi, fruits, herbs, herbs and spices, aromatic plants, fiber (used for construction, furniture, clothing or equipment), resin, rubber, plants and animals used for medicine, cosmetics and ceremonial purposes (religion and culture). By utilizing NTFPs, the community can directly reduce the exploitation of timber forest products [3].

Management of non-timber forest products based on local wisdom in North Sumatra will be optimal, and its availability will continue if adequate information is available on the types of NTFPs and their benefits.

2. Materials and methods
The research location in Tarlola and Bulusoma village, located in Forest Management Panyabungan Region, Mandailing Natal Regency, North Sumatra. Data collected using field surveys of the people who used NTFPs around the forest area during June-July 2020. Field data collected in the study area is by interviewing households directly, in the form of a questionnaire about the identity gender, age, number of family members, level of education, type and use of NTFPs. The data obtained were then tabulated and analyzed quantitatively. The number of respondents sampled is as follows:
1) If the total population is ≤ 100 heads of families who take NTFPs, then all respondents are taken.
2) If the number of respondents> 100 heads of families who took NTFPs, then 10% -15% of the population of the total heads of families who took HHBK were taken.
3. Results and discussion

3.1. Identities respondent

Respondents in this study were people in Tarlola and Bulusoma villages who utilized non-timber forest products (HHBK). The majority of respondents who use non-timber forest products (HHBK) are men. Meanwhile, based on age group, respondents who mostly used NTFPs were in the 41-60 year age class as many as 22 families (67%). This range includes the category of productive age which indicates that theoretically all respondents have a greater productivity when compared to those who are not in the productive age category [1,4]. Based on the number of family dependents, respondents who used a lot of NTFPs had family dependents ≥5 people, namely 18 families (55%). Based on the education level, the majority of the people of Tarlola and Bulusoma Villages who utilize NTFPs with an elementary education background are 15 families (45%) or it can be said that the education for HHBK users is low [2,3].

Table 1. Identities respondent.

| No | the identity of the respondent | number of respondents | Percentage (%) |
|----|--------------------------------|-----------------------|----------------|
| 1  | sex                            |                       |                |
|    | - Male                         | 32                    | 97             |
|    | - Female                       | 1                     | 3              |
| 2  | Age                            |                       |                |
|    | - <30 year                     | 1                     | 3              |
|    | - 31-40 year                   | 6                     | 18             |
|    | - 41-60 year                   | 22                    | 67             |
|    | >60 year                       | 4                     | 12             |
| 3  | Number of family dependents    |                       |                |
|    | - 1-4 people                   | 15                    | 45             |
|    | - ≥5 people                    | 18                    | 55             |
| 4  | Education                      |                       |                |
|    | - primary school               | 15                    | 45             |
|    | - middle school level          | 5                     | 15             |
|    | - high school                  | 11                    | 33             |
|    | - College                      | 2                     | 6              |

3.2. Types of non-timber forest products (HHBK) have economic value

The types of non-timber forest products used by the community based on the results of field research can be show in Table 2. Economically, forests are able to provide added value to the surrounding community by utilizing and selling non-timber forest products [4,5]. The dependence of rural communities around the forest on the existence of forest resources can be seen from the number of people who use the forest as a source of work and income [6-8].

The most widely used HHBK commodity by respondents was lemongrass (50%) or 20 households, while the type of commodity that had the least was *Styrax benzoin* and *Areca catechu* (3%) or as much as 1 household. The second type of forest product that is widely used by the community is Aren (Arenga pinnata) with a percentage (20%). The forest products that are then used are Cinnamon (Cinnamomum verum) by (10%), Rubber (Hevea brasiliensis) by (8%), and respectively (3%) for Frankincense (Boswellia sacra) and Areca (Areca catechu).

People use forestry in the form of fruits, leaves, sap, palm fiber. NTFPs provide benefits for daily life in the form of food, drinks, medicines, cosmetics, appliances and household. Non-timber products have an important role to play in meeting community needs, both through non-market and market
facilities [8]. This can increase the role of Non-Timber Forest Products (HHBK) in the daily life of local communities [9]. Community interaction with the natural environment in the form of forests is a manifestation of the socio-economic activities of Village communities around the forest in order to meet their daily needs [10]. In their daily life, forest communities need the existence of forests to fulfill their daily needs.

| No | Types of NTFPs | NTFPs part used | Benefit | Total NTFPs Beneficiary | Percentage (%) |
|----|----------------|-----------------|---------|------------------------|-----------------|
| 1  | Sugar palm     | Fruit,          | Palm Sugar: Overcoming the problem of anemia, increasing body immunity, preventing cancer, improving heart health, and digestive system, used for the roof of the house | 8             | 20              |
| 2  | Rubber         | sap             | Reducing greenhouse emissions, supporting the performance of synthetic industries, and creating jobs. | 3             | 8               |
| 3  | Cinnamon       | Wood, bark      | Seasoning. Rich in antioxidants, lowers the risk of heart disease, lowers blood sugar levels and has a good effect on neurodegenerative diseases. | 4             | 10              |
| 4  | Frankincense   | sap             | As a perfume, aromatherapy, and cosmetic ingredients. | 1             | 3               |
| 5  | Patchouli      | Stem, leaves    | As an essential oil, relieves and treats headaches, treats dysentery, maintains immunity and can be processed into perfume | 3             | 8               |
| 6  | Areca nut      | Fruit, root     | overcomes digestive problems, eliminates toxins in the body, increases appetite, | 1             | 3               |
| 7  | Lemongrass     | leaves          | As an essential oil, antiseptic medicine, relieves headaches, treats insect bites, and relieves itching on the skin. | 20            | 50              |

4. Conclusions

The types of NTFPs that were used by the people of Tarlola and Bulusoma Villages based on the largest to the smallest order were citronella (Cymbopogon nardus) (75.06%), followed by sugar palm (Arenga pinnata) (12.38%), then patchouli (Pogostemon cablin) (5.18%), cinnamon (Cinnamomum verum) (4.23%), frankincense (Stryax benzoin) (1.55%), rubber (Hevea brasiliensis) (1.40%), and the smallest is areca nut (Areca catechu) (0.21%). In their daily life, the community around the forest needs the existence of the forest to fulfill their daily needs.
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