Community dependence on biodiversity of food sources around the protected area of Mount Jampang forest as a form of conservation and sustainable development in Garut Regency

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Abstract. The natural resources and the environment need to be considered the capital for national development and, at the same time, support living systems. Sustainable natural resources will ensure the availability of sustainable resources for products. In addition, a beautiful living environment will improve the quality of human life. Therefore, to realize an advanced, independent, and just Indonesia, Indonesia must manage natural resources and the environment in a balanced way to ensure the sustainability of national development. This study was conducted on communities around the forest area of Mount Jampang to reveal the crucial roles of biodiversity as food sources for the sustainability of local communities' livelihoods on forest product resources and their conservation. In this study, the population was the communities around the forest in Garut Regency. Samples were selected using a purposive sampling technique. Data were collected using in-depth interviews. The collected data were analyzed using a descriptive qualitative method to obtain a systematic and accurate description. For the results of this study, the researchers successfully recorded 97 plant species from 49 families. These plants have dominated by Zingiberaceae and Poaceae (8 species), Araceae and Moraceae (6 species), Solanaceae (5 species), Araceae (4 species), Fabaceae, Euphorbiaceae, and Musaceae (3 species), Acanthaceae, Lauraceae, Rosaceae, Araliaceae, and Theaceae (3 species), and Smilacaceae, Chloranthaceae, Begoniaceae, Cannaceae, Cucurbitaceae, Convolvulaceae, and others (1 species). The results of plant utilization indicated that the number of wild food plants was more widely used (64.94%) than that of cultivated food plants (35.05%). It means that the community dependence on biodiversity resources around the protected forest area is sufficiently high.

Keywords: Biodiversity, Mount Jampang, South Garut, West Java.

1. Introduction

Biodiversity and the environment have an important role because they provide various benefits to support human life, including food, health, and energy. In addition, they also provide ecosystem services whose functions are difficult to replace. The benefits of biodiversity directly or indirectly contribute to human well-being so that it represents a portion of the total economic value. However, the monetary value of these ecosystem services cannot be estimated because most ecosystem services are not adequately reflected or quantified in the commercial market. Although its importance has not always
been influential in the market, biodiversity is valuable for present and future generations. Conservation efforts and their sustainable use are the cornerstones of sustainable development; for the conservation and sustainable use of biodiversity to be compared with other economic activities, the economic benefits of biodiversity need to be stated explicitly [1].

Tracing traditional knowledge in utilizing the biodiversity of food plants is the first step in building Indonesia’s food sovereignty, starting from local food self-sufficiency. According to Loring & Gerlach [2], food plants and culture have a close relationship, so that it had used to determine the level of food security in a particular area. In addition, an ethnobotanical approach can contribute to the process of recognizing the natural resources of a specific site by documenting the local wisdom of the surrounding community [3]. Consumption value is the value of the benefits of biodiversity. Consumption value is a direct benefit obtained from biodiversities, such as food, clothing, and shelter. One of the efforts to prevent the degradation of traditional knowledge is through conducting ethnobotanical studies. Concerning these studies, Indonesian people can use ethnobotanical knowledge to indicate the sustainable use of forest plants [4].

Natural resources and the environment need to be considered the capital for national development and, at the same time, support living systems. Sustainable natural resources will ensure the availability of sustainable resources for products. Therefore, the protected forest area of Mount Jampang is a natural resource that can become the backbone of the provider of food sources and support the living system of the surrounding community. Community dependence on the biodiversity of food sources around the protected forest area of Mount Jampang is a form of conservation and sustainable development in the Garut Regency.

Many studies have examined the relationship between culture and plants. In addition, quantitative methods play an important part in measuring the application of developing ethnobotany [5]. For this reason, a critical value approach to a type of food plant becomes the basis for measuring traditional knowledge. According to Zent [6], traditional knowledge includes material infrastructure, social structure, and social superstructure as a reference in measuring the retention of knowledge of food plants in the community around Mount Jampang.

The local wisdom has explored using this study of the community about the biodiversity of food sources around the protected forest area of Mount Jampang as a form of conservation and sustainable development in Garut Regency by measuring the value of the use of crucial traditional food plants (cultural food significance index and cultural food cultivated index) in Cikopo, Gunung Jampang Village, Bungbulang.

2. Study Site and Methods

2.1. Research location

This study was conducted in Cikopo, Gunung Jampang Village, Bungbulang, South Garut Regency, West Java Province. Cikopo is directly adjacent to a protected forest area. This research location has a hilly and mountainous topography with a steep hillside. Its coordinates are -7.35994 S and 107.61773 E. Its altitude is about 296 – 1,167 meters above sea level. The majority of the population is Sundanese, Muslim, farming, gardening, and gathering forest products. Bungbulang district has an area of about 15,222.7 Ha. A population of 4.3 people inhabits each square kilometre. This district has a relatively low population because only 4.3 people occupy each square kilometre on average, with an uneven distribution in each village. The highest population density level had found in Bungbulang Village, which every kilometre reaches 18.5 people. Meanwhile, the lowest population density level is in Gunung Jampang Village, inhabited by about one person per km² [7]. Figure 1 explains the map research location.
2.2. Research methods

Data collection had been carried out by participatory observation and interviews. In this study, a purposive sampling technique considering age and gender had been used. The number of respondents was 30 people divided into five age categories, namely category I (< 25 years), category II (25 – 39 years), category III (40 – 54 years), category IV (55 – 69 years), and category V (> 69 years). The 15 years interval had been used to observe changes in the retention of traditional knowledge [6]. Furthermore, participatory observation had been conducted by recording the activities carried out systematically [8]. In this study, the researchers applied semi-structured interviews and structured interviews to collect information about names of local plants found, parts of the plants used, benefits of the plants, and ways of using the plants. As a result, informants understood the use of the plants and were chosen based on information from community leaders, traditional leaders, village heads, and local communities.

The collected data were analyzed descriptively and presented in the form of tables and graphs. Analysis of quantitative data had been carried out using the Cultural Food Significant Index (CFSI) [5]. Data concerning the local wisdom of food plants in Cikopo were analyzed using qualitative and quantitative descriptive methods based on primary and secondary data. Data on food plant species were tabulated and then analyzed quantitatively.

\[
\text{CFSI} = \text{QI} \times \text{AI} \times \text{FUI} \times \text{MFFI} \times \text{TSAI} \times \text{FMRI} \times 10^2
\]

- **CFSI**: Cultural Food Significant Index (species of important traditional food plants)
- **QI**: Quotation Index (the level of how often the food plant had mentioned)
- **AI**: Availability Index (the level of availability of the food plant)
FUI : Frequency of Use Index (frequency of use of the food plant)
PUI : Part of Use Index (part of the food plant used)
MFFI : Multi-Function Food Use Index (diversity of use of the food plant)
TSAI : Taste Score Appreciation Index (the level of taste and preference of the food plant)
FMRI : Food Medical Role Index (the level of use of the food plant for medical purposes)

3. Results
3.1. Overview of research location
Bungbulang is a mountainous area. Its natural conditions are hilly. Its lowest surface from the sea is 296 – 1,167 MASL. In addition, most of the land surface has a relatively steep slope. One of the villages in Bungbulang is Gunung Jampang Village, which is the remotest village or can be categorized as a small village because the journey to get to this location is quite dangerous. The road for going to this location is rocky, slippery, and steep. Because of these road conditions, there is no public transportation going to this village, except trucks and dirt bikes. For these reasons, the daily needs of the community are often late or even tricky to find. In addition, the prices of the products of their daily needs are pretty high. Meanwhile, most people who live in this location only work as farmers who rely on existing resources. The incurred cost for using transportation facilities to get to the district's centre is quite expensive, with a motorcycle taxi fare of 100,000 IDR/person (7-hour ride) or a truck taxi fare of 50,000 IDR/person (4-5-hour drive), in good weather condition travel time is estimated. However, people are usually not able to stand that long in a standing condition. Their rocky path makes them oscillate quite hard. On foot, a researcher can reach the centre of the district in about ± 25 hours.

Gunung Jampang Village is bordered by Pangalengan District, Bandung Regency, and Pamulihan District in the north. Pakenjeng District borders it in the east. Mekarmukti District and the Indian Ocean edge it in the south. Furthermore, in the west, it is bordered by Caringin District and Cisewu District.

3.2. Biodiversity as a traditional food source for the people of Gunung Jampang Village
Dependence on biodiversity as a source of food is a tangible manifestation of the sustainability of their daily lives. Therefore, the community certainly takes care of the protected forest area, used as a source of their food needs. The area supports their lives because the existing plant natural resources are the needs for the continuity of their life. For this reason, they do not disturb the forest area. This local wisdom is a form of conservation without being known by them. They maintain nature and the surrounding environment. Landslides would be the result if they neglected local knowledge, which affects their village. In addition, the community plays a role in maintaining the existence of plant diversity in a sustainable manner [9], [4].

The diversity of traditional food sources used by the people of Cikopo, Gunung Jampang Village is identified as no less than 97 species from 49 families, consisting of 64.94% of wild food plant species and 35.05% of cultivated food plant species. The families of the most species used as food are Zingiberaceae and Poaceae (8 species), Araceae and Moraceae (6 species), Solanaceae (5 species), Araceae (4 species). On the other hand, the families rarely used Fabaceae, Euphorbiaceae, and Musaceae (3 species), Acanthaceae, Lauraceae, Rosaceae, Araliaceae, and Theaceae (3 species), and Smilacaceae, Chloranthaceae, Begoniaceae, Cannaceae, Cucurbitaceae, Convolvulaceae, and others (1 species) (see Figure 2).

Gunung Jampang Village cultivated food plants used by the people had classified into three categories by paying attention to the importance of those food plants. Quantitatively, cultivated food plants were analyzed using a modified equation proposed by Pieroni [5] and Johns [10], as shown in (Table 1). In the table, food plant species with a sufficiently significant value are generally the plants that the community had rarely used in terms of intensity and frequency. Meanwhile, food plant species with substantial value are generally vegetables, medicine plants, spices, tubers, and seeds. Finally, plant species with significant importance are the staple crop, namely rice (Oryza sativa), as seen in Table 1. The community's main food crops include upland varieties of rice that had adapted to cold temperatures.
The community had gained rice seeds from the local agriculture office. In the process of planting, the community had assisted by agricultural extension officers.

![Figure 2](https://example.com/figure2.png)

**Figure 2.** Families of plant species used by the community in Cikopo, Gunung Jampang Village, Bungbulang, South Garut.

The people of Gunung Jampang Village use plants as a food source for the sustainability of their daily life, as reflected in the parts of the plants they use (see Figure 2). The fruit part occupies the most used feature, followed by the leaves, tubers, rhizomes, seeds, roots and the other part of a plant that only one has not seen again. Therefore, the five levels of importance (see Figure 2) would need as wild food plants used by the community in Gunung Jampang Village.

Based on the results of data analysis, wild food plants are classified based on their use which refers to Pieroni [5]. The great food plants in the less critical category are because respondents generally only know a few of their benefits, which are challenging to find. Primary data: 1. most important (1-5), 2. very important (6-11), 3. important (12-20), 4. somewhat important (21-28), and 5. less important (29-35).

Wild food plants, which are very important, are used as vegetables, fruit, and medical plants. Wild food plants, categorized as necessary, are used in small quantities for health medical purposes and to increase family income. A food plant is classified in the most crucial category because the respondents provide much information.

The main food plant is rice (*Oryza sativa*). It is a staple food for the people of Gunung Jampang Village. Therefore, their rice production can be considered sufficient to be consumed for meeting their needs. However, it is also often not enough until the next harvest. In addition, people in this research location need fertilizers for their cultivation. Besides, medicines are also not affordable.
Table 1. Analysis of data of plants by category of food importance.

| No. | Family          | Species                          | Local name         | CFCI  |
|-----|----------------|----------------------------------|--------------------|-------|
| 1   | Poaceae        | Oryza sativa L.                  | Pare               | 337.50|
| 2   | Musaceae       | Musa paradisiaca L.              | Cauk kepok         | 216.00|
| 3   | Musaceae       | Musa paradisiaca L.              | Cauk kapas         | 216.00|
| 4   | Convolvulaceae | Ipomoea batatas L.               | Bolet              | 157.95|
| 5   | Araceae        | Colocasia esculenta L. Shott     | Taleus             | 109.35|
| 6   | Lamiaceae      | Coleus tuberosus Benth.          | Gembili            | 105.71|
| 7   | Rubiaceae      | Coffea Arabica L.                | Kupi               | 97.20 |
| 8   | Marantaceae    | Maranta arundinacea L.           | Garut              | 91.13 |
| 9   | Zingiberaceae  | Zingiber officinale Rosc.        | Jahe               | 81.00 |
| 10  | Areceae        | Cocos nucifera L.                | Kelapa             | 81.00 |
| 11  | Poaceae        | Coix lacryma-jobi L.             | Hajeli             | 72.90 |
| 12  | Caricaceae     | Carica papaya L                  | Gedang             | 72.90 |
| 13  | Poaceae        | Setaria italitica (L.) P. Beauv. | Jawawut            | 70.47 |
| 14  | Zingiberaceae  | Languas galangal (L) Stuntz      | laja               | 67.86 |
| 15  | Solanaceae     | Capsicum frutescens L.           | Cengek             | 67.50 |
| 16  | Zingiberaceae  | Curcuma longa L.                 | Koneng             | 63.18 |
| 17  | Lauraceae      | Persea americana Mill            | Pokad              | 54.68 |
| 18  | Moringaceae    | Moringa oleifera Lam.            | Kelor              | 53.82 |
| 19  | Zingiberaceae  | Kaemferia galangal L             | Cikur              | 47.39 |
| 20  | Poaceae        | Sorghum vulgare                  | Sorghum            | 40.50 |
| 21  | Zingiberaceae  | Zingiber zerumbet (L.) Rosco ex Sm | Lempuyang         | 35.89 |
| 22  | Anacardiaceae  | Mangifera odorata Griff          | Kuwini             | 35.24 |
| 23  | Zingiberaceae  | Curcuma xanthorrhiza Roxb.       | Koneng geuene      | 34.32 |
| 24  | Amonaceae      | Amona muricata L.                | Pohon nona         | 27.34 |
| 25  | Moraceae       | Durio zibethinus Merr            | Durian             | 24.30 |
| 26  | Moraceae       | Artocarpus heterophyllus Lam.    | Nangka             | 24.30 |
| 27  | Poaceae        | Gigantochloa atter (Hassk) Kurz  | Awi tali           | 23.29 |
| 28  | Lauraceae      | Cinnamomum burmani(Nees.)Bl.     | Kayu Manis         | 22.50 |

Note: Highly important (1), important (2-17), and sufficiently important (18-28)

Figure 3. Plant parts used by the community in Gunung Jampan Village.

Furthermore, the land available for agriculture is not too large. Because most of the areas of Bungbulang District are tea plantation areas belonging to PTPN VIII Samadra, most of the people in this district work in the plantation as tea pickers. However, the people who live in Gunung Jampan Village work by farming, gardening, and gathering forest products. The developed commodities in this area are cardamom, ginger, and coffee. Despite that, the marketing of these commodities had hampered by a communication signal that is quite difficult by considering the price and transportation conditions that are difficult and expensive to transport their developed things. Therefore, the results of their cultivation are sold to mediators at low prices because they cannot sell their cultivation products.
Table 2. Analysis of data of plants by category of food importance.

| No. | Family            | Scientific name                                      | Local name     | CFCI   |
|-----|-------------------|------------------------------------------------------|----------------|--------|
| 1   | Araliaceae        | Hydrocotyle sibthorpioides Lamk.                     | Antanan leutik | 177.84 |
| 2   | Amaranthaceae     | Amaranthus spinosus L.                               | Bayam duri     | 144.00 |
| 3   | Araceae           | Xanthosoma sagittifolium (L.) Schott                | Kimpul         | 140.40 |
| 4   | Araliaceae        | Schefflera aromatica (BL.) Harms.                   | Cerem          | 138.85 |
| 5   | Areceae           | Arenga pinnata Wurm.                                 | Kawung         | 135.00 |
| 6   | Apiaceae          | Centella asiatica Urb.                              | Antanan        | 134.64 |
| 7   | Urticaceae        | Pilea melastomoides (Poir.) Wedd.                   | Poh-pohan      | 109.35 |
| 8   | Solanaceae        | Solanum nigrum L.                                   | Leunca         | 101.25 |
| 9   | Solanaceae        | Solanum ferox L.                                    | Karundung      | 91.26  |
| 10  | Fabaceae          | Parkia speciosa Hassk.                              | Mlanding       | 91.26  |
| 11  | Fabaceae          | Phaseolus calcarantus Roxb.                          | Kenyut         | 69.86  |
| 12  | Acanthaceae       | Andrographis aniculata (Burm.f.) Wall.ex Nees       | Sambiloto      | 69.30  |
| 13  | Chloranthaceae    | Chloranthus officinalis Bl.                          | Heuras tulang  | 67.86  |
| 14  | Araceae           | Alocasia sp.                                         | Salempat       | 62.40  |
| 15  | Solanaceae        | Cyphomandra betacea (Cav.) Sendtn                   | Terong walanda | 62.37  |
| 16  | Dioscoreaceae     | Dioscorea bulbifera                                 | Huwi gantung   | 58.73  |
| 17  | Zingiberaeae      | Amomum compactum Solan.ex Maton.                    | Kapolaga       | 56.25  |
| 18  | Solanaceae        | Solanum torvum Swartz                               | Takokak        | 50.02  |
| 19  | Euphorbiaceae     | Ricinus comunis L.                                   | Kaliki         | 42.12  |
| 20  | Cannaceae         | Canna edulis L.                                      | Ganyol         | 41.01  |
| 21  | Acanthaceae       | Staurogyne elongata Kuntze                           | Reundeu badak  | 40.37  |
| 22  | Asteraceae        | Erechtites valerianifolia Raf.                       | Meyasih        | 39.78  |
| 23  | Selaginaceae      | Selaginella plana                                    | Paku rane      | 37.13  |
| 24  | Araceae           | Schismantoglossis calypetrata (Roxb.) Z. & M.       | Salempat       | 36.86  |
| 25  | Araceae           | Amorphophalus sp.                                   | Iles            | 35.10  |
| 26  | Apiaceae          | Pimpinella javana DC.                                | Antanganungun  | 32.76  |
| 27  | Musaceae          | Musa acuminiata L.                                   | Cauk           | 31.89  |
| 28  | Smilacaceae       | Smilax leucophylla Bl.                               | Buah canar     | 30.38  |
| 29  | Melastomataceae   | Clidemia hirta (L.) D. Don.                          | Harendong      | 16.88  |
| 30  | Poaceae           | Phragmites karka (Retz.) Trin                       | Bayongbong     | 16.20  |
| 31  | Theaceae          | Schima wallichii (DC.) Korth.                        | Puspa          | 15.80  |
| 32  | Cucurbitaceae     | Cyclanthera explodens Naud.                          | Gehger bonteng | 15.53  |
| 33  | Cucurbitaceae     | Cyclanthera explodens Naud.                          | Gehger bonteng | 15.53  |
| 34  | Begoniaceae       | Begonia robusta Bl.                                  | Cariang        | 13.46  |
| 35  | Symplcaceae       | Symplocos cochinicensis (Lour.) More                 | Putat          | 12.62  |

Dependence on food as a source of carbohydrates other than rice they get around the forest edges. Papua have several types of local specific food sources, such as sweet potatoes, gembili, sago, and barley [11]. Furthermore, previous researchers' local food identification results showed the potential in Kulon Progo Regency, DIJ. Yogyakarta is the tuber of canna, kimpul and gembili [12].

Local foods used by the community in Gunung Jampang Village are bolet (Ipomoea batatas), taleus (Colocasia esculenta), gembili (Coles tus tuberosus), garut (Maranta arundinacea), jali and jali (Setaria italic), belitug (Xanthosoma sagittifolium), and jali (Coix lacryma-jobi). The diversity of food plants in Gunung Jampang Village is higher than that of a study conducted in Baduy Dalam. In Baduy Dalam, the number of local food plant species used by the community is 46 [13]. Meanwhile, in Mount Halimun Salak National Park, Cisungsang Village, recorded non-rice food plant species are 28 species [14]. The low number of food plant species used by the Baduy community is due to the influence of local culture and the presence of customary rules that forbid the use of any plant except for plants that do not interfere with the soil structure. In Cisungsang Village, the source of food for cultivation is quite a lot, so that the wild food plants have used it rarely.
4. Discussion

4.1. Source of fruit

Several plant species used as fruits, among others, are hoe ompoi (Calamus adspersus), hoe korod (Calamus heteroides), hoe cacing (Calamus javensis), wuni (Antidesma bunius), canar (Smilax leucophylla), hareaus (Rubus fraxinifolius), and durian (Durio zibethinus). Fruit is a non-timber forest product that has the potential for food to source vitamins and minerals. Powell et al. [15] state that fruits serving as food obtained from trees have more widely used. Canar fruit (Smilax leucophylla) is prevalent in which its taste is fresh sour. In addition, this fruit usually is used for making sweets. Another fruit used by the community in the research location is Smilax leucophylla. This fruit is generally sold at 20,000 IDR/kg, making mediators usually come to Gunung Jampang Village during fruit season. Based on a study conducted by Surya et al. [16], the fruit of Rubus fraxinifolius has a high vitamin content, namely vitamin C (83.65 mg/100g), carbohydrates (11.48%), sugar (5.05 g), fibre (6.43%), and caloric value of 45.92. In addition, that other content had known, vitamin C and sugar in R. fraxinifolius is higher than that of different types of rubus (Rubus rosifolius, Rubus chrysophyllus, Rubus pyrofolius, and Rubus idaeus) [16, 17].

4.2. Source of vegetables

The vegetables consumed by the community are the result of cultivation in gardens, fields, yards, and rice fields. Several types of utilized wild vegetables are paku carehem (Diplazium accendens), meyasih (Erechites valerianifolia), salempat (Schismatoglottis calyptrate), kailili (Ricinus communis), paku rane (Selaginella plana), cacarinan (Sauropus androgynus), reundeu (Staurogyne elongate), poh-pohan (Pilea melastomoids), cauk (Musca acuminata), gehger bonteng (Cyclanthera explodeus), and salempat (Schismatoglottis calyptrata). The young fruit of Ricinus communis contains water (80.8%), ash (0.94%), fat (0.047%), protein (0.04%), iron (2.54 mg/100g), vitamin C (9.23 mg/100g), and carotene (11.6 g/100g). For Schismatoglottis calyptrate, its fruit contains water (87.1%), fat (0.7%), protein (3.1%), carbohydrates (7.6%), calcium (79 mg/100g), vitamin C (28 mg/100g), and energy (45 calories). For Cyclanthera explodeus, its fruit contains water (93.3%), ash (0.78%), fat (0.17%), protein (1.18%), iron (1.32 mg/100g), vitamin C (3.02 mg/100g), and carotene (24.1 g/100g). At last, the nutritional content contained in poh-pohan (Pilea melastomoids) leaves per 100 grams are energy (37 calories), protein (2.5 g), fat (0.8 g), carbohydrates (6 g), calcium (744.0 mg), phosphorus (80.0 mg), iron (5.9 mg), vitamin A (900 RE), vitamin C (5 mg), vitamin B1 (0.03 mg), and water (87.4 g) (An Analysis from the Center for Post-Harvest, Agricultural Research and Development Agency, Bogor).

In addition, little vegetables are no less important because they contain vitamins and minerals like cultivated vegetables. For example, leunca is a plant that is useful for natural antioxidants in neutralizing the body affected by radicals. Leunca leaves and fruit for consumption as vegetables. Besides, leunca had also needed as traditional medicine. The leaves of leunca contain a lot of solamargine, solasodine, solandine, saponins, calcium, phosphorus. It also had vitamin E, vitamin A, and vitamin C [18]. The high antioxidant activity in leunca leaf extract is because all the compounds can act as antioxidants. Based on a study conducted by Suhendra [18], the water extract of leunca leaves contains alkaloids, flavonoids, tannins, and saponins. According to Rohman et al. [19], due to the reducing properties of phenolic compounds, phenol has been reported to have antioxidant activity. The results of the proximate test indicate that the leunca fruit contains water (89.53%), ash (7.7%), fat (0.66%), protein (1.72%), carbohydrates by difference (0.39%), and energy (13.03 calories/100g).

4.3. Source of spices/food complements

The use of spices in the community in the research location is not too important because they use only a tiny portion of spices for seasoning. In addition, they also only have a few alternatives for seasoning, such as Cocos nucifera, Curcuma domestica, Kaemferia galanga, and Languas galangal, which they can easily find. Furthermore, the method of processing food ingredients is straightforward. Spices are due to the community's ability to buy various necessities of life that are not affordable. In addition, even families use cooking spices as spices for their daily needs (personal information). However, with local
wisdom in utilizing plants from generation to generation, they can survive because the local food sources they consume contain vitamins and minerals that are not inferior to vegetables grown and sold in the market.

The community in Gunung Jampong Village needs sources of energy and energy needs by tapping the sap of the kawung tree (Arenga pinnata). It will process into kawung sugar. They usually consume the sugar themselves, and if the sap production is sufficient, the kawung sugar had sold around Gunung Jampong Village. The price of sugar kawung in the sub-district is quite expensive, around Rp. 27,500/kg. However, with roads that are damaged, slippery, rocky, and heavy enough to pass, they are usually sold to migrants or mediators who deliberately come to this village to accommodate the residents' agricultural products. The community takes sap from the kawung tree around the forest area without carrying out the cultivation process.

5. Conclusion
The researchers recorded 97 plant species from 49 families in Cikopo, Gunung Jampong Village, Bungbulang, Garut. These plant species are used as food sources, consisting of wild food plants and cultivated food plants. The families of the most species used as food are Zingiberaceae and Poaceae (8 species), Araceae and Moraceae (6 species), Solanaceae (5 species), Araceae (4 species), Fabaceae, Euphorbiaceae, and Musaceae (3 species), Acanthaceae, Lauraceae, Rosaceae, Araliaceae, and Theaceae (3 species), and Smilacaceae, Chloranthaceae, Begoniaceae, Cannaceae, Cucurbitaceae, Convolvulaceae, and others (1 species).

The results of plant utilization indicate that the amount of wild food plants is more widely used (64.94%) than that of cultivated food plants (35.05%). Therefore, it meant that the community dependence on biodiversity resources around the protected forest area was sufficiently high. This dependence on biodiversity resources is a form of conservation and a tangible form of food self-sufficiency in the community to overcome food difficulties for meeting their daily lives.

The average level of knowledge of the use of local food plants in Gunung Jampong Village based on the importance of food ingredients indicates that the lower the significance of the food plant species is, the less the plant is used or rarely used. In other words, the plant species are underutilized, or the informants lack knowledge about the species.

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