Traditional Knowledge and Ethnobotanical Utilization of Edible Plants in The Repong Damar Agroforestry System, Bengkunat Subdistrict, Pesisir Barat Regency, Lampung, Indonesia

Salwa Lathifa Hanun[1], Duryat[1*], Hari Kaskoyo[1], Sugeng P Harianto[1]

[1]*Department of Forestry, Faculty of Agriculture, University of Lampung, Bandar Lampung, 35145, Indonesia*

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***Correspondent Email:** duryat.1978@fp.unila.ac.id

Abstract: *Local food systems in many tropical regions are increasingly threatened by land-use change, declining regeneration of native vegetation, and the gradual erosion of traditional ecological knowledge. These challenges underscore the need to examine the role of traditional agroforestry systems in supporting community food security. This study aims to analyze plant biodiversity, identify edible species used by local communities, and document food-processing methods within the Repong Damar system in Bengkunat Subdistrict, Lampung Province. Vegetation analysis was conducted using the Importance Value Index, while ethnobotanical data were collected through semi-structured interviews and direct field observation. The results show that Repong Damar sustains high biodiversity, with 53 plant species recorded across all growth stages. Nineteen species are utilized as food sources, dominated by fruit-bearing trees consumed fresh or processed into dishes, spices, beverages, and traditional fermented products such as tempoyak. The dominance of Anthshorea javanica at the tree layer indicates a stable multistrata agroforestry structure, while the frequent use of fruits reflects sustainable harvesting practices that do not damage the parent trees. Traditional knowledge preserved across generations continues to guide plant use and management. Overall, Repong Damar plays a strategic role in providing food resources, maintaining cultural continuity, and supporting ecological resilience in Bengkunat.*

Keywords: Repong Damar, ethnobotany, edible plants, biodiversity, agroforestry, traditional knowledge, Bengkunat

1. INTRODUCTION

Food security remains a central concern in Indonesia's sustainable development agenda, despite the nation's long-standing reputation as an agrarian country. In 2023, approximately 8.5 percent of the population experienced undernourishment, indicating persistent vulnerabilities within the national food system (World Food Programme, 2023). These challenges are further compounded by the growing reliance on commercial food products, continued environmental degradation, and the gradual loss of traditional ecological knowledge that once guided communities in managing and utilizing biodiversity for their daily needs (Rozaki *et al*., 2023). Such pressures are intensified by landscape transformation and a decline in native vegetation, which reduce the availability of wild and locally sourced edible plants (Secretariat of the Convention on Biological Diversity, 2020). Meanwhile, traditional ecological knowledge has been shown to play an essential role in sustaining biodiversity, supporting community resilience, and preserving cultural identity (Reyes-García *et al*., 2020). Without proper documentation, much of this knowledge risks being lost.

Amid these challenges, several recent studies point to the importance of local edible plants both cultivated and wild in supporting food diversification and strengthening community level food security. An ethnobotanical survey in West Java identified fifty-three nutritionally valuable edible plant species (Rahayu *et al*., 2024), while research in the Merapi–Merbabu region recorded seventy-four species still used in local daily practices (Umartani & Nahdi, 2021). These studies demonstrate the abundance of local food resources present in rural landscapes. However, they represent only a portion of Indonesia's vast ecological and cultural diversity, particularly considering the number of traditional land use systems across the archipelago that remain undocumented in terms of their edible plant potential.

One such system is the Repong Damar agroforestry landscape in Bengkunat Subdistrict, Pesisir Barat Regency. This traditional multistrata agroforestry system has been maintained for generations under customary rules and cultural practices that shape its ecological structure. While widely recognized for its damar production, Repong Damar also harbors a variety of edible plant species utilized by local communities for daily subsistence. Despite its ecological and cultural significance, scientific information about edible plant use in this system remains limited. Understanding the role of Repong Damar in providing food resources is especially important because its ecological composition and cultural practices are distinct from

those of other Indonesian agroforestry systems, offering insights that have not yet been explored in academic literature.

The relevance of studying edible plant use in Repong Damar becomes even more apparent when considering the broader context of environmental change and increasing pressure on food systems. Traditional ecological knowledge has been shown to support adaptive capacity and socioecological stability, especially in Indigenous and rural communities facing environmental stressors (Reyes-García *et al*., 2020). Agroforestry systems are also increasingly recognized for their contributions to food security, biodiversity conservation, and climate adaptation in tropical regions (Sudomo *et al*., 2023). Furthermore, recent global assessments emphasize the importance of diversifying food sources based on local biodiversity to address emerging food-system challenges and prevent cultural erosion (Food & Agriculture Organization of the United Nations, 2023). Understanding how local communities manage and use edible plants in Repong Damar can therefore provide valuable insights into sustainable food strategies grounded in cultural and ecological knowledge.

In light of these considerations, this study aims to examine the traditional knowledge and ethnobotanical practices related to edible plants within the Repong Damar system in Bengkunat. The study analyzes the diversity of edible plant species present in the area, describes how local communities utilize these species in their daily lives, and documents the methods used to process and prepare plant-based food resources. Through this investigation, the research seeks to deepen the scientific understanding of how traditional agroforestry systems contribute to ecological sustainability, household food security, and the cultural resilience of communities in Pesisir Barat Regency.

2. MATERIALS AND METHODS

2.1 Research Time and Location

This study was conducted from October to November 2025 in Bengkunat Subdistrict, Pesisir Barat Regency, Lampung Province, a region widely recognized as the primary center of the traditionally managed Repong Damar agroforestry system. The area was selected due to its distinct ecological, social, and cultural characteristics, which are highly relevant for understanding the utilization of edible plants within a multistrata agroforestry landscape that has been maintained through customary practices for generations. Several instruments were employed to ensure comprehensive and systematic data collection, including tally sheets for documenting food-plant vegetation, questionnaires for gathering ethnobotanical information, a camera and recorder for field documentation and interview recording, raffia rope and measuring tape for establishing and measuring sample plots, a hagameter for measuring tree height, sample bags for collecting plant specimens, and a plant identification key for determining species based on morphological characteristics. All collected data were processed and visualized using Microsoft Excel to ensure accurate, structured, and easily interpretable analysis. The geographical position of the study area, along with the administrative boundaries of Bengkunat, is presented in Figure 1 to provide a spatial overview of the research setting and the broader Repong Damar landscape.

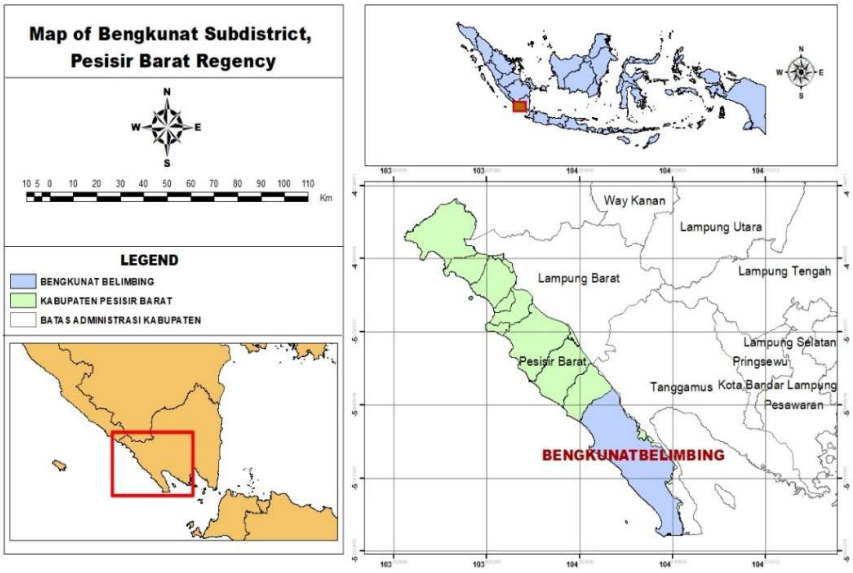

Figure 1. Location of the Repong Damar Agroforestry System in Bengkunat Subdistrict, Pesisir Barat Regency, Lampung Province.

2.2 Sampling Methods

For the vegetation analysis, this study employed a cluster sampling approach, which is widely recommended for heterogeneous landscapes because it aligns sampling units with naturally occurring management divisions and improves representation across ecological gradients (Ewald *et al*., 2020). This approach was particularly appropriate for Repong Damar, where land management differs substantially across the landscape and directly influences vegetation structure and edible-plant availability. Two clusters were therefore defined according to land status and management practices. The first cluster consisted of Repong Damar located on *tanah marga*, customary lands situated outside state forest boundaries and managed through inherited family systems and long-established community norms. The second cluster comprised Repong Damar within Limited Production Forest (*Hutan Produksi Terbatas*, HPT), where land use follows state forestry regulations but remains actively cultivated by local communities for damar and mixed-agroforestry species. Because these two management systems create distinct ecological conditions, cluster sampling provided a structured and ecologically grounded way to capture differences in plant composition and the distribution of edible species.

To explore traditional knowledge and the cultural dimensions of plant use, the study adopted snowball sampling within an ethnographic research design. Snowball sampling is well suited for studies in which knowledge is concentrated among specific individuals who possess deep experience or cultural authority, as it enables researchers to identify key informants through community referrals rather than random selection (Heckathorn & Cameron, 2017). This approach was especially relevant because knowledge about edible plants in Repong Damar is typically retained by elders, customary leaders, and long-term landholders, many of whom serve as cultural custodians of local ecological knowledge. The integration of snowball sampling with ethnography allowed the researcher to engage directly with community members, observe daily practices, and document meanings and traditions associated with plant use elements that are often inaccessible through surveys alone. Ethnography, through immersive and context-sensitive inquiry, provides access to the cultural logic that shapes plant use patterns and supports intergenerational knowledge transmission (Bernard, 2020). Together, these complementary methods generated a detailed understanding of both the ecological and cultural dimensions of edible-plant utilization in the Bengkunat Repong Damar system.

2.3 Data and Parameters

Vegetation analysis was conducted to characterize the structure and composition of plant communities within the Repong Damar system. Data collected included species identity, number of individuals, diameter at breast height (DBH), tree height, and species frequency. DBH and height measurements were used to evaluate species dominance and vertical stratification, indicators that are central to understanding tropical forest dynamics as highlighted by Sheil & Bongers (2020). Species frequency was recorded to assess distribution patterns across plots. Ethnographic data were also gathered to document traditional knowledge related to edible plant use, including species utilized, plant parts harvested, processing methods, daily use contexts, and local land-management practices. An ethnographic approach was employed to capture cultural meanings and practices that extend beyond quantitative ecological data. Snowball sampling was used to identify key informants such as customary leaders and repong owners, as ethnobotanical knowledge is often concentrated among individuals with long-term experience. This approach is consistent with Li *et al*. (2023), who emphasize that plant diversity and the presence of large trees in agroforestry systems are closely shaped by traditional management practices. Collectively, these ecological and ethnographic parameters offer an integrated understanding of the biological and cultural foundations that support edible-plant use within the Repong Damar landscape**.**

2.4 Research Implementation

The implementation of the vegetation study began with the establishment of sampling plots using a nested-plot design combined with random sampling. This approach was applied across two land-use clusters, namely Repong Damar on customary land (*tanah marga*) and Repong Damar within the Limited Production Forest (HPT). Each main plot measured 20 m × 20 m and contained nested subplots designed to capture different growth stages: 10 m × 10 m for pole-stage trees, 5 m × 5 m for saplings, and 2 m × 2 m for seedlings and understory vegetation. Plant species were identified directly in the field with the aid of botanical identification keys, and the number of individuals in each species was recorded on tally sheets. Stem diameter (DBH) was measured at 1.3 m above ground level, with adjustments made for buttressed trees, while tree height was measured using a hagameter. Species frequency was documented based on their presence across plots, providing information on dominance patterns, vertical structure, and distribution of vegetation within the Repong Damar system.

The ethnobotanical component of the research was conducted through semi-structured interviews and direct field observation to document traditional ecological knowledge related to edible plant use. Informants were selected using snowball sampling to access individuals with deep and long-standing experience, such as customary leaders, traditional healers, and damar farmers. Interview data included local plant names, parts used, preparation and processing methods, purposes of

use, and land-management practices rooted in local traditions. Observational work complemented the interviews by documenting how plants were collected, processed, and used in daily life, as well as the cultural and social contexts shaping these practices. Photographs of the landscape, plant species, and community activities were taken to support and verify the information obtained during the interviews and observations, contributing to a comprehensive understanding of ethnobotanical practices in the Repong Damar landscape.

2.5 Data Analysis

Vegetation data were analyzed by calculating species counts and the Importance Value Index (IVI) to determine the dominance and ecological contribution of each species within the plant community. The IVI was derived from relative density, relative frequency, and relative dominance, providing an integrated measure of the role each species plays in maintaining the stability and overall dynamics of the repong damar ecosystem. This analytical approach aligns with ecological studies in tropical forests, where quantitative indicators such as IVI are widely used to identify key species and to describe patterns of vegetation structure and distribution, as emphasized by Sheil *and* Bongers. (2020) In parallel, the ethnobotanical data were examined using a descriptive analytical framework by organizing information according to plant species, plant parts utilized, processing methods, purposes of use, and the broader sociocultural context in which these practices occur. This approach offers a more nuanced interpretation of how plant characteristics relate to the way they are incorporated into daily life. Paniagua-Zambrana *et al*. (2014) point out that ethnobotanical knowledge is strongly shaped by local ecological experience and traditional land-management practices, which influence how communities select and use plant resources. By integrating vegetation analysis with ethnobotanical interpretation, this study provides a comprehensive understanding of how biological diversity and local knowledge interact to support the use of edible plant species within the repong damar system in Bengkunat.

3. RESULTS AND DISCUSSIONS

3.1 Biodiversity Levels of the Repong Damar System in Bengkunat Subdistrict

An assessment of biodiversity levels within the Repong Damar area of Bengkunat Subdistrict was conducted to identify the structure and composition of vegetation across different growth phases. This analysis included the calculation of the Importance Value Index (IVI), which was used to evaluate the ecological roles and relative dominance of each species at the seedling, sapling, pole, and tree stages. The IVI provided insight into the species exerting the greatest influence on community formation and offered an indication of the ecological balance characterizing the Repong Damar ecosystem in Bengkunat.

The results of the study recorded a total of 53 plant species distributed across the various growth stages within the Repong Damar area of Bengkunat Subdistrict. The Importance Value Index (IVI) showed considerable variation among species at the seedling, sapling, pole, and tree stages, reflecting differences in ecological roles and levels of dominance within the vegetation community. A detailed presentation of the IVI values for each species at every growth stage is provided in Table 1.

Table 1. Importance Value Index (IVI) of Plant Species in the Repong Damar System

No.	Local Name	Scientific Name	Importance Value Index (%)			
			Seedling (%)	Sapling (%)	Pole (%)	Tree (%)
1	Bayur	*Pterospermum javanicum Jungh*	8,66	3,64	13,34	4,16
2	Durian	*Durio zibetinus*	8,15	27,43	18,96	24,52
3	Sirih	*Piper betle*	9,30	-	-	-
4	Bendo	*Artocarpus elasticus*	6,60	3,84	10,69	-
5	Wali Kukun	*Schoutenia ovata Korth.*	10,29	-	-	-
6	Senggani	*Malastoma candidom*	9,86	-	-	-
7	Bamban Burung	*Donax canniformis*	8,20	-	-	-
8	Jengkol	*Archidendron pauciflorum*	11,93	49,62	26,08	21,07
9	Petai	*Parkia speciosa*	7,60	22,07	27,99	17,18
10	Duku	*Lansium domesticum*	9,77	21,40	24,17	21,83
11	Daun Puding	*Graptophyllum pictum*	3,82	-	-	-
12	Sengon	*Falcataria moluccana*	2,72	7,37	24,33	16,42

No.	Local Name	Scientific Name	Importance Value Index (%)			
			Seedling (%)	Sapling (%)	Pole (%)	Tree (%)
13	Pacing	*Costus speciosus (Koening) J.E. Smith*	11,47	-	-	-
14	Rilek	*Curcuma sp*	6,54	-	-	-
15	Tebu Kera	*Etlingera coccinea*	2,17	-	-	-
16	Salam	*Syzygium polyanthum*	2,72	7,18	2,80	-
17	Kunyit	*Curcuma longa L.*	5,99	-	-	-
18	Kecombrang	*Etlingera elatior*	7,65	-	-	-
19	Markisa	*Passiflora edulis*	7,60	-	-	-
20	Asam Kandis	*Garcinia parvifolia (Miq.) Miq.*	2,17	9,41	-	2,78
21	Kopi	*Coffea robusta*	9,81	21,01	2,43	-
22	Pakis	*Dynaria sp.*	5,48	-	-	-
23	Lada	*Piper nigrum L.*	2,72	-	-	-
24	Gondang	*Ficus variegata*	2,17	7,08	-	-
25	Talas	*Litsia sp.*	15,48	-	-	-
26	Manggis	*Garcinia mangostana*	-	31,87	21,70	3,72
27	Aren	*Arenga pinnata*	-	-	4,82	5,98
28	Pulai	*Alstonia scholaris*	-	-	7,94	11,05
29	Pinang	*Areca catechu L.*	-	-	9,34	12,92
30	Lempaung	*Baccaurea lanceolata*	2,72	-	4,99	3,84
31	Jarak	*Ricinus communis Linn.*	-	-	2,34	2,24
32	Damar	*Anthshorea javanica*	6,54	15,17	28,00	57,85
33	Jaling	*Archidendron bubalinum*	-	4,90	7,50	-
34	Kerbang	*Scaphium macropodum*	-	-	7,31	1,94
35	Tangkil	*Gnetum gnemon*	-	21,91	16,88	11,40
36	Jambu Air	*Syzygium aqueum.*	-	-	-	4,79
37	Nangka	*Artocarpus heterophyllus*	-	16,42	7,92	-
38	Cengkeh	*Syzygium aromaticum*	-	-	4,52	-
39	Belimbing Wuluh	*Averrhoa bilimbi L.*	-	-	2,40	-
40	Sirsak	*Annona muricata L.*	-	-	2,69	-
41	Mengkudu	*Morinda citrifolia*	-	-	2,37	-
42	Kayu Lada	*Cinnamomum porrectum*	-	3,54	2,62	-
43	Mangga	*Mangifera indica*	-	4,75	2,43	2,22
44	Kayu Sepat	*Eugenia lineata*	-	6,82	-	-
45	Petai Cina	*Leucaena leucocephala*	-	3,54	-	-
46	Pepaya	*Carica papaya*	-	3,45	-	-
47	Jaha	*Terminalia bellirica*	-	-	-	3,73
48	Cempaka	*Magnolia champaca*	-	-	-	47,79
49	Laban	*Vitex quinata*	-	-	-	8,98
50	Medang	*Phoebe hunanensis*	-	-	-	2,46
51	Sungkai	*Peronema canescens*	-	-	-	4,13
52	Waru	*Hibiscus tiliaceus*	-	-	-	5,98

No.	Local Name	Scientific Name	Importance Value Index (%)			
			Seedling (%)	Sapling (%)	Pole (%)	Tree (%)
53	Kelawi	*Kibatalia maingayi*	-	-	2,80	2,14

The analysis of the Importance Value Index (IVI) revealed that *Anthshorea javanica* (damar) remains the most dominant species at the tree stage in the Repong Damar system of Bengkunat, with an IVI of 57.85%. This pattern highlights the ecological role of damar as a structural backbone of the stand and reflects the persistence of mature, resin-producing trees maintained by local farmers. These findings are consistent with those reported by Harianto *et al.* (2022), who documented substantially higher IVI values for damar in Pekon Pahmungan and Gunung Kemala. The differences suggest varying management intensities, where areas oriented toward resin production maintain stronger damar dominance, while Bengkunat exhibits a gradual decline due to land-use transitions and changing livelihood strategies.

At the seedling and sapling stages, the IVI of damar shows a marked reduction relative to adult trees. Santoso *et al*. (2023) reported similarly slow regeneration rates, with damar displaying low IVI values among younger growth classes before sharply increasing at the tree stage. This pattern aligns with what Nur'aini *et al*. (2020) describe as a recruitment bottleneck, in which young damar individuals fail to replace older trees effectively. Economic considerations further reinforce this trend. Fluctuating resin prices and the slow growth of damar have reduced the incentive for farmers to replant it, leading many to shift toward Multipurpose Tree Species (MPTS) such as durian, *Parkia speciosa* (petai), and *Archidendron pauciflorum* (jengkol), which offer faster and more stable financial returns.

Beyond biological constraints, socioeconomic pressures and land-use change have contributed to a broader decline in damar dominance. The conversion of repong into oil-palm plantations has altered vegetation composition and local livelihood orientations. Rajagukguk *et al*. (2018) similarly noted that many traditional damar agroforests across Indonesia are shifting toward short-term market-driven systems. Laura *et al*. (2019) also documented significant losses in repong coverage over the past three decades due to increasing preference for high-value monoculture commodities. Even so, some farmers continue to maintain damar as part of cultural heritage and ecological stewardship, preserving understorey diversity that remains important for food resources and ecosystem functioning.

Despite the high IVI of damar at the mature growth stage, the distribution of IVI values across other species remains relatively balanced in each growth phase. This indicates that the Repong Damar system retains a stable and resilient vegetation structure, with no single species exerting overwhelming dominance. Such evenness is a hallmark of resilient agroforestry ecosystems, where species diversity contributes to ecological stability, nutrient cycling, and the sustained availability of edible plants. Ismail *et al*. (2020) emphasize that communities with more evenly distributed IVI values tend to exhibit stronger resistance to environmental stress and anthropogenic pressures. In the context of Bengkunat, this structural balance underscores the continued ecological relevance of the Repong Damar system and its capacity to support both biodiversity conservation and local food security.

3.2. Ethnobotanical Utilization of Edible Plant Species in the Repong Damar System

Based on the analysis, nineteen edible plant species are utilized by the community within the Repong Damar landscape in Bengkunat Subdistrict. This diversity illustrates that the damar agroforestry system functions not only as a source of resin but also as an important provider of accessible and varied food resources. Each species is used in different ways according to its characteristics and cultural value, ranging from direct consumption to traditional fermentation, culinary ingredients, beverages, and household spices. The variety of processing methods reflects the depth of traditional ecological knowledge maintained by local communities in managing and sustaining their surrounding biological resources. A detailed description of the plant parts used and their respective processing techniques is presented in Table 2.

Table 2. Edible Plant Species and Their Utilization Methods in the Repong Damar System

No.	Species	Plant Part Used	Processing / Utilization Method
1	Durian *(Durio zibethinus)*	Fruit	Consumed fresh; Fermented (tempoyak)

No.	Species	Plant Part Used	Processing / Utilization Method
2	Duku (*Lansium domesticum*)	Fruit	Consumed fresh
3	Mangga *(Mangifera indica)*	Fruit	Consumed fresh
4	Jambu Air (*Syzygium aqueum*)	Fruit	Consumed fresh
5	Nangka *(Artocarpus heterophyllus)*	Fruit	Consumed fresh
6	Manggis *(Garcinia mangostana)*	Fruit	Consumed fresh
7	Sirsak *(Annona muricata)*	Fruit	Consumed fresh
8	Pepaya *(Carica papaya)*	Fruit	Consumed fresh
9	Petai *(Parkia speciosa)*	Fruit	Eaten raw (lalapan); Cooked / mixed with chili condiments
10	Jengkol *(Archidendron pauciflorum)*	Fruit	Eaten raw; Cooked / chili-based dishes
11	Jaling *(Archidendron bubalinum)*	Fruit	Eaten raw; Cooked / chili-based dishes
12	Melinjo *(Gnetum gnemon)*	Fruit	Cooked
13	Talas *(Litsia sp.)*	Stem, Leaves	Cooked
14	Salam *(Syzygium polyanthum)*	Leaves	Used as culinary seasoning
15	Kecombrang *(Etlingera elatior)*	Flower	Used as culinary seasoning
16	Kunyit *(Curcuma longa)*	Rhizome	Used as culinary seasoning
17	Aren *(Arenga pinnata)*	Stem	Fermented; Consumed fresh
18	Kopi (Coffea arabica)	Fruit	Processed into beverages
19	Lada (Piper nigrum)	Fruit	Used as culinary seasoning

The utilization of edible plants within the Repong Damar system in Bengkunat illustrates the prominent role of durian in the daily life of the community, both culturally and economically. Durian is consumed not only in its fresh form but also processed into tempoyak, a traditional fermented product widely known in Sumatra. This fermentation enhances flavor, prolongs shelf life, and increases the economic value of the fruit. Such practices demonstrate how local culinary knowledge has evolved in response to ecological conditions and the limited storage capacity typical of tropical environments. Wulandari *et al*. (2022) emphasize that tempoyak represents an important culinary heritage that reflects the close relationship between cultural identity, traditional

practices, and the sustainable use of nontimber forest resources. These findings indicate that the Repong Damar landscape sustains not only ecological functions but also longstanding food traditions rooted in local knowledge.

In addition to durian, several other species such as jengkol, petai, jackfruit, and jaling also play important roles in the community's food system. Similar utilization patterns have been documented in other regions of Indonesia. Cita (2020) reports that Sundanese communities in Sukabumi rely on more than one hundred local food plant species to support household food security. Likewise, research by Umartani & Nahdi (2021) in the Merapi and Merbabu region records seventy-four edible plant species used for everyday consumption and traditional culinary practices. These similarities across regions suggest that the use of local food plants is not merely a response to dietary needs but a form of social ecological adaptation that enables communities to manage biodiversity in a sustainable manner.

Among all plant structures used, fruits are the most widely utilized part. Their predominance arises from several factors: fruits are easy to process, can be consumed directly, are available seasonally but with reliable cycles, and can be harvested without damaging the parent tree. Hartini & Nugroho (2020) show that fruits are the most frequently used plant part in South Aceh due to their stable availability and high economic value. Similarly, Jadid *et al*. (2020) find that fruits and leaves hold the highest utilization value among the Tengger community compared with stems or rhizomes, underscoring the practical and nutritional importance of these plant parts. These consistent findings across different regions confirm that fruits occupy a central position in traditional food systems based on biodiversity.

Overall, the pattern of edible plant utilization in the Repong Damar system of Bengkunat demonstrates that this agroforestry landscape performs functions far beyond resin production alone. The presence of diverse fruit species, spices, and multipurpose plants reveals that Repong Damar is an important local food resource that strengthens nutritional resilience, household economies, and cultural continuity. The variety of processing techniques, ranging from fresh consumption to seasoning preparations and traditional fermentation, reflects the depth of ecological knowledge maintained by the community. When viewed alongside findings from other regions, it becomes evident that Repong Damar represents not only an ecological heritage but also a resilient and adaptive food production system that continues to support local livelihoods amid changing environmental and social conditions.

4. CONCLUSIONS

Based on the observations and the results obtained it can be concluded that:

1. This study demonstrates that the Repong Damar landscape in Bengkunat supports a high level of biodiversity, with 53 plant species identified across multiple growth stages ranging from seedlings to mature trees. The multistrata structure and the consistent dominance of *Shorea javanica* at the tree layer confirm that Repong Damar remains a stable and well-maintained agroforestry system. These findings affirm its ecological importance as a resilient landscape that continues to sustain biodiversity and environmental functions within the region.
2. A total of 19 edible plant species were documented as part of the community's daily food system. These species, dominated by fruit trees, aromatic plants, and multipurpose species, are used both for household consumption and as valuable economic commodities. Their availability and versatility underscore the essential role of Repong Damar as an accessible and reliable source of food that strengthens local nutritional security and contributes to household livelihoods.
3. The community employs a wide range of food-processing techniques aligned with the characteristics of each plant species. These include fresh consumption, boiling, cooking, incorporation into traditional dishes, and fermentation practices. Durian, in particular, is processed into tempoyak, a culturally significant fermented product that reflects long-standing local culinary knowledge. This diversity of processing methods illustrates the depth and continuity of traditional food practices, demonstrating the community's ability to sustain and adapt culinary knowledge across generations.

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