



Rejang Tribe Ethnobotany Index: Shifting, Inheritance, and Local Knowledge Conservation Strategy Towards Food Security in Indonesia

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ABSTRACT

The crop biodiversity in Indonesia has not been utilized effectively, resulting in low food security. This issue can be addressed by harnessing crop biodiversity through a local food system based on ethnobotanical knowledge. On the other hand, ethnobotanical knowledge is at risk due to the lack of documentation, leading to shifts and loss of valuable information. This study seeks to identify shifts in ethnobotanical knowledge and its inheritance, as well as to develop relevant strategic frameworks to address these developments. The research method is a hybrid of ethnographic and statistical approaches to ethnobotanical indices. Techniques for collecting data include surveys, participant observation, in-depth interviews, and literature reviews. The data analysis involves a reduction process, data verification, interpretation, and making conclusions. The findings of this study indicate a shift in ethnobotanical knowledge, namely in the 15–30-year age group, with a knowledge level percentage of 39.09%. Ethnobotanical knowledge is currently passed down through generations through word of mouth. These dynamic patterns and modes of inheritance are employed by linked organizations in Indonesia to conserve indigenous wisdom for food security.

Keywords: *ethnobotany, food security, local knowledge, Rejang tribe.*

1. INTRODUCTION

Indonesia has a high diversity of food crops. Data from the Food Security Agency shows that Indonesia has 77 types of carbohydrate sources, 75 types of oil or fat sources, 26 types of legumes, 389 types of fruits, 228 types of vegetables, and 110 types of spices and seasonings (Indonesian Biodiversity Clearing House Mechanism, 2019). However, Indonesia still faces the threat of a food crisis. In 2023, the food security index and food production in Indonesia show a weakening trend. Various factors contribute to Indonesia's vulnerability to a food crisis, such as dependence on a single staple food, namely rice, despite the availability of other food resources. This indicates a lack of utilization of biodiversity. Biodiversity is a key factor in one of the pillars of food security, which is diversification of consumption and food safety, ultimately supporting the achievement of the second Sustainable Development Goal, Zero Hunger.

One of the practices to utilize biodiversity for food security is ethnobotany. Ethnobotany is a science that explores the cultural connection of local communities with plant resources in their environment, both directly and indirectly (Oktarina and Wijaya, 2014). As local communities are culturally bound and continuously require various plant resources from their surroundings, ethnobotany naturally cultivates a variety of these plant resources sustainably, thus preserving biodiversity and consumption diversity. However, ethnobotanical knowledge is also at risk. Ethnobotanical knowledge can only be preserved if the knowledge of utilizing this biodiversity is passed down to the next generation. Meanwhile, the current younger generation tends to disregard local knowledge, including ethnobotanical knowledge (Cita and Hasibuan, 2019). This is further exacerbated by the lack of documentation, as ethnobotanical knowledge is usually transmitted orally.

A significant case in this issue is the ethnobotanical knowledge of the Rejang tribe. The Rejang tribe is an ethnic group predominantly residing in Central Bengkulu, Bengkulu Province. Bengkulu Province is known for its biodiversity due to its location surrounded by the Bukit Barisan Mountain range. According to William Marsden's records in 1812 (2016), the Rejang tribe is one of the oldest tribes in Sumatra. They have historically used various types of food plants to meet their daily needs as a survival mechanism, avoiding food insecurity issues. However, like other community-based ethnically based knowledge, Rejang ethnobotany is at risk of disappearing with changes in the ethnic community, especially among the younger generation. Real-life examples of the shift in ethnic-based knowledge among the Rejang tribe include the Rejang language and Delamak fabric. Knowledge of the native Rejang language has significantly declined among the younger generation of the Rejang tribe. Most of them, especially in urban areas, have become speakers of the Malay language and have limited or no knowledge of the Rejang language (Sudarmanto, et al., 2020). Delamak fabric exhibits similar trends, and with the passing of the elderly who were the custodians of Delamak fabric, this cultural heritage is at risk of extinction. The younger generation also shows little concern about the loss of this cultural heritage (Firmansyah, 2019). Therefore, ethnobotany is also susceptible to a similar fate.

Given these issues, this research aims to identify the retention of ethnobotanical knowledge as a basis for efforts to prevent the extinction of this knowledge and to develop preservation strategies to ensure it is passed down to future generations. To address the research questions, three research questions are posed: (1) What is the current understanding of ethnobotany among the Rejang tribe?; (2) How is ethnobotanical knowledge passed down to the younger generation among the Rejang tribe?; and (3) What is the optimal model for the preservation of ethnobotanical knowledge as an effort to safeguard local knowledge in the Bengkulu region?.

2. OBJECTIVES

Based on the problem statement, the research objectives are as follows: (1) Analyzing the understanding of ethnobotanical knowledge among the Rejang tribe in the Bengkulu Province. (2) Identifying the forms of ethnobotanical knowledge inheritance within the current Rejang tribe. (3) Developing a model for the optimal preservation strategy of ethnobotanical knowledge as an effort to conserve the knowledge of the local community in the Bengkulu region.

3. THEORETICAL REVIEW

2.1 Ethnobotany: Meaning and Current Attention

Ethnobotany originates from the combination of "ethnology," the study of tribes and their cultures, and "botany," the science of plants. Essentially, ethnobotany describes and explains the relationship between humans and plant resources embedded within culture, emphasizing the utilization of plants to fulfil human needs. Ethnobotanical knowledge is often found among traditional tribes in Indonesia, a result of interactions, processes, and attitudes in utilizing plants (Rukmana, et al., 2021). Ethnobotanical research plays a role in preserving sustainable practices that are increasingly endangered due to the progress of time (Aziz et al., 2018).

2.2 Ethnobotany in the Rejang Tribe: Initial Ethnographic Overview

The ethnobotany of an Indonesian ethnic group has its own distinct characteristics, with each tribe possessing different fundamental knowledge in utilizing plants based on its experiences. This holds true for the Rejang tribe, which has a set of traditional knowledge in managing various types of food plants. Syateri's research (2021) identified various plants in Rejang, classifying them as medicinal plants, colour-producing plants, plants for ceremonial purposes, ornamental plants, aromatic plants, livestock feed plants, natural pesticide-producing plants, and plants for building materials. The Rejang tribe holds a set of knowledge and local wisdom about plants. Local wisdom regarding rice diversity is expressed in the "Mpua' beneaq" tradition, aimed at preserving local rice varieties (Syateri, 2021). Customs and traditions are deeply embedded in the life of the Rejang community. The practice of local wisdom that is still preserved in everyday life supports the lives of those residing in that landscape (Aziz, et al., 2022).

2.3 Preservation of Ethnobotanical Knowledge in the Rejang Tribe to Support Food Security

The Rejang tribe is blessed with a diversity of plants that are useful for daily sustenance (Suwardi, 2023), making them self-sufficient in food. The management of gardens, fields, and paddy fields undoubtedly involves a set of knowledge passed down from generation to generation. Rejang tribal knowledge is conveyed orally, contrasting with the documented and organized knowledge of academics. Syateri's research (2021) notes a phenomenon where the elderly, as key holders of knowledge, gradually undergo physical changes, memory decline, and sensory impairments. In terms of gender, Zikri's study (2017) found differences in knowledge levels between men and women, linked to the higher frequency of men entering the forest and consuming forest food plants. According to the Mann-Whitney Test statistical analysis, the average ethnobotanical knowledge level for women is 0.360 compared to men's 0.364. Suwardi's

research (2023) provides age range data, with 58.3% of those under the age of 25 spending more time in school than participating in farming or harvesting. These changes are influenced by the interaction of age groups with the environment and forests, as well as a shift in mindset towards technological innovations.

4. METHODS

This research was conducted over a period of 5 months, starting from the preparation stage, data collection, data processing, data analysis, drawing conclusions, and compiling research outputs. Field data collection took place from July 22nd to July 29th, 2023, in Rindu Hati Village, Taba Penanjung District, Central Bengkulu Regency, Bengkulu Province. The survey involved the distribution of questionnaires to 40 respondents, while in-depth interviews were conducted directly with 10 individuals. Data processing, data analysis, the formulation of final conclusions, and the compilation of research outputs were conducted in Yogyakarta.

The research data consisted of both quantitative and qualitative data. Quantitative data were obtained through surveys, while qualitative data were obtained through participant observation, in-depth interviews, and a review of literature from scientific journals, local historical records, and credible news articles. The survey was used to measure the ethnobotanical knowledge index of the Rejang tribe by distributing questionnaires to 40 selected respondents using purposive sampling based on age groups (Age Group, AG). The number of respondents was determined based on the minimum number required for relational data processing (Gay, 2012). To determine the classification of ethnobotanical knowledge in each age group (AG) and the influence of age groups on the shift in ethnobotanical knowledge, a minimum of 30 respondents should be used (as per the minimum requirement for statistical testing) (Rangkuti, 2008). Respondents were divided into four age groups with 15-30 years in each interval, namely (AG I), 30-45 years (AG II), 45-60 years (AG III), and 60 years and above (AG IV). The 15-year interval division was based on the estimated maximum boundary for assessing changes (Zent in Helida et al., 2016). Participant observation was conducted to obtain group experiences and actual data about the social and cultural reality of the community. In-depth interviews involved local customary leaders, community leaders, village officials, and farmers to gain insights from cultural custodians. The research included sample selection, grouping based on age groups (AG), and active participant observation in the social and cultural life of the Rejang tribe, with the recording of ethnographic field notes. In-depth interviews involved key informants to gain perspectives from cultural custodians.

Data analysis was conducted using a mixed-method approach through a sequential explanatory mixed-method strategy. Quantitative data were analyzed using parametric statistical tests based on the ethnobotanical knowledge index. The measurement of ethnobotanical knowledge level involved indicators such as the number of community members, intergenerational transmission, and the utilization of ethnobotanical knowledge. This index measured the application of traditional knowledge in food security, including understanding of traditional food plant species and socio-cultural systems (Zikri, 2016). These factors were measured by dividing them into age groups (AG) and age quarters I to IV, resulting in the ethnobotanical knowledge percentage using the formula.

$$\frac{\text{Respondent Score}}{\text{Maximum Score}} \times 100\%$$

Figure 1. Ethnobotanical Knowledge Index Formula

(Nurgiyantoro, et al., 2015)

The influence of age groups (AG) on the shift in ethnobotanical knowledge was tested using SPSS 26, utilizing parametric statistical tests such as ANOVA (F) and coefficient of determination (R square) tests (Santoso, 2010). Qualitative data analysis was conducted using an ethnographic approach, combining both emic (subject of the study) and etic (researcher) perspectives to provide an analytical descriptive overview of the Rejang tribe's ethnobotanical.

3. FINDINGS & DISCUSSION

3.1 Understanding the Ethnobotanical Knowledge of the Rejang Tribe

Understanding of Rejang ethnic group's ethnobotanical knowledge is measured through a survey using a questionnaire. This understanding can identify shifts in ethnobotanical knowledge within the Rejang ethnic group. The measurement of ethnobotanical knowledge levels is based on four age groups: age group I (15-30 years), age group II (>30-45 years), age group III (>45-60 years), and age group IV (>60-75 years). The distribution of respondents' answer percentages from the four age groups can be calculated as the ethnobotanical index. Then, it is processed using the ethnobotanical index formula to produce the percentage of shifts in Rejang ethnic group's ethnobotanical knowledge as follows.

Table 1. Percentage of ethnobotanical knowledge among the Rejang tribe.

Age Group (AG)	Average Percentage of Ethnobotany Knowledge	Overall Average Percentage
Age Group (AG) I 15-30 years	13,09%	
Age Group (AG) II >30-45 years	56,67%	57,08%
Age Group (AG) III >45-60 years	63,18%	
Age Group (AG) IV >60-75 years	69,39%	

Source: Data Analysis, 2023

Based on Table 1, it can be analyzed that the age group I (15-30 years old) falls under the criteria of low knowledge, indicating a shift in ethnobotanical knowledge between generations (Sugiyono, 2017). On the other hand, the age group II (>30-45 years old) is classified as sufficient, indicating vulnerability to the current shift in ethnobotanical knowledge. Furthermore, the age group III (>45-60 years old) and age group IV (>60-75 years old) fall under the criteria of good knowledge, but further examination is needed regarding the factors causing the shift.

From the survey results, a check sheet was also conducted on the knowledge of the number and distribution of local food plants of the Rejang tribe. This aims to identify how well-informed and frequently the Rejang tribe utilizes food plants in the context of self-sustainability in food security. This identification activity is carried out by dividing the food plants into two groups: recognized food plants and less recognized food plants. Based on this, the percentage of food plants is obtained as follows.

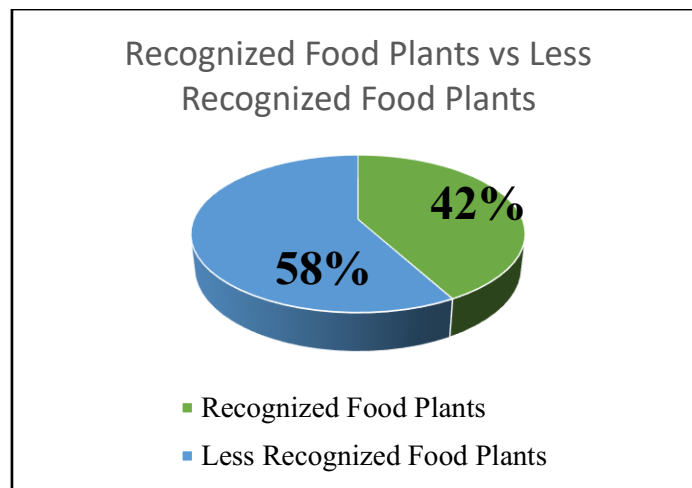


Figure 2. Percentage of Recognized vs Less Recognized Food Plants

Based on Figure 2, out of 43 food plants, only 18 food plants (42%) are recognized, while the remaining 25 food plants (58%) are less recognized. This indicates a lack of knowledge about food plants among the Rejang tribe.

Table 2. Less Recognized Food Plants

Name of Food Plants	Name of Food Plants
Banglei (<i>Zingiber purpurum</i> Roxb.)	Dukut Blando (<i>Isotoma longiflora</i> (L.) C. Presl.)
Lacik (<i>Mangifera</i> sp.)	Nibung (<i>Unidentified</i>)
Bes Badak (<i>Calamus</i> sp.)	Sageu Rembio (<i>Metroxylon sagu</i> Rottb.)

Dawei (<i>Setaria italica</i> (L.) P. Beauv.)	Mecebea (<i>Belamcanda chinensis</i> (L). DC.)
Jelei (<i>Hordeum vulgare</i> L.)	Mlung (<i>Unidentified</i>)
Kio biyang (<i>Hibiscus sabdariffa</i> L.)	Pasak Bumei (<i>Eurycoma longifolia</i> Jack.)
Kremuting (<i>Unidentified</i>)	Bungei Meloaw w (<i>Cylea barbata</i>)
Pengei (<i>Lagenaria leucantha</i> (Duchesne) Rusby.)	Pecuak pinggan (<i>Gardenia augusta</i> L. Merr.)
Selang Bureh (<i>Unidentified</i>)	Sebubeu (<i>Synedrella nodiflora</i> Gaertn.)
Tapus (Topos) (<i>Unidentified</i>)	Segnie Ruso (<i>Segnie ruso</i>)
Boa' kecapei (<i>Sandoricum koetjape</i> (Burm. F.) Merr.)	A'o (<i>Ficus glomerata</i> Roxb.)
Kcung be'uk (<i>Datura metel</i> L.)	Li'ik tanem (<i>Maranta arundinacea</i> L.)
Kio biyang (<i>Hibiscus sabdariffa</i> L.)	

Source: Data Analysis, 2023

3.2 Inheritance of Ethnobotanical Knowledge in the Rejang Tribe

Based on the research findings involving in-depth interviews and participant observations, the ethnobotanical knowledge held by the Rejang tribe is currently transmitted through two methods as follows.

First, ethnobotanical knowledge is orally transmitted from generation to generation. Oral tradition serves as the most influential way in the transmission process. The transmission of cultural values is essentially a process of transferring social values through learning and experiences within the community, from older generations to younger ones. This is evident in the Rejang tribe:

"We were taught by our ancestors, they understood more, after the ancestors are gone, then with our parents, they told us about plants that can be eaten, used for this and that, that's the tradition, for example, dawei is often used to make porridge." (Obtained through an interview with Mr. M, 2023).

Such a communication pattern falls into the unbalanced split pattern. This pattern is a communication model where one person dominates, and one person is considered an expert in more than half of the reciprocal communication field (Septiana, 2022). In the case study, the communication model is dominated by the ancestors or elders who possess expertise in the knowledge of processing staple foods within the Rejang tribe. This aligns with the argument presented by Cavalli-Sforza and Feldman (1973) regarding the concept of the inheritance system. The Vertical Transmission system is a mechanism that occurs through genetic means passed down over time across generations, involving the transmission of cultural traits from parents to their descendants. In vertical transmission, parents pass on values, skills, beliefs, cultural motifs, and knowledge to the succeeding generations.

Secondly, the process of inheriting ethnobotanical knowledge is obtained through the family gardening tradition, where children participate in their parents' activities in the garden. Informal discussions within the family environment can occur when children witness their parents preparing plant seeds, planting, and harvesting. Indirectly, children learn and become involved in the agricultural activities of their parents. This inheritance pattern was revealed through the following interviews:

"... so when it's durian season ... during the coffee season, parents are the ones who usually harvest ... the children can't handle money from coffee, but they can help with durians ... when they are able to help." (Obtained through an interview with Mrs. S, 2023).

"Clearly, during the durian harvest season, from early childhood education, kindergarten, elementary school, their economy improves as long as they can carry durians, they earn money." (Obtained through an interview with Mr. M, 2023).

In the context above, communication from parents to children during the inheritance of ethnobotanical knowledge involves a learning-by-doing approach, where parents explain the gardening activities that need to be done. From the interviews, it is evident that the inheritance of ethnobotanical knowledge within the family occurs naturally. This process

begins from a child's birth, as within the environment of farming or gardening, children witness their parents working in the garden. The above example reflects the direct involvement of young people in the agricultural environment, where they contribute as voluntary labor or receive payment from the family. This involvement is referred to as intra-family labor, where each household member, both young and old, has their own agricultural yields, and wage transactions within the family become common (Li, 2014). Through the two processes of inheriting ethnobotanical knowledge mentioned above, it indicates that knowledge transmission occurs without formal structures (non-formal). This signifies that the inheritance of ethnobotanical knowledge is not associated with formal structures or specific organizations but is more related to values, practices, symbols, and cultural traditions within the community.

3.3 Strategies for the Preservation of Ethnobotanical Local Knowledge in the Rejang Tribe

Field research has found that the inheritance of ethnobotanical knowledge is solely carried out orally, passed down from mouth to mouth. Additionally, there is no structural effort to preserve and pass on ethnobotanical knowledge within the Rejang tribe. Given the significance of ethnobotanical knowledge as an approach to achieving local food security, it is essential to formulate a conservation strategy for the inheritance of this knowledge. Considering the current global food system's tendency to eliminate the involvement and sovereignty of local communities, any proposed strategy must address these issues. Primarily, the conservation strategy should involve local communities actively and participatively as the owners of this knowledge. Furthermore, the proposed strategy should also serve as a model for empowering the community. This means that the way ethnobotanical knowledge is inherited should ultimately aim to preserve this knowledge while making the local community more empowered.

In formulating a conservation strategy for ethnobotanical knowledge, there are several issues that need attention. Firstly, this research emphasizes the documentation of ethnobotanical knowledge. Some aspects need to be highlighted regarding existing documentation efforts. It cannot be denied that efforts to document ethnobotanical knowledge in the Rejang tribe have been made. Several literature sources have recorded the practices of plant utilization and cultural relationships with the Rejang tribe. However, it is a fact that this knowledge is mainly stored in the cabinets of academics and is disconnected from its knowledge owners. This creates a gap between the academic world and the community that owns this knowledge, without a bridge to transfer Rejang ethnobotanical knowledge. Structurally, there is also no effort found to bridge the gap between Rejang ethnobotanical knowledge and its knowledge owners. In this context, ethnobotanical knowledge is part of traditional ecological knowledge (TEK). On a higher scale at the national level, the recognition of traditional ecological knowledge (TEK) in Indonesia has not received serious attention, especially from the government. This can be observed in the case of traditional ethnobotanical knowledge within the Rejang tribe.

Secondly, this research highlights the inheritance of ethnobotanical knowledge that relies solely on oral traditions and gardening practices. Mrs. S, a Rejang farmer, stated that she would only share local plant knowledge with her children if they asked her. Without the willingness of children to ask questions and the willingness of parents to pass on knowledge, the process of inheriting ethnobotanical knowledge will not occur. Furthermore, Mrs. S also acknowledged that her children rarely accompany her to the garden compared to her generation when she was young. Most of the productive time of today's children is spent in school environments, peer environments, and the digital world.

Thirdly, this research also emphasizes the absence of structural efforts from local institutions within the Rejang tribe. Field research found that several institutions are not functioning effectively. Customary institutions intended to preserve Rejang culture and traditions are not functioning as they should. These institutions are found to only deal with marriage matters and celebratory events. Additionally, farmer groups expected to be a collective platform for farmers are not functioning as intended. These groups only serve as channels for government policies to reach farmers and receive assistance. The government's presence in farmer communities manifests through agricultural counseling. However, this becomes a problem when the counseling does not involve all farmers comprehensively. Some farmers in Rindu Hati Village mentioned that various forms of aid and activities only target specific individuals. Farmers who are distant from the village government feel excluded from various forms of assistance and activities by the government. This situation indicates a gap between the government and the community. The challenge is how to cultivate participation and collective action from the community with the presence of government programs. The following is a proposed strategy for the conservation of local knowledge.

In formulating a strategy for the conservation of the way ethnobotanical knowledge is inherited, collaborative efforts must be realized among various stakeholders, especially collaboration between the government and the community. This research highlights that several government policy products at the local community level are a form of technocratic and top-down policies. This means that the policies often overlook the cultural heterogeneity of the local community and are measured only with quantitative figures as success indicators. Programs introduced by the government assume that the community is a passive subject that must be driven from above (Li, 2007). Another problem arises when a program does not receive a positive response from the community, necessitating a new form of partnership as the foundation for a government policy product in the effort to conserve the inheritance of ethnobotanical knowledge. This

partnership must actively involve various parties, including conservation activists, academics, government actors, and the local community as policy subjects. Moreover, this partnership must also serve as a bridge to overcome the gap between the documentation of Rejang ethnobotanical knowledge and its knowledge owners.

Community involvement in this partnership must also consider the nature of heterogeneity and fragmentation within the community. The mentioned heterogeneity involves simple demographic aspects such as gender and age groups; who needs to be involved and in what form of engagement. This is crucial because neglecting these aspects can lead to misdirected programs and program ineffectiveness (Müller et al., 2014). Moreover, the existing fragmentation within the community must also be taken into account, considering that this can be a hindering factor for collective action and community participation in a program. Often, the level of community participation will be significantly influenced by the fragmentation among community members. Empowering the community should also be pursued as a form of cultural justice for the Rejang tribe through a conventional approach by bringing in facilitators rather than technical assistance; strengthening social capital rather than technical aid; elevating facilitators who work to facilitate the community continuously. The approach used is Participatory Rural Appraisal (PRA), a set of approaches and methods that encourage rural communities to participate in improving and analyzing self-knowledge about life and the context of their own conditions to make plans and take action (Chambers, 1987). PRA is chosen based on the failure of top-down development models and the emergence of alternative approaches such as bottom-up planning. The principles of PRA include (1) prioritizing the marginalized (favoritism); (2) the principle of community empowerment (access, control, and independence); (3) the principle of the community as actors, outsiders as facilitators; (4) the principle of mutual learning and respecting differences; (5) the principle of relaxation and informality; (6) the principle of triangulation (check and recheck); (7) the principle of optimizing results; (8) avoid unnecessary knowledge; (9) problem-solving and developing activities; (10) sustainability and intervals.

4. CONCLUSION

Identifying the retention of knowledge and the inheritance of Rejang tribe ethnobotanical knowledge is crucial to prevent the extinction of this knowledge within the community. This research yields conclusions that address the problem statement as follows. Currently, the understanding of Rejang tribe ethnobotanical knowledge, specifically in the Village of Rindu Hati, varies across different age groups. The least average understanding of ethnobotanical knowledge is found in age group I (15-30 years) with an index percentage of 39.09%, while the most substantial understanding is in age groups III (>45-60 years) and IV (>60-75 years) with index percentages of 63.18% and 69.39%, respectively. The inheritance of ethnobotanical knowledge occurs through oral traditions and gardening practices without a formal structure. This research highlights the deficiency in documenting the inheritance of ethnobotanical knowledge, failing to bridge the knowledge transfer with the Rejang tribe as the knowledge holders. The absence of local institutions also weakens the knowledge inheritance process. To address these weaknesses, the research recommends a strategy for building new partnerships between conservationists, academics, government, and the local community. This partnership should be based on the principles of community empowerment, giving a primary role to the local community in its implementation. The partnership is carried out using a Participatory Rural Appraisal approach that is participatory, collaborative, and inclusive. The applied strategies aim to sustain Rejang tribe ethnobotanical knowledge, contributing to the local community's food security through diversity in food production and consumption.

5. COMPETING INTEREST STATEMENT

This article is free from any conflict of interest regarding the data collection, analysis, and the publication process itself. Either replicate or modify the previous sentence for this part.

6. AUTHORS' CONTRIBUTIONS

This research is conceived as a collaboration between the branches of science and social humanities. The contributing authors consist of five individuals with diverse backgrounds, guided by one supervising lecturer. The authors are from the departments of Agricultural Industrial Technology (Ilham Nur Rahman); Cultural Anthropology (Ilham Andriyanto and Hanieke Syahla); History (Abdila); Biology (Mia Fadhilah); and the supervising lecturer, Dr. Aprillia Firmonasari S.S., M.Hum., DEA, is from the Faculty of Cultural Sciences. Each author and the supervisor have specific responsibilities, including research preparation, quantitative data collection and surveys, quantitative data processing, drawing conclusions and finalizing the research, and preparing the output. The division of tasks among the authors is detailed, covering aspects such as ethnographic data collection, historical data processing, and survey data analysis. The supervisor's role involves monitoring the research process, conducting discussions and evaluations of obtained research

data, assisting in deciding and selecting relevant data for analysis, and guiding authors in the scientific article writing process.

7. ACKNOWLEDGMENTS

Thanks are expressed to the Directorate General of Higher Education, Research and Technology, Ministry of Education and Culture for funding the student creativity program (PKM) activities in the field of social-humanities research (RSH) which have been implemented. Thanks are also expressed to Gadjah Mada University, Rindu Hati Village Government, Central Bengkulu Regency Government, Rindu Hati Village Community, and all parties who have supported the implementation of this research.

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