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## AN EXAMINATION OF INDIGENOUS COMMUNITY-BASED STRATEGIES FOR SUSTAINING FOOD AUTONOMY: INDONESIA'S CASE

### 对以土著社区为基础的维持食品自主战略的审查：印度尼西亚的案例

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#### Abstract

The wisdom of various traditions is one of Indonesia's greatest assets. The law society maintains and guards the sustainability of different wisdom handed down orally through generations. In each legal society, there are customary systems and structures that are prevalent within Indonesia and of interest for scrutinizing in a framework that supports resilience in food production. It is becoming increasingly difficult for indigenous peoples to use their local knowledge to create food security in the modern world. This article investigates the challenges faced by indigenous peoples in using their local knowledge to create food security in the modern world. This article describes qualitative methods for generating data based on observations and interviews. The local wisdom of indigenous peoples is increasingly being eroded by the modern age as it relates to creating food security. As the results, Sago becomes a major source of income for the farmers, but they also continue to maintain tradition or habit to preserve their local wisdom. It is important to have policies that protect the local wisdom of indigenous peoples in a way that supports their activities in creating food security, as well as efforts made by the central and regional governments in maintaining the local wisdom of indigenous peoples. For further recommendation, the research methodology and data analysis should be thorough and rigorous, incorporating both qualitative and quantitative methods to gain a comprehensive understanding of the strategies employed by indigenous communities.

**Keywords:** Local Wisdom, Food Security, Indigenous Peoples

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**摘要** 各种传统的智慧是印度尼西亚最大的资产之一。法律社会维护和保护代代相传的不同智慧的可持续性。在每个法制社会中，都有在印度尼西亚普遍存在的习惯制度和结构，并且有兴趣在支持粮食生产弹性的框架中进行审查。土著人民越来越难以利用他们的当地知识在现代世界创造粮

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食安全。本文调查了土著人民在利用当地知识在现代世界创造粮食安全方面所面临的挑战。本文描述了基于观察和访谈生成数据的定性方法。土著人民的地方智慧正越来越多地被现代侵蚀，因为它与创造粮食安全有关。结果，西米成为农民的主要收入来源，但他们也继续保持传统或习惯，以保存他们在当地的智慧。重要的是制定保护土著人民当地智慧的政策，以支持他们在创造粮食安全方面的活动，以及中央和地区政府为维护土著人民当地智慧所做的努力。对于进一步的建议，研究方法和数据分析应该彻底和严格，结合定性和定量方法，以全面了解土著社区采用的战略。

**关键词:** 地方智慧、粮食安全、土著人民

## I. INTRODUCTION

It is well known that Indonesia has a great deal of diversity consisting of many ethnic groups represented in the nation and living together within the Unitary State of the Republic of Indonesia (NKRI) that is governed by the spirit of *Bhineka Tunggal Ika*.<sup>1</sup> Many of them are associated with the modernization and progress era and generate two sides looking at different money in the phenomenon that follows the modernization and progress era. There is a positive side of social change, where the majority of Indonesians can use them as a tool for bringing progress, and on the other hand, there is a negative side, where the backwardness and remoteness are elevated due to factors such as attachment to culture and custom, religion, and location [1]. In the final definition of society, this is what it is called with the Law Society custom life remote in the distant future. Although they may have a permanent own right as recognized and protected citizens in circumstances of backwardness and backwardness, they are still allowed to live and enjoy their lives with their traditional values [2]. As a consequence, it would be an obligation on the part of the country to provide recognition and protection for Law Society customs for permanent life in underdevelopment and underdevelopment, throughout the whole thing that is held by customs firms [3].

In relation to the food crisis, the government has a responsibility to recognize the rights of indigenous people to land as soon as possible [1], [2], [3], [4]. For example in Africa case, when indigenous peoples' rights to land are recognized, then indigenous peoples will be able to manage these lands for the benefit of their own food security by managing these lands for their own benefit [3], [5]. As soon as indigenous peoples can take control of their land, then, it is certain

that they will also be able to take control of their food as well.

It is considered an integral part of indigenous peoples' lives and livelihoods that they can access agrarian resources within and above their customary territories that include a wide range of natural resources such as land [6]. Despite this, these customary territories are now under the control of the government in the form of Cultivation Rights, Building Use Rights, Forest Concession Rights, and so on. Indigenous peoples are subdued by a licensing system that eliminates their basic rights, and causes impoverishment and food insecurity [7].

In Indonesia, there is a wealth of traditional wisdom that can be found in various forms. In the strong structure of the Customary Law Community, many of this various customary wisdom has been maintained and preserved for generations to come. To ensure our national food security is maintained, it is interesting to observe the system and structure of each customary law society that has spread throughout Indonesia within the framework of supporting the Customary Law Society. Young people now have a responsibility to carry on the baton of preserving this different traditional wisdom. The agrarian reform program must be implemented in such a way that it meets the needs of both of them. To do this, the first thing that needs to be done is to rearrange the legal politics of Indonesia's land system. The current situation calls for the repeal of different policies relating to land that are no longer relevant to the current conditions and their replacement with policies relevant to the current situation. In accordance with article 33 of the 1945 Constitution, this new law must refer to this article.

Therefore, the purpose of this study was to answer the following research questions:

1. Examining customary systems and structures within Indonesia in a framework that supports resilience in food production.

2. Investigating the challenges faced by

<sup>1</sup> "Bhineka Tunggal Ika" is a national motto of Indonesia and encapsulates the country's diversity of cultures, religions, languages, and ethnicities.

indigenous peoples in using their local knowledge to create food security in the modern world.

## II. LITERATURE REVIEW

Despite indigenous peoples' existence and ability to play an important role in a sustainable natural resource management system, their participation in the national natural resource planning and development planning system has not yet received enough attention or been adequately recognized [7], [8]. Because of the acceleration of development, a number of indigenous groups have lost access to natural resources in the form of forests, coasts, seas, as well as land, which has in turn resulted in the destruction of the institutions and laws pertaining to their indigenous communities [5], [9]. It is because indigenous peoples are not involved in the process of planning and allotment of land, forests, coasts, and oceans by the government and do not have a say in the decisions [10].

Indigenous peoples in Indonesia face various conditions and problems because of varying regional conditions and problems, e.g., how traditional food exists in the digital media [11]; the occurrence of legal pluralism creating a farm management system, potentially contributing to the advancement of agriculture in the future [3]; or food insecurity with fisherfolk living in a coastal agroecosystem [1]. As for minority populations, there are many similarities between them, particularly, the experiences that minorities have had over the years of oppression, exploitation, and being pushed aside by other dominant and majority population groups, despite such long time or oppression. Although indigenous peoples are a minority due to their small population, indigenous peoples are also a minority due to their unique and locally specific ideologies, socio-cultural systems, and socio-political systems, all of which share the same living space, making them a minority in their own right [12], [13]. Traditionally, groups of people have been associated with each other from generation to generation (territorial basis) or through their common ancestors (blood relationship) or by a combination of both [7], [8].

In the case of ulayat land, it is a communal land that cannot and cannot be registered in the name of a single party or a group of parties [14]. All land in the Minangkabau region, which coincides exactly with the West Sumatra Province's administrative area, is "ulayat land." This land is owned by the community and is subject to the rules and regulations of customary law regarding its use and distribution [14].

According to customary law, there are at least four main characteristics of forms of land tenure - the absence of absolute ownership, the inclusive control of land, the prohibition of buying and selling land (even land that has already been privately owned), as well as the respect for people and their work because land is not owned. In reality, these four characteristics are connected, which is a reflection of the concept that land is actually a unique resource that cannot be compared with any other type of economic resource. Because the amount of land is limited, it is imperative that land be used fairly, and it must be able to provide welfare for the people in the world [3], [14]. For this reason, land should not be used as a commodity that can be bought and sold on the free market [9]. Societal customs regarding the ownership of land are as follows:

### A. Absolute Control of the Land Is Impossible

Much literature has discussed the specific nature of land tenure according to customary law, which states that land cannot be absolutely owned according to customary law. As an example, in the Minangkabau legal system, the concept of land and the concept of ulayat are separated by the principle of horizontal separation [14]. Therefore, physical ownership of land remains communal, and its ownership cannot be transferred, whereas customary arrangements (or the manner in which they are used) are the responsibility of the chieftain [15].

As the name suggests, the ulayat right refers to the legal right of the legal alliance to its territory, including everything (wealth) which is found therein [15]. Because of all members of the community abiding by the rules of the community, this is maintained. The same goes for its use. In addition to these customary rights, there are individual rights that arise from these customary rights, with the arrangements of course. In this sense, one could say that customary rights are enclosed, permeating, and covering existing rights relating to land, that arise and develop among the members of the association and are incorporated into the organization's constitution.

### B. The Land Tenure System Is Inclusive

A lack of absolute ownership can be interpreted as an indication of the inclusive nature of mastery in the absence of absolute ownership [3], [9]. As a result, in addition to tribal lands, all members of the tribe can also control these lands, though certain procedures must be followed; even people who come from outside the tribe may be able to use them for their

own benefit [4], [16], [17]. People belonging to a particular ethnic group may be able to work on a piece of land that clearly belongs to another ethnic group. To acquire this right, one must, of course, fulfill certain obligations, for instance, in the form of financial contributions, tributes, and gifts to do so [9], [12]. A person's obligation to cultivate a piece of land that is the ulayat of a certain ethnic group is actually not solely dependent on its economic value, but is merely a form of legal recognition of the fact that this person is volunteering to cultivate a piece of land that is the ulayat of that particular ethnic group [14], [15].

To be able to use customary land by foreigners, they must obtain permission from a legal partnership by paying an interest on the land [9]. Migrants are also allowed to marry one from the families of the land clan or its descendants, in addition to asking for permission to cultivate. Due to his position as *iak beru* (son-in-law) of the land clan, he has the right to own or use land in the village as he sees fit. Customary law in the Karo Indigenous community basically does not distinguish between the rights of its community members and outsiders in relation to ownership and control over communal land [2].

### C. Land May Not Be Traded

The 'kesain land', owned by the Karo tribe, is not subject to trading except for the buildings that are constructed on it [18]. Therefore, if a member of a community no longer possesses a need for the land, the land will be returned to the village. When someone owns a piece of land, he is free to cultivate and manage it in any way he desires. In such a case, if the land is neglected, it will again become land owned by a legal partnership, which means it can no longer be sold to anyone else [19]. The adat leader or village *pengulu* is the person who leads the legal union, who regulates how the property is used or gives it to the residents in need according to the needs of the legal union. There are also rights to land included in customary rights, such as the right to own a piece of land. The right to use a piece of land is always accompanied by an obligation, which ensures that the land is not used only for individual benefit, but also benefits the community at large.

Generally speaking, land is owned in three forms, namely (1) lands controlled by the state (lands owned by the state), (2) lands controlled by the community (lands owned by the community), and (3) lands owned by private individuals (lands owned by private individuals)

[18], [19]. Community land cannot be sold (not salable), even the government cannot sell it. Currently, this land is being developed and cultivated, but nobody has the right to buy or sell it since it has not been developed. The land in Mesopotamia (which is situated between two rivers, the Tigris and the Euphrates) in Iraq, for example, can be classified under this category [20].

### III. RESEARCH METHODOLOGY

Based on an assessment of written or spoken words from the people observed in the study [21], there are different ways to collect data for data analysis, such as collecting information from books or other sources. To ensure that data is accurate and efficient, authors conduct field research on relevant objects and related places to improve the data based on the grounded theory [21]. An array of methods was employed to collect the data, such as interviews, observations, and literature reviews.

The reason for choosing a qualitative approach for this research is because this method is particularly suitable for exploring and understanding the subjective experiences, perspectives, and practices of the indigenous communities in Indonesia.

Qualitative research is a flexible and open-ended method that allows researchers to gain a rich and nuanced understanding of complex social phenomena. It is particularly useful for studying issues that are not easily quantifiable, such as attitudes, beliefs, and experiences. In this study, the researchers were interested in exploring the unique perspectives, experiences, and practices of the indigenous communities with regard to food autonomy. A qualitative approach allowed the researchers to gain a deeper understanding of these issues through in-depth interviews, observations, and literature review.

The model of interactive data analysis used in this study involves a cyclical process of data collection, analysis, and interpretation. The three streams of activities that run simultaneously during the analysis phase are condensing the data, displaying them, and drawing and checking conclusions.

1. *Condensing the data*: This involves reducing the amount of data collected and transforming it into a form that is easier to analyze and understand. This can include categorizing data into themes, summarizing findings, and identifying patterns and relationships in the data.

2. *Displaying the data*: This involves presenting the data in a way that makes it easier

to understand and interpret. This can include creating tables, graphs, and visualizations that help show patterns, trends, and relationships in the data.

3. *Drawing and checking conclusions:* This involves using the data to reach conclusions about the research questions and checking these conclusions against the data to ensure their accuracy and validity. This stage also involves reflecting on the findings, considering alternative interpretations, and addressing any limitations or biases in the data.

In conclusion, the model of interactive data analysis used in this study provided a systematic and rigorous approach to analyzing the data collected, which allowed the researchers to gain a deeper understanding of the experiences, perspectives, and practices of the indigenous communities in Indonesia with regard to food autonomy [22].

#### IV. RESULTS AND DISCUSSION

At the end of a decade, food sovereignty on the topic of Indonesia is one of the most frequent words used and expressed by many circles in the country. However, the terms food sovereignty alone are often interchangeable, even misinterpreted as the term resilience food, which is a draft different from the term sovereignty food. In addition to being sovereign in determining policy in the area of food, sovereignty in the area of food emphasizes the importance of domestic production with optimum use of the sources of power and wisdom available locally.

Quoting President Joko Widodo's statement, "Food security is different from food sovereignty. Food security *only* means that food *is readily available* in logistics warehouses and markets. But it does not matter where the food comes from, whether it is imported or produced locally. The matter is that it is accessible. However, from the perspective of "food sovereignty", food is always available, we produce it ourselves, and our marketing capabilities are strong, so even the food we produce from our agriculture can dominate foreign markets. We are sovereign over our food sources. If there is chaos abroad, our logistical reserves are still strong because our food production is more than sufficient to meet people's needs. In the Working Cabinet government, the goal is "improvement of food sovereignty". The highest level of food sovereignty can be achieved when Indonesian food products are abundant both in foreign and domestic markets, at least in the markets of ASEAN countries" [23].

The environment describes in detail different

eating patterns. There are different eating habits in each public or ethnic group based on their adopted habits. On the side of hunger, eating is not the only motivation for overcoming it; there are physiological needs as well. For example, filling nutrition follows the effect, which is the side that needs to be addressed. The strata or groups of society have different patterns in terms of acquiring, using, and evaluating food, which are characteristic of each stratum or group of society. As a result, the food tree is becoming more and more diverse in terms of consumption type [24].

Many different food trees been developed in Indonesia, such as sago trees, corn trees, cassava trees, and sweet potato trees. Various types of plants are growing and available throughout the years, depending on the land and season, in which they are grown. There was once a time when the hereditary public village used different sources of food as a means of fulfilling their requirement for food trees daily or as a snack in the past. There is also a diversity of nutrition in the diversity of food, even between food that comes from plants and foods that contain nutritious medicines. Local food system is what it is all about, for ensuring fulfillment of food needs and coping with the danger of starvation or crisis food [25]. A wide range of potential is contained in the local food system, and this is very likely to be able to resolve the problem at the local level of food. Community-based food systems play a vital role in ensuring food needs are met. In fundamental terms, a community-based food system offers opportunities for people to increase their income, livelihood, and ability to produce and ensure that they have food security in the future [30].

Historically, since the colonial era in the Netherlands, the field system prohibited party government because it was considered to ruin the environment, while the rice field system was not perceived to harm the environment and developed. Because of the post-colonial system and different government programs, rice fields continue to receive attention and are given various incentives. A government program, referred to as Revolution Green, was introduced by the Indonesian government in the late 1960s. This program mainly focuses on the effort of farmers to plant rice fields. Part of the effort includes requiring farmers to use superior varieties of paddy, to use organic fertilizer, to use pesticide synthesis, to develop and repair irrigation systems, as well as to repair methods of planting paddy fields. Previous research has also shown that indigenous communities in Indonesia

use various strategies to maintain food autonomy, including collective management of land and resources, the use of traditional agroforestry systems, and the promotion of agrobiodiversity. These strategies have been effective in maintaining food autonomy and ensuring food security for these communities.

Because of the Revolution Program Green, paddy rice field productivity has been increased by a gross and macroscale positively. Despite this, it is believed that the impact of the program has been to homogenize planting varieties of paddy with dominant varieties of superior paddy varieties. Due to the damaging effects caused by the changes, many local paddy varieties have been extirpated across a large range of Indonesian regions. As an example, approximately 75 percent of land planted with rice in Indonesia was devoted to the cultivation of hybrid varieties of paddy, and more than half of them were planted with only two varieties, namely Cisadane and PB36 or IR36. Therefore, the quantity of 1,500 varieties of paddy in local areas is not enough, and some of these varieties have even become extinct [26].

As per the local culture and tradition, the society of Baduy cultivates the paddy field based on their knowledge of ecology and cultivates it in a way that supports the culture and habitat of the region [27]. Historically, in the Baduy society, rice fields (*pare huma*) were used for abstinence or taboo (*teu wasa*), traded, and stored for a maximum of 50 years in rice barns (*leuit*). The paddy field is mainly only used for various ceremonies in the fields or consumed daily, mostly if you do not have enough money to buy rice for the ingredients you need for your daily meals [27].

There has been an impact of the Revolution program Green on the extinction of local varieties of paddy in Indonesia. In the 1980s, the government attempted to rescue 10,000 varieties of paddy, but the effort failed due to a lack of resources [26]. Furthermore, because of the Revolutionary program Green, the knowledge ecology has been lost by the farmer.

Before the program starting, the peasants already had a wealth of local knowledge in ecology, including knowledge about method of farming with adapting to neighborhood dynamics change with a method of arranging prey, selecting rice seed, making organic fertilizers, pest control with natural pesticides, etc. [27].

For the time being, with the Revolution Green program, the farmers just became buyers and growers of organic seeds as a result.

As a legacy Indonesian culture, wisdom local

is something shaped over time over the course of time. Because of the beliefs and values of the local people, wisdom is born of something public to nature and the environment. Local wisdom is a collection of local values, norms, systems, beliefs, and ideas that reflect local culture and society [31]. This is because the wisdom of the locals in each area is different. Local wisdom, nature, and the environment are strongly connected in terms of resource management. There is a corner of society that views nature and the environment from a single perspective. The society develops ways on its own to maintain the balance of the nature and the environment to use it to fulfill the needs of individuals. To manage nature and the environment, we should develop wisdom through which local communities can manage their own excess. In addition to maintaining the balance between natural resources and the environment, local culture is also preserved.

To maintain the wisdom of a local culture, it is necessary to make some effort to look after him so that society can develop permanently. It is needed to accompany the venture with an awareness of the role that wisdom will play inside the problem.

Local wisdom and environmental resource management are closely connected. However, local wisdom has been marginalized throughout the course of development. The wisdom of local experience relates to these challenges, among them the rapid development of technology followed by the use of technology excessively without the provision of maintaining local knowledge. The overuse of technology could result in a loss of balance between nature and the environment. Many people in an in-between society do not realize the essence of wisdom that comes from the local wisdom and left behind habits that were built a long time ago by our grandmothers. Local wisdom for managing nature and the environment is fading, even abandoned by lower generation successors.

The results of the research from a case study of ethnoecology plant paddy in the Baduy society in Banten and the residents of Kampung Naga in Tasikmalaya indicated that the farmers in these communities play a crucial role in preserving the local varieties of paddy in situ. This highlights the importance of considering the role of local communities in conservation efforts and their potential as custodians of local biodiversity [27].

However, the findings of this study are specific to the communities in Baduy and Kampung Naga and may not necessarily be generalizable to other communities or regions. The choice of these communities as the research

object was based on the availability of relevant data and access to the communities. This may have limited the diversity of perspectives and experiences represented in the study and may affect the validity of the conclusions drawn.

Hence, the effort to conserve the genetics of the paddy plants is not just an effort of the government, but it can also be carried out by the farmers in a manner that is passed down from generation to generation. Farmers have certain habits in terms of choosing varieties of paddy that correlate with considerations, such as about taste or culinary, the suitability of the location for the crop, the seasons, the conditions of the water system, and the age of harvesting rice. Consequently, farmers have been able to choose from a wide variety of varieties of paddy, causing the formation of varieties of paddy local to the farming system. However, as a result, the policy, modern government, and farmer effort emphasize only paddy production, with introducing a number of varieties of paddy through the Green Revolution Program.

The current condition of research on indigenous community-based strategies for sustaining food autonomy in Indonesia is supported by various laws and regulations. The Indonesian government recognizes the important role that indigenous communities play in preserving local food varieties and sustaining food autonomy and has implemented various policies and laws aimed at supporting these communities and their strategies.

For example, the Indonesian government has implemented policies aimed at promoting agrobiodiversity and supporting traditional food production systems, including agroforestry. In addition, there are laws and regulations aimed at protecting the rights of indigenous communities, including their rights to land, resources, and traditional knowledge. In terms of research, the Indonesian government has supported various initiatives aimed at improving the understanding of indigenous community-based strategies for sustaining food autonomy and their potential for addressing food security challenges.

Therefore, various varieties of paddy in the local region are experiencing extinction in a manner that is quite extensive. As a result, the extinction of the diversity of varieties of paddy could be caused by changes in government policy, ecosystem changes, and consequent alterations to the system of social economy and culture society. Hence, it is necessary to involve the participation of the active population in the countryside in an effort to conserve various local paddy variety in Indonesia. Besides that, local inhabitants of rural

areas should be able to combine their ecological knowledge with the knowledge of western science, to use this knowledge to sustainably develop agriculture in Indonesia.

In Indonesia, there are various food trees developed by communities, such as sago trees, corn trees, cassava trees, and sweet potato bits. The variety of plants available over a long period, in various seasons and conditions, grows throughout the years since before, in a hereditary manner, public village used diverse food sources. As a fulfillment basis, food tree is needed daily rather than as snack. Food diversity also contains a diversity of nutrients, even between the food that comes from plants and the food that comes from medicinal plants. Local food system is the mainstay for ensuring the fulfillment of food needs for the community and coping with threats from danger such as starvation or food crisis. The local food system could very well be a way to resolve communities' food problems. "Community-based food systems" have a critical role to play in ensuring that the food needs of the community are met [28]. Community-based food system offers to people something opportunities where they are could increase income, livelihood they, capacity for produce, and in fundamental something road roomy where they are could ensure resilience food them in the future.

Because of the green revolution, indigenous peoples who do not consume rice as a staple food have weak protection of their local commodities as a means of food security [26]. The green revolution had a significant impact on the indigenous Papuan people's use of sago as a staple food, although sago is not only a staple food but also a livelihood and an important symbol in their traditional culture [17], [29].

According to Public Papuan custom, sago performs various functions. As a matter of economics, sago starch contributes significantly to the food supply of citizens and the income of resources. Sago is also commonly worn on ceremonies by custom [29]. Additionally, sago has a multitude of functions other than starch. It can be used to build walls, floors, houses, or burn wood. The leaf can weave into the roof, walls, and containers for goods storage. As a function of daily public life, sago hamlets are attached to villages, particularly those that are traditional [17].

According to the results of research conducted on sago farmers in the Lake Region Sentani [17], the future of sago as a local food source is heavily influenced by society and local governments.

In Papua, sago not only becomes one of the

main sources of food, but it is also one of the main sources of income for the communities. Many people live around Lake Sentani, depending on sago for their survival. Papuans, especially in the area of Lake Sentani, finance their daily lives by sourcing sago from forests. It was expressed by Uncle Bob<sup>2</sup>, a resident of Kampung Yoboi, as follows:

“We live on sago. For us, sago is more than just a source of food. It is used in various ceremonies as part of the customs. Because of sago's financial support, we can pay tuition fees for our children up to the time they become undergraduates. Many of the residents of Yoboi Village became soldiers, police officers, and civil servants of the government. They receive their funding from the sale of the results for sago.”

The situation that the indigenous Dayak Deyah community is experiencing in Gunung Riut Village, Halong District, Tabalong Regency, South Kalimantan is very different from what the Dayak Deyah community is experiencing. It is believed that the indigenous Dayak tribe of Dusun Deyah started living with some type of field agriculture in the first place, such as planting a number of types of plants, vegetables, as well as hard plants. As well as maintaining a number of animal cattle, they also maintain a number of poultry. As an example of an outside activity, at present, there is no specific activity routine. As a result, they use the result forest to satisfy the needs of their families and for other activities such as hunting, catching fish, and others.

The Dayak tribe is a population of indigenous people who were born and lived on Borneo Island. They were once part of the indigenous population. It is something that is cherished by the tribe that was born with customs that had meaning since the grandmothers of the Dayak people arrived, and are still closely related to the tribe today. Despite the fact that the Dayak tribe is a shy tribe, it is very friendly to anyone regardless of their social standing or background. The Dayak tribe is almost entirely farming and hunting with the system of Dayak farming being the move of the field or huma, which is a knowledge-based system handed down from generation to generation.

There are customs and practices associated with opening land for farming (behuma). For instance, there is a custom that is done to ask permission to nature and to the ancestors, led by a friend or head custom from the village to make

the business farmer or behuma successful and blessed.

However, at the present time, mining companies are conducting operations around the area of the indigenous peoples, eroding their local wisdom. Indirectly, the indigenous Dayak Deyah people in the village are losing their ability to manage land as a source of food. Because of mining companies indoctrinating the modern-day pattern of increasing household income through business activities, farming communities are forced to change their habits with regard to doing business.

In addition to the development of technology, wisdom local is facing the challenge of an increasing number of residents. High food production is required to meet the needs of the people, so agriculture must be modernized to provide adequate food. Because of public leaving locally-owned wisdom, it is no longer able to support life society and changes with the pattern of thought for exploiting nature. This requires various efforts for conserving wisdom, managing natural resources, and protecting the environment.

A possible approach would be to increase the capability of the public to filter incoming technology that keeps balance with nature and the environment while customizing it with the wisdom of the local society. Afterwards, the public could be taught to think holistically instead of mechanically for there to be no exploiting of nature. Hence, with an awakened public, it will be imperative to manage and preserve the natural resources and ecosystems of each area and preserve the wisdom and values that are a part of local culture.

## V. CONCLUSION AND RECOMMENDATIONS

The local wisdom of indigenous peoples is increasingly being eroded by the modern age as it relates to creating food security. The government places a high priority on the results of development rather than maintaining indigenous knowledge. There are government policies that do not support the local wisdom of indigenous peoples in their area, such as green revolution policies, spatial planning policies, and resource usage policies. Due to this, indigenous peoples have become dependent on food sources from outside their environment.

This effort can be preserved because there are various covering party societies, state governments, and government areas that support and work together. Factors include economics and culture. Sago becomes a major source of income for the farmers, but they also continue to

<sup>2</sup> The authors made a direct interview in the area of Lake Sentani.



maintain tradition or habits to preserve their local wisdom. The child grandson inherits the traditions of his ancestors.

In terms of laws and regulations, there are international agreements and conventions that support the protection and promotion of indigenous rights, including the right to food. For example, the United Nations Declaration on the Rights of Indigenous Peoples and the International Labour Organization Convention No. 169 both recognize the importance of preserving and promoting the traditional food systems of indigenous peoples.

In Indonesia, there are also laws and regulations aimed at protecting the rights of indigenous peoples, including the rights to land and resources. However, these laws and regulations are not always effectively implemented, which can lead to the erosion of local wisdom and the displacement of indigenous communities from their traditional lands.

To address these challenges, it is important to improve the implementation of existing laws and regulations that support the rights of indigenous peoples. This could include the development of specific policies and programs aimed at promoting the preservation of traditional food systems and the empowerment of indigenous communities in food production and distribution.

In conclusion, while there are laws and regulations that support the rights of indigenous peoples, including the right to food, it is important to improve the implementation of these measures so that they can better support the preservation of local wisdom and the empowerment of indigenous communities despite increasing challenges to food security. By doing so, it will be possible to ensure a more sustainable and secure food future for Indonesia and the region.

In addition, it is important to consider the limitations of the results obtained from this study. The use of qualitative research methods may have introduced biases and limitations in the data collection and analysis. For example, the perspectives and experiences of certain individuals may have been overrepresented, and the findings may not necessarily reflect the views of the entire community. It is also important to consider the context-specific nature of the findings and the need for caution when extrapolating the results to other settings.

In conclusion, the findings of this study are significant in highlighting the role of local communities in preserving local biodiversity, but it is important to consider the limitations and context-specific nature of the results. Further

research is needed to validate and expand upon these findings and to understand the factors that contribute to successful conservation efforts in different communities and regions.

For further recommendation, the research methodology and data analysis should be thorough and rigorous, incorporating both qualitative and quantitative methods to gain a comprehensive understanding of the strategies employed by indigenous communities. The research should also consider the cultural and historical context in which these strategies have been developed, as well as their effectiveness in promoting food sovereignty.

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