

# Empowering Orang Asli communities through an integrative approach to sustainable food sovereignty

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## Abstract

The Orang Asli, the indigenous people of Malaysia, are experiencing many environmental, sociocultural, and nutritional issues that have negatively impacted their overall well-being. This research aimed to identify the challenges that undermine the Orang Asli. This paper aims to provide an alternative framework for development for the Orang Asli that emphasizes food sovereignty and the vital role that indigenous food systems play in supporting the health and well-being of the Orang Asli.

Twenty-four informants from three villages (Telimau, Bukit Terang, and Kampung Sat) were interviewed using both semi-structured interview and participant observation methods. The proposed Sustainable Food Sovereignty Model advocates for the need of the Orang Asli to determine

their own food systems, thus allowing them to respond to their own needs, utilizing culturally based indigenous food, and facilitating decisions about the allocation of their resources. The paper also highlights the importance of ethical space that fosters collaboration and respect, and of the preservation of biodiversity in supporting sustainable food systems. It also emphasizes the need to shorten the food supply chain to strengthen local food sovereignty and resilience.

## Keywords

food sovereignty, Orang Asli, Semai, Malaysia, well-being, wild edible plants, WEPs, food systems, Indigenous Peoples

## Conflict of Interest

The author declares that there are no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Author Contribution

The author was solely responsible for design and writing, and has read and approved the final manuscript.

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## Introduction

Indigenous food systems play a vital role in supporting the food security, health, and well-being of indigenous communities. Many researchers have aimed to define indigenous food sovereignty by adding layers to existing food sovereignty definitions, usually including recognizing the social, cultural, and economic relationships that underlie community food-sharing (Coté, 2016; Morrison, 2011). These definitions also seek to uphold indigenous people's culturally defined responsibilities to nurture relationships with land-based food and political systems. Indigenous food sovereignty notably differs from general food sovereignty in that it also emphasizes culturally grounded decision making, the protection of traditional knowledge, and resilience in the face of vulnerability such as land dispossession and marginalization. This could potentially allow indigenous people to implement culturally appropriate practices and systems of knowledge to support initiatives centered around indigenous food, land, culture, health, economics and sustainability that affect their overall well-being (Coté, 2016; Morrison, 2011).

The Orang Asli, who are the Indigenous peoples of Peninsular Malaysia, number around 227,900 (0.7% of Malaysia's population) (The Star, 2025). Although their ethnic and historical identity has long been contested, they are generally considered to be the first people to occupy Peninsular Malaysia (Minority Rights Groups International, 2018). Compared to other Indigenous groups in West Malaysia, they do not enjoy any particular rights or privileges (IWGIA, 2017; Masron et al., 2013; Nicholas, 2003; Sato, 2019).

Malaysia, a country rich in biodiversity, seeks to become a high-income country (World Bank Group, 2024). The current policies in place regarding ownership of land for urbanization purposes and the contest for valuable resources in the tropical jungle have further disadvantaged the Orang Asli community, as they live in prime areas that the government is interested in developing. For the Orang Asli, these changes have brought about a social, environmental, health and cultural crisis that has affected their overall well-being and socio-cultural identity. As such, the main objective of this research is to provide an alternative framework to

development while emphasizing food sovereignty, helping reignite the relationship with local plants. Wild edible plants (WEPs), "plants that grow spontaneously in self-maintaining populations in natural or semi-natural ecosystems and can exist independent of direct human action" (Heywood, 2008, p. 586), have cultural and nutritional value, especially in ethnic minority communities such as the Orang Asli. WEPs play a pivotal role in the diets of many indigenous communities, providing both macronutrients and micronutrients, while also serving as a bridge to their traditional food knowledge. Additionally, they help address contemporary challenges such as malnutrition, food security, and biodiversity loss. Initiatives involving WEPs can shorten the food supply chain and optimize the management of sustainable resources. This paper also suggests that the Orang Asli should have a central role in discussions around food security and broader efforts of self-determination.

## Orang Asli Identity

Even after Malaysian independence was declared in 1957, as a delineated ethnic group the Orang Asli did not exist. They did not see themselves as a homogenous group or adopt common ethnic markers to differentiate themselves from the dominant population. Instead, they derived their micro-identity spatially, identifying with the specific place they lived in. However, to help end the advancement of communism, the government decided to endorse a reduced definitive alternative, "Orang Asli" (literally, "natural" or "indigenous people"), which the state considered a push to recognize the first people of Malaya. It was only later that the Malaysian government decided to categorize them as Semang (Negrito), Senoi and Proto Malay, consisting of 18 Orang Asli groups that are both linguistically and culturally distinct. For this paper, I will focus on the Semai, a sub-group of the Senoi, which is one of the three main ethnic divisions of the Orang Asli in Peninsular Malaysia. The Semai are the largest Orang Asli group in West Malaysia.

During the British reign, the Orang Asli were viewed as wards of the state requiring government protection, which slowly eroded their resource base and the control they had over their lands (Howell, 1995). In the late 1950s, the Aboriginal Peoples

Act was passed to protect the Orang Asli while integrating them into society. For that purpose, the Jabatan Hal Ehwal Orang Asli (JHEOA), The Department of Aboriginal Affairs, was established in 1955 and was fashioned after the U.S. Bureau of Indian Affairs and the Australian Department of Aborigines (Nicholas, 2000). JHREOA is now known as Jabatan Kemajuan Orang Asli (JAKOA), the Department of Orang Asli Development. It is also important to that the Malaysian land system is founded on the Torrens system of British colonial rule, in which land that was not independently owned by a registered title deed was considered crown land and was owned by the various states in the name of the sultans (Colchester, 1995). Consequently, nearly all Orang Asli are unauthorized occupants, despite having lived on the same property as their ancestors for many generations (Endicott, 2003). The state government may designate lands as indigenous areas or reserves in accordance with the Aboriginal Peoples Act of 1954. In reality, the state has been hesitant to do so, and has even taken back land without paying the Orang Asli fair compensation (Dentan et al., 1997).

Harper (1997) suggests that the Malays' relationship with the Orang Asli was sometimes framed in terms of hierarchical authority, with the Orang Asli perceived as representing an earlier stage in Malaysia's development. This perception may have contributed to British paternalistic attitudes, as it reinforced the idea that the Orang Asli should be assimilated into the Malay community and guided toward a so-called 'civilized' way of life. A document released by the JHEOA in 1983 highlighted the government's intention to achieve Islamization of the Orang Asli community and their integration/assimilation with the Malays by resettling them (Nicholas, 2000). For the Orang Asli who have refused to part ways with their tradition, the resulting marginalization leaves them worse off (Toshihiro, 2009). The Orang Asli are not wholly opposed to change; on the contrary, they want some of the advantages brought about by development without losing their cultural and ethnic identities.

The Orang Asli have been perceived as failures by the Malaysian state due to the misinterpretation

of colonial legislation to meet the current political climate (Idrus, 2011). They are wedged between protectionist law and the hyper-development program. They consequently experience identity loss, malnutrition, non-communicable diseases (NCDs), marginalization, and poverty due to issues with their culture, lifestyle, education, housing, economic efforts, and nutrition (Poulain et al., 2015). Therefore, it makes sense for the Orang Asli to be free to choose their food systems, whether based on traditional or contemporary food or a blend of both, as it may help them keep their identity and knowledge base and lower the risk of malnutrition and NCDs. Understanding their food systems empowers the Orang Asli communities to meet their nutritional needs through indigenous foods and make informed decisions about how to allocate their resources.

### **Methodology**

The research was grounded in a commitment to ethical engagement and collaborative knowledge production. This study contributes to the growing body of work on food sovereignty by centering the experiences, knowledge systems, and aspirations of the Orang Asli in the co-development of a culturally grounded and ecologically responsive food system framework, which seeks to address key questions that include the role that indigenous knowledge can play in shaping sustainable, community-led food systems.

I was able to gain initial access to the Orang Asli communities through collaborators who worked closely with them. My primary goal was to evaluate the nutritional content of their WEPs and explore the potential of WEPs to address global challenges such as food insecurity, malnutrition, and the loss of biodiversity. I also aimed to determine the medicinal properties of the plants, with the hope of revalorizing them in the diets of urban populations (Tharmabalan, 2023). This long-term engagement required me to be mindful of the power dynamics and the historical marginalization of the Orang Asli community. As an outsider, I recognized my privilege and the responsibility to ensure that their voices were central to the research while reflecting on how my presence might influence their responses.

In mid-July 2016, an exploratory study was conducted to identify suitable villages for assessing the impacts of cultural assimilation and the transfer of knowledge within the Semai community, a subgroup of the Orang Asli. Transfer of knowledge in this case refers to how cultural knowledge, skills, and traditions are passed from one generation of the Semai community to the next. I gained access to the villages with the help of a few individuals who worked closely with the community. A participatory approach helped bridge the gap between my positionality as an outsider and the community's values and helped to ensure their voices and perspectives were central throughout the research.

Potential key informants were selected based on their competence and capability in identifying WEPs and providing in-depth information about their usage, parts of the plants used, medicinal value, and taboos. They were also required to have experience treating community members with diseases. Non-key informants were substantially

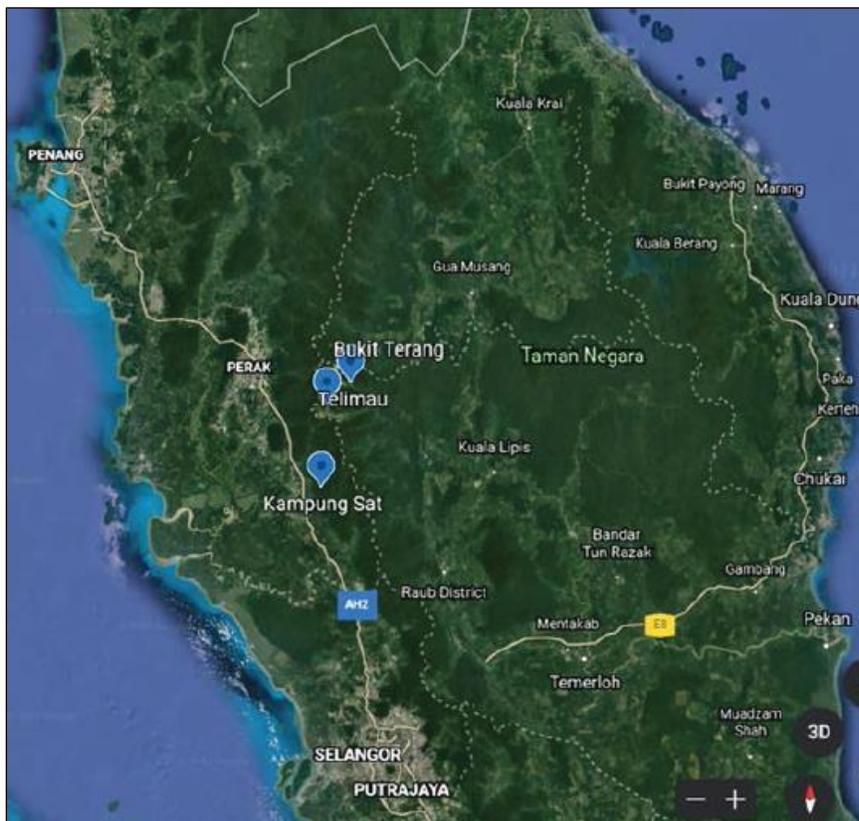
younger than the key informants and did not often interact with indigenous knowledge, despite being still active practitioners. Their perspectives were valuable for assessing general familiarity with WEPs and for understanding how cultural integration and modernization have shaped the transmission and practice of indigenous knowledge among younger generations. Additionally, their role was more reflective of the general community experience rather than the specialized or authoritative perspectives held by key informants.

After selecting the villages, I spent time building rapport with the villagers and key informants, as the Orang Asli are naturally shy (Dentan, 2000). It took several visits over a year to gain their trust, which was crucial due to past exploitation. This process allowed me to integrate into the community and ensure that informants could speak freely. The initial exploratory phase was instrumental in refining the problem statement, to help clarify uncertainties and indicate significant areas for

future research. Once trust was established, I began identifying the various types of WEPs used by the Semai.

This research was conducted among three Orang Asli villages in Perak and Pahang Malaysia from November 2018 to January 2020. Figure 1 shows the locations of the villages. Orang Asli villages can be divided into three subcategories: "easily accessed" villages, "forest-fringed" villages, and "remote" villages (Lim, 1997); the selected villages corresponded to those three criteria. Telimau, in Pahang, is considered easily accessible. Bukit Terang is forest-fringed, and Kampung Sat is remote; both are located in Perak. The three villages also provided valuable insights into how varying degrees of

**Figure 1. Map Showing the Location of Telimau, Bukit Terang and Kampung Sat**



access to urban areas affect lifestyles, ranging from heavy reliance on the forest (Kampung Sat), to a balance between forest and nearby towns (Bukit Terang), to more modernized, city-influenced living (Telimau).

A multisite research approach allowed me to provide a deeper understanding of the similarities and differences between the various settlements (Marcus, 1995). The “following” approach proposed by Marcus emphasizes closely tracking people, practices within their social and cultural contexts. This provides an avenue to allow for a richer form of data collection as I was able to actively participate, observe, capture nuanced insights and interact closely with both key and non-key informants. Also, the informants were aware that observational activities were taking place, allowing for easier access among community members.

In order to select key informants, a purposive sampling technique was utilized, based on specific prerequisites and criteria that needed to be considered in order to achieve the study's primary objective. Snowball sampling was also employed to identify informants who were active practitioners of indigenous knowledge, particularly those still engaged in foraging and hunting.

Selecting key informants involved consultations with the headman of each village to explain the research objectives and methodology. Then I briefed key informants on their roles and the confidentiality measures in place. After the selection process, nine key informants and 15 ordinary informants were selected. The key informants consisted of five males and four females, and of the 15 ordinary informants, seven were male and eight were female. Eight informants were selected from each village, with ages 25–70 years. Data was collected through semi-structured interviews, inter-generational information sharing, and participant observation. Ambulatory interviews were also conducted, as I followed some key informants into the jungle fringes and listened to them talk about the environment, which provided deeper meaning about their interaction with the environment as well as a wealth of information on plant identification, harvesting techniques, and medicinal use. Data was analyzed through a structured process of familiarization with the data through manual tran-

scribing, generating initial codes, identifying and reviewing themes, and refining them to ensure that they accurately reflected patterns across the data set and aligned with the study's research questions (Braun et al., 2017).

My identity plays a crucial role in developing and communicating conclusions based on fieldwork, significant in this case because indigenous research methodology is intimately linked to responsibility, sensitivity to other people's knowledge systems, and perception of different realities. Therefore, my social formation and desire to shed light on the “other” have shaped how I have constructed myself as a researcher. Rather than positioning myself as an authority, I recognize that my experiences and background influence the way I approach research. My role is to be a respectful facilitator, and I am dedicated to working with the Orang Asli community to co-create and co-learn (Henriksen, 1990). In this spirit, I aim to present a holistic analysis that emphasizes the need for the Orang Asli to exercise self-determination.

Although there have been calls for indigenous research to be done by indigenous people, I agree with Evjen that “[t]he other', being an insider or outsider, may present different knowledge, [a] difference that together provide a broader picture of an indigenous culture than by either one of them alone” (2009, 190–191). I am reminded to be a “reflexive researcher,” to uphold indigenous principles, ideals, values and philosophies and the need for indigenous self-determination.

## Findings

From the transcripts, five key issues impacting the overall well-being of the Semai were identified: a dependent economy, with increasing dependence on a cash-based economy; shifts in the Orang Asli food system, including dietary changes and the decline of wild food consumption; declining health; erosion of traditional indigenous knowledge and practices, and cultural changes.

### *Dependent Economy*

The shift to a sedentary lifestyle in the Telimau and Bukit Terang settlements has led to increasing reliance on government support. The impacts of deforestation and relocation away from traditional

lands have significantly disrupted their ability to engage in traditional hunting and gathering practices. Additionally, fluctuations in market prices and the instability of income, compounded by the broader effects of development, are steadily altering their socio-economic structures. As a result, wealthier non-indigenous families sometimes request specific wild animals or forest products, and intermediaries (local traders) facilitate these sales. In response to these evolving circumstances, the Semai have transitioned to a cash-based economy, incorporating both wage labor and the production of commodities. Many individuals have adopted a multifaceted approach, adopting a “Jack of all trades” mentality, blending their deep-rooted connection with nature with the creation of a distinct, more adaptive worldview.

Most men here are busy working on commercial farms or their own farms, that they have very little time to go into the jungle. There are families here, who seize these opportunities and sell hunted meat and jungle produce at quite a high price (RM 30 for an animal). It is considered expensive compared to what most of them make. But there is still a demand, as these meats can be kept for a period of time, and it is big enough to feed 4-5 families.  
(Informant 4, male, 56 years old)

### *Shifts in Orang Asli Food System*

Wild plants and hunted animals contribute a considerable proportion of the Semai diet, particularly in Kampung Sat, where 20% of their food is from WEPs and about 15% from wild animals (Tharmabalan, 2022). However, this is no longer feasible, especially in Telimau and Bukit Terang, where there has been an increase in rice consumption (Telimau: 50%, Bukit Terang: 40%, Kampung Sat: 25%), cassava (Telimau and Bukit Terang: 10%, Kampung Sat: 16%), and commercial vegetables such as carrots, tomatoes, cucumbers, brinjal, broccoli, and cabbage (Telimau: 3%) (Tharmabalan, 2022). This shift has also led to changes in the roles of women. Traditionally, women played an active role in gathering vegetables, especially in Telimau. Decreasing accessibility to wild plants has made gathering more difficult, as they now need to spend

at least eight to nine hours in the jungle to collect the valuable leaves, limiting time for household tasks and childcare. This extended effort not only increases their workload but also shifts traditional family roles, as women must balance subsistence work with other responsibilities. Kampung Sat, located closer to the jungle, still maintains easier access. The Semai in all three villages continue to rely on the jungle for sustenance, with wild plants accounting for approximately 5% of total food consumption in Telimau, 15% in Bukit Terang, and 20% in Kampung Sat. Regarding diet diversity, the villagers in Kampung Sat have the most balanced diet, consisting of rice, cassava, planted vegetables, wild animals, seafood, fruits, and commercially packaged snacks such as biscuits, sweets, and soda.

### *Declining Health*

Many of the villagers in Telimau and Bukit Terang are starting to experience NCDs. Common NCDs such as cancer, heart disease, and stroke are now prevalent. However, as several informants noted, diabetes and high blood pressure are still substantially less common in older people than in younger people. Some say it is because wild plants can counteract the negative impacts of processed food:

Me and my family moved to Ipoh one year ago. I find it hard to consume these vegetables as they do not grow here, though I know of the benefits. The reason we moved here is for my husband to earn a better living and build better lives for my children. My children cannot freely roam and learn about their surroundings. Even if they do, they might not be able to utilize it in the future. So, we do not emphasize this anymore, and neither are my children interested in learning. It is easier to buy fast food here, though it is more of a luxury for my family and me. Also, as I suffer from diabetes and high blood pressure, I can go for my check-ups easily. (Informant 2, female, 36 years old)

It can be assumed from statements by informants that slow transformation due to cultural integration has influenced their way of life, resulting in poor health. However, towards the other end of

the scale, where indigenous knowledge is more crucial to their way of life, they do realize the worth of wild foods and how their medical value could help lower the risk of diseases.

### *Erosion of Indigenous Knowledge*

In Telimau and Bukit Terang, the intergenerational transmission of indigenous knowledge is steadily declining as younger generations become increasingly disconnected from their cultural heritage. Many families with young children are relocating to urban centers in pursuit of better financial opportunities, further accelerating this disconnect. For those who remain in the settlements, deforestation has severely diminished access to the forest, limiting opportunities to teach children about wild plants and the hunter-gatherer lifestyle. While parents play a primary role in knowledge transmission, grandparents serve as supporters in the learning process rather than active educators. Additionally, the national education system often marginalizes indigenous knowledge, reinforcing the perception that traditional practices are irrelevant:

We have tried many ways to engage the younger generation, from storytelling to musical parties and dances. But even through everything, kids are more interested in using handphones or watching Television. They do not see the importance or value of their cultural heritage. The city does not have these vegetables. So how do you expect me to teach my own grandchildren. (Informant 10, male, 68 years old)

This challenge is particularly severe in Telimau and Bukit Terang, where forested areas have been significantly reduced, leaving few resources for experiential learning. Even when families attempt to encourage traditional knowledge, many children exhibit waning interest:

There is not much jungle left to adequately teach children about the environment. At their age (12 years old), I knew how to catch my own fish. Recently, my child saw a monitor lizard, and he mistook it for a crocodile. It really hit me then that my kids are so cut off from their past. (Informant 7, female, 31 years old)

### *Cultural Change*

Intensifying inequalities have become evident within the Semai community, particularly across generational, gender, and religious lines. Government interventions—such as assimilation policies, Islamization efforts, and resettlement schemes aimed at “modernizing” the Orang Asli—have exacerbated social fragmentation rather than fostering cohesion, leading to increased skepticism and division within and among the Orang Asli. Traditional farming, hunting, and foraging methods have also been affected by the resettlement plans, and disputes over land use, rituals, and family responsibilities have risen as younger generations increasingly embrace non-indigenous traditions. Men are shifting toward wage labor, which weakens the transmission of knowledge, while women, who have historically been in charge of gathering forest foods, are increasingly subject to longer work hours and more financial strain. Religious conversion campaigns have further altered social hierarchies and community practices. My observations indicate that those who maintain traditional lifestyles face mounting marginalization, as cultural shifts drive a move away from indigenous practices.

The erosion of traditional knowledge and economic systems has tangible consequences. Securing adequate housing is more difficult when land rights are compromised, livelihoods are less stable without forest resources, and access to culturally appropriate food is limited. Together, these disruptions have negatively affected health and well-being, including increasing people’s reliance on processed foods, and heightening their vulnerability to social and economic stressors.

### **Discussion**

Building on the findings obtained from the semi-structured interviews, participatory observation, and ambulatory interviews, I collaborated closely with the Orang Asli key informants and ordinary informants to co-develop a Sustainable Food Sovereignty Model rooted in their traditional knowledge and practices and designed to offer an alternative framework that is ecologically, socially, and culturally sustainable and endorsed by the Orang Asli themselves. By working with the com-

munity to develop this model, the author ensured that it is responsive to the specific needs, values, and aspirations of the Orang Asli people and that it can help promote their food security and nutritional well-being while preserving their cultural heritage.

### *The Development of the Sustainable Food Sovereignty Model*

The increasing marginalization of Orang Asli communities, coupled with the lack of legal entitlement and deprivation of their land, has caused a spillover effect on biodiversity. With increasing loss of biodiversity limiting their traditional hunting and gathering and constraining their access to commodities, there has been a noticeable decline in their health and an irretrievable loss of their indigenous knowledge. The erosion of indigenous knowledge amongst the Orang Asli can be traced to Malaysian cultural and political agendas, including policies of forced acculturation (Endicott & Dentan 2004), abrogation of land rights (Sahabat Alam Malaysia (SAM) & Jaringan Kampung Orang Asli Semenanjung Malaysia (JKOASM), 2016), as well as motivated assimilation (Nicholas, 2000) leading to deleterious changes in their food sovereignty and ecosystem, further undermining their well-being. Historically, colonial and post-colonial authorities have often framed the Orang Asli as “primitive,” “backward,” or less capable of contributing to national development (Nordin et al. 2016). This worldview positions them as obstacles to modernization rather than as autonomous communities with valuable ecological, cultural, and social knowledge.

As food has been a point of mediation between politics, economics, environmental, and sociocultural factors (Patel, 2009), it is essential to understand the common linkages involving food, which can then be used to further explore the self-determination rights of the Orang Asli in regards to their ancestral land, traditional way of life, and interactions with the dominant population.

The Sustainable Food Sovereignty Model developed is based on a community-driven framework that is designed to create an ethical space—a platform for repositioning them as

knowledge holders and decision-makers rather than passive subjects in externally driven development agendas—that puts indigenous knowledge at the center, which will have a spillover effect on the environment and on economic and sociocultural factors. Built through participatory engagement with the Orang Asli, the model seeks to address issues of land access, identity recognition, nutritional security, cultural continuity, and economic inclusion.

The term “sustainable food sovereignty” is modelled after the concepts of “food sovereignty” and “sustainable development,” because food sovereignty highlights community rights recognized by the UN and that are more real-world, nontheoretical. It would be possible to better navigate the effects of climate change and develop novel ideas and strategies that center ecology, global citizenship, social structures, and food by acknowledging people's rights to decide how they eat (Whitman, 2011). A developmental approach that stresses the Orang Asli's identity, territory, and economic autonomy represents their appreciation for their homeland and natural resources. A sustainable food system, according to the Food and Agriculture Organization of the United Nations, is a “food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised” (Nguyen, 2018, p. 1). A sustainable diet must derive from sustainable ecosystems and cultures that protect biodiversity, which then supports a sustainable food system, improving both natural and human resources (Kuhnlein, 2014). To address the challenges in developing sustainable food systems, it is suggested to first evaluate the risks and vulnerabilities in the ecosystem that traditional food systems are facing. To ensure food security, a prerequisite for food sovereignty, livelihood and entitlement and food availability are three primary strategies (Yaro, 2004).

With the objectives of achieving sustainable development and self-sufficiency, critical elements of food security (Patel, 2009), the food sovereignty viewpoint adopts core aspects from a human rights framework involving ensuring access to adequate and nutritious food, empowering communities to

participate in and shape their food systems, addressing poverty and malnutrition, and promoting culturally and ecologically sustainable practices, allowing people to play a pivotal role in their food system (Patel, 2009). The localist approach to food sovereignty has generated local movements striving for authority to define their own proper cultural and environmental food systems (Leventon & Laudan, 2017).

The proposed Sustainable Food Sovereignty Model (Figure 2) takes into account the political, economic, environmental, and socio-cultural ecosystems to determine systemic traits of indigenous food systems, methods of adapting solutions, and possible outcomes. It has a political dimension because it is proposed that land rights are a critical precondition for communities to select and consume their own food, as without available land it would be unfeasible for rural communities to live off the land (Patel, 2009). The developmental perspective reflects the respect that the Orang Asli have for their territory and natural resources and to prioritize their identity, territory, and economic autonomy.

### *Self-determination*

Although there has been strong advocacy to grant the Orang Asli the right to determine their way of life (Nicholas, 2000; Nordin & Wittbrodt, 2012), nothing has been done in tandem with a development model to highlight the correlation between political, economic, environmental, and socio-cultural factors and their well-being. Furthermore, the implied dimension of cultural assimilation has made many indigenous communities apprehensive over the term social inclusivity (Flahavin, 2008), making it vital to empathetically approach the challenges facing them to disambiguate social inclusion from being just another form of cultural assimilation.

Political representation of the Orang Asli is an essential initial condition for them to regain and define their autonomy, as they will then be able to map out, enforce, and manage their future. The Ministry of the Interior's Statement of Policy Regarding the Long-Term Administration of the Aborigine Peoples in the Federation of Malaya includes respecting land usage and recognizing the

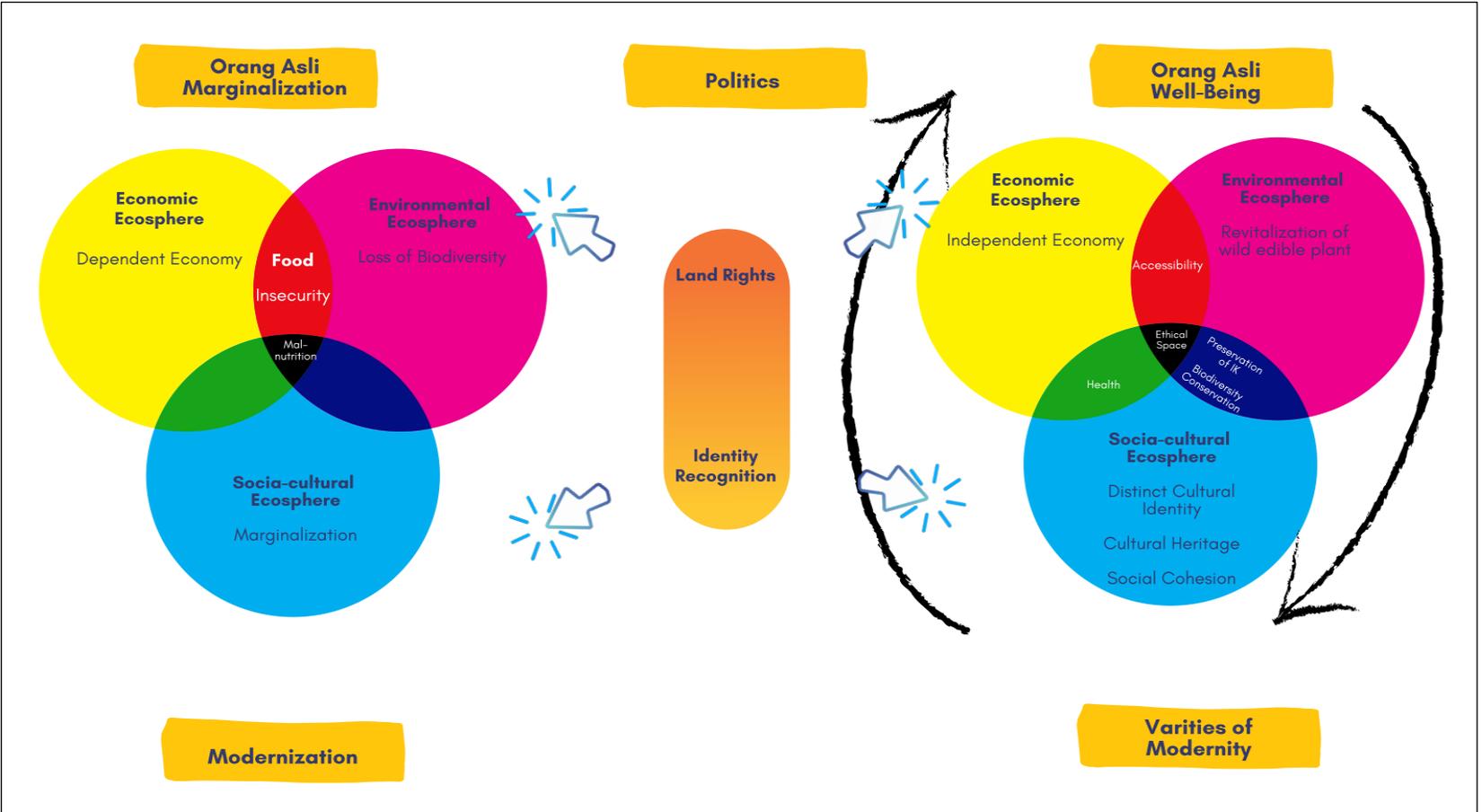
land rights that have gained the support of the Orang Asli (Jabatan Hal Ehwal Orang Asli, 1961). This policy declaration has yet to be fully implemented since allowing the Orang Asli to exercise some degree of self-determination would entail that the state recognizes their rights to sovereignty and the management of their own traditional territory, giving the Orang Asli some level of respect and support for their legitimacy. Therefore, together with reassessments of legal frameworks, it is recommended that the Orang Asli seek recognition so that their culturally distinct identities remain intact. While this could potentially also help present Malaysia as a moderate and forbearing multicultural society, rising authoritarian and religious nationalist movements are pushing the country toward a more conservative, monocultural direction. These trends exacerbate barriers for the Orang Asli, making self-determination and the preservation of traditional knowledge increasingly difficult. Promoting self-determination in their food systems allows the Orang Asli to respond more effectively to their own needs. Traditional food knowledge and cultural practices support autonomy and contribute to healthier dietary patterns (Kuhnlein & Receveur, 1996). Ecosystem protection and cultural resilience are needed to be able to preserve their food traditions, ensure a diversified diet, and sustain local food (Kuhnlein, 2014), which can be more easily facilitated and scaled up via indigenous food sovereignty systems in order to address the Orang Asli's current ecosystem and health crises.

### *Economic Factors and the Rural-Urban Divide*

Once the political situation is satisfactory, the economic ecosystem can then be addressed. The Orang Asli should determine and develop their own independent economy, whether it is based on cash-crop agriculture, subsistence-based agriculture, or a mix of both. The current economic model has led to resettling them further away from their ancestral land, and increased their impoverishment and marginalization (Toshihiro, 2009).

Availability of more land would allow them to select "socio-natural hybrids," crops designed to meet both ecological or traditional goals and the cultural, dietary, or economic needs of those who

Figure 2. Sustainable Food Sovereignty Model



consume or support them (Murdoch et al., 2000). Rather than promoting a shift to modern agrarian practices, this approach supports creating a culturally grounded, community-led food supply chain for WEPs. It aims to establish an efficient and replicable commodity WEP supply chain, defined as a structure that links marginalized communities to end-use markets while meeting health, economic, environmental, and social sustainability criteria that foreground diversity, equity, and justice for indigenous and low-income communities. The approach will be based on consultative participation with indigenous and ethnic minorities who still actively grow and consume the WEPs, to enhance cultural resilience and autonomy. They will help select, collect, and maintain the diversity of WEPs, shortening the food supply chain and meeting the community's needs.

### *Preserving Culturally Based Indigenous Food*

The Semai worldview on managing the jungle helps them maintain a coherent sense of their cultural identity and provides a sense of belonging. Many of their hunter-gathering practices are embedded in ritualistic and cultural traditions entrenched in indigenous epistemologies, which form a pillar of their culture. Engaging in traditional food practices has managed to cultivate their indigeneity, restore their history, and develop their society and nationhood as a whole (Robin, 2019).

Eating has always played a vital social function among people, as it not only helps maintain cohesion among the community and subgroups but also governs the relation of the individual to the community (Powdermaker 1932). For the Orang Asli, wild vegetables were central to the lives of older generations, allowing for another medium for the intergenerational transfer of knowledge and the revitalization of indigenous food culture, as parents and grandparents could teach their children about the traditional way of life while supporting the health and well-being of the community.

### *Health and Well-Being*

An independent economy and the ability to grow their plants would allow for diet diversification, potentially reducing the threats of NCDs and malnutrition. Diet diversification can be interpreted

through the two-social reality approach, which contrasts the “authority-defined” social reality of the powerful with the “everyday-defined” reality of ordinary people in the course of everyday life (Shamsul, 1996, p. 477). In the initial stages of the resettlement programs, the government provided food rations, representing an authority-defined social reality (Gomes, 2007). But within an everyday-defined social reality, the Orang Asli were obtaining their traditional food from hunting and gathering, with their food taboos and cultural rules still a guiding principle. However, as the socio-economic conditions of the Orang Asli improve, their diets tend to shift toward higher-calorie foods, which often include processed items. While this reflects greater access to food, it can have negative health implications, including increased risks of obesity, diabetes, and other diet-related illnesses (Zahari et al., 2014). Orang Asli who have obtained higher education have a greater chance for weight gain than those who have not, as their work is less labor intensive (Yin et al., 2019). This can be expressed by the authority-defined concept of healthy eating, as governmental resettlement plans have limited their access to the jungle. Within the everyday-defined perspective, the notion of eating well rather than healthy eating is more pertinent, as it is socio-culturally grounded in traditional food practices. The generic concept of healthy eating should be modified to meet community needs, as seen in the case of Japan's “Shokuiku” (food education), which not only promotes balanced diets and physical activity through lifelong food literacy, but has a core focus on fostering a deeper, community-rooted relationship with food (Ministry of Agriculture, Forestry and Fisheries, 2015).

### *Biodiversity Conservation*

Traditional knowledge is only beginning to be tapped, whether via crop conservation or domestication of traditional herbs and plants, in the effort to conserve the rich agrobiodiversity that is today declining. The cultural and genetic characteristics possessed by plants utilized by indigenous communities, apart from their nutritional content, have a valuable future role if their traits could be assessed for their capacity to address challenges in areas such as crop conservation, domestication of tradi-

tional herbs, and climate change. WEP adaptability and resilience makes them a promising resource for nutritional security.

Sustainability in indigenous food systems relies on the preservation of many plant species (Kuhnlein, 2014). Their cultivation can help speed up the healing process and regenerate endangered species (Chazdon, 2014). Less development in their habitats can also aid regeneration (Lowery & Gjerstad, 1991). By tapping into traditional knowledge, researchers can work with indigenous communities to better understand WEPs.

Indigenous communities have a long history of conservation awareness and action. They have developed social organizations to control hunting and gathering activities, ensuring that they only take what they need and do not overuse valuable resources (Beltrán, 2000). The Semai view themselves as the guardians and gatekeepers of the jungle and coexist with their environment. They have a deep respect for the resources necessary for subsistence, and their regrowth harvesting techniques show their dedication to preserving their ecosystems. The Orang Asli on Johor do not overuse valuable plants or other resources found in the jungle, and have found a way to coexist with the jungle (Abdul-Hamil & Gan Christopher, 2012).

### *Ethical Space*

Willie Ermine (2007) defines ethical space as a framework recognizing the differences between indigenous and Western worldviews, creating a space where neither is privileged. It facilitates the generation of divergences by allowing critical examination of assumptions and methods, leading to new insights and hybrid research approaches. Ethical space is “ethical” because it fosters respect, fairness, and transparency, enabling indigenous communities to engage freely and ensuring that research is conducted with honesty and attention to their priorities. Within an ethical space, relevant dialogues relating to different worldviews, building new research methodologies, and advancements of knowledge are facilitated, as it is a safe space for indigenous communities and researchers without the powerful external pull that places scientific knowledge on a pedestal.

In the context of the well-being of Orang Asli,

ethical space recognizes their cultural values, land-based knowledge, and lived experiences as integral to shaping research priorities and outcomes. Such inclusive spaces allow indigenous communities to take on leadership roles, contributing actively to research and development processes that affect them (Harrison, 2001). Establishing an ethical space allows indigenous communities to move from playing a passive role in an externally realized agenda to ultimately playing an active role in holding leadership positions, crucial to the development and application of research initiatives (Harrison, 2001).

To establish a more inclusive and healthy body of knowledge requires dismantling fundamental concepts and analogies:

Very often, processes of “integration” or cross-cultural hybridization are based on the combination of bits (indigenous) of knowledge or cultural items—which are extracted from the overall framework they belong to and in which they have evolved—with another knowledge system, i.e., science, taken as a whole. Rather than creating novel forms, these processes risk sterilizing diversity, as far as non-scientific knowledge like indigenous knowledge comes to be more or less “scientific.” (Mazzochi, 2018, p. 28)

Within a Orang Asli-centered ethical space, efforts to scale up WEPs can be carried out through collaborative and culturally appropriate strategies, such as the co-development of post-harvest techniques, exploring secondary uses, and identifying connections with mainstream crops. These innovations can help integrate WEPs at institutional, individual, and market levels while safeguarding the knowledge systems and values from which they originate.

### **Scalability and Transferability of the Sustainable Food Sovereignty Movement**

Broadly speaking, the process in which a Sustainable Food Sovereignty Model can be adapted to other indigenous communities must suit their political, cultural, and social systems, because food theories are entrenched in historical and geographical

factors that require different forms of activism (Morrison, 2011). This model advocates localized self-determination rather than a top-down model. To attain food sovereignty, the concept of relational scale can be used, the “spatial and temporal relationship among processes at different levels, as well as the processes connecting elements between levels” (Iles & de Wit, 2005, p. 486). With the Orang Asli from different settlements, and for indigenous peoples worldwide, multiple sovereignties can be achieved by working out and engaging in partnerships at different scales.

For the Sustainable Food Sovereignty Model to be implemented on a local scale, a polycentric approach is essential that includes partnership among the Department of Orang Asli Development (JAKOA), particularly its Director-General, district officers and community development units alongside state-level executive council members (EXCO) Rural Development, Land and Natural Resources, and Indigenous Affairs. Members of Parliament (MPs) and State Assemblypersons (ADUNs) representing constituencies with significant Orang Asli populations also play key roles, as they influence budget allocations, land-use decisions, and policy priorities.

Additionally, non-governmental organizations that have been working with the Orang Asli at grassroots matters, academicians, and Orang Asli women as well as the Orang Asli community, as partnership allows not only politicians and researchers but also the people involved in the Model to make crucial decisions in regards to complex environmental and social problems (Savacool, 2011). Political realities, including competing economic interests and fragmented authority over land, make such collaboration challenging, so incentives that align elite interests with the model’s goals, such as economic returns from sustainable land use or infrastructure projects, may be necessary to get it off the ground.

In order to ensure sustainable development, new social contracts that link democratic citizenship, civil/human rights, and economic participation have to be built and strengthened, which can be done within an ethical space. Creative collaboration between governments, private organizations, scientists, and indigenous peoples is

essential to formulate long-term, sustainable solutions.

## Conclusion

The proposed Sustainable Food Sovereignty Model could encourage the resurgence of memories, giving an opportunity for Orang Asli communities to foster interest among the younger generations, instilling traditional food values and thus leading a diverse food supply that would be the critical main driver of a sustainable food sovereignty system. The paternalistic position of government agencies such as JAKOA needs to change to encouragement of Orang Asli leadership and self-determination, particularly for land and development issues. Critics may argue that the model assumes cultural motivation alone will drive the system, highlighting the need to clarify how the food sovereignty framework is established and maintained from the outset. For ethical space to be effective, it is essential to recognize Orang Asli land, identity, and their right to autonomy, to acknowledge the Orang Asli as a distinct people with their own unique culture and governance before their colonization, applying a human rights framework, in contrast with the current Malaysian ideology. The Deramakot Forest Reserve project in Sabah highlights both the potential and the challenges of this approach. Although it successfully demonstrated that logging could be done in tandem with sustainable forest management while preserving biodiversity, it failed to bridge the gap between indigenous and scientific knowledge systems due to limited recognition of rights of the nearby indigenous communities (Tongkul et al., 2013).

Defending Orang Asli land rights would give them a platform to affirm their identity and ensure food diversity and resilience, two things necessary for communities dealing with economic and climatic stress—to build stronger communities, and acknowledge the fundamental human rights outlined by the 2007 United Nations Declaration on the Rights of Indigenous Peoples. Climate change has disrupted traditional hunting and gathering activities due to shifting weather patterns. Unpredictable seasons can damage crops, reduce fruiting, and dry up rivers and lakes, affecting both food availability and cultural traditions (Zi, 2021). Cli-

mate change has also intensified flooding, including severe events in recent years that have displaced entire villages (Ganesan, 2021). As extreme weather becomes more frequent, Orang Asli communities, are among the most at risk. Civil society groups and human rights bodies, including SUHAKAM (the Malaysian Human Rights Commission), have called for greater Orang Asli leadership in JAKOA, ensuring that they have equal access to land, permanent land titles, and consent before beginning development projects that could negatively impact their well-being. SUHAKAM has also urged amendments to Article 153 to explicitly recognize Orang Asli rights, arguing that this is essential to ensuring that their identity, rights, and entitlements are no longer subject to administrative ambiguity

or exclusion (FMT reporters, 2025). Recent activism includes the 2025 appointment of Sapiah Mohd Nor, a Semai Orang Asli woman, as JAKOA Director-General (Bernama, 2021) and proposals by politicians like Deputy Speaker Datuk Ramli Mohd Nor to amend federal and state laws to strengthen land rights (Malaysian Bar, 2024). Thus, this framework may help reinvigorate a political and cultural movement (Simpson, 2017), as well as develop innovative solutions and nurture an independent, robust, adaptable, and healthy relationship between the Orang Asli's food system and their territory, empowering them to create a community that is healthy in terms of culture, the environment, and physical well-being. 

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