

## Factors Related to Household Food Insecurity Among the Orang Kintak in Malaysia

*Faktor yang Mempengaruhi Ketidakjaminan Makanan Isi Rumah dalam Kalangan Orang Kintak di Malaysia*

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### ABSTRACT

*Malaysia, bestowed with richness in natural forest resources, is habitat to flora and fauna that are crucial in balancing the ecosystem. Forest is not only home but also a provider to indigenous people needs, such as food, materials, medicine, spirituality and recreation. Thus, sustainability and vitality of the forest are crucial to ensure food security amongst indigenous people, like Orang Kintak in Pengkalan Usu, Perak, whom are dependent upon forest resources for their well-being and survival. A total of 42 respondents, selected among the Orang Kintak from the Negrito tribe were sampled using both quantitative and qualitative approaches. Based on the vulnerability factor, main findings of study indicated economic, natural and social factors have affected the food security of Orang Kintak to the point that their livelihoods have now become increasingly threatened. The deterioration in their lives were observed not only due to the destruction of their surrounding environment but also they suffered humanitarian crisis resulting from social and economic changes. Orang Kintak communities go through very difficult times when natural resources continue to decrease and difficult to obtain. Forest encroachment activities have caused indigenous foraging area to shrink, whilst economic and social factors have affected availability and stability of food supply resulting in the threat of poverty, malnutrition, psychological stress and deterioration of the Orang Kintak health in general.*

*Keywords: Forest; natural resources; Orang Asli; environmental change; food insecurity*

### ABSTRAK

*Malaysia, dikurniakan dengan kekayaan sumber hutan semula jadi yang merupakan habitat pelbagai flora dan fauna yang penting dalam mengimbangi ekosistem. Hutan bukan sahaja menjadi tempat tinggal tetapi turut membekalkan pelbagai sumber keperluan kepada Orang Asli, seperti makanan, bahan binaan, ubat-ubatan, aktiviti kerohanian dan rekreasi. Oleh itu, pentingnya mengekalkan kelestarian hutan untuk memastikan jaminan bekalan makanan di kalangan Orang Asli, seperti Orang Kintak di Pengkalan Hulu, Perak, yang bergantung kepada sumber hutan untuk kesejahteraan dan kelangsungan hidup mereka. Seramai 42 responden, dipilih dalam kalangan Orang Kintak daripada suku kaum Negrito. Kajian dilakukan dengan menggunakan kaedah pendekatan kuantitatif dan kualitatif. Berdasarkan faktor kemudahterancaman, penemuan utama kajian menunjukkan faktor ekonomi, semula jadi dan sosial telah menjejaskan jaminan bekalan makanan Orang Kintak sehinggakan sumber pencarian mereka kini semakin terancam. Kemerosotan hidup bukan sahaja disebabkan oleh kemusnahan alam sekitar, tetapi juga disebabkan oleh krisis kemanusiaan yang wujud akibat daripada perubahan yang berlaku terhadap aspek sosial dan ekonomi. Orang Kintak melalui kehidupan yang sangat sukar apabila sumber semula jadi semakin berkurangan dan sukar diperolehi. Aktiviti penerokaan hutan telah menyebabkan perubahan persekitaran hutan dan kawasan rayau yang semakin mengecil serta faktor ekonomi dan sosial telah mejejaskan ketersediaan dan kestabilan bekalan makanan yang membawa kepada ancaman kemiskinan, kekurangan zat makanan, tekanan psikologi dan kemerosotan kesihatan kepada Orang Kintak secara amnya.*

*Kata Kunci: Hutan; sumber semula jadi; Orang Asli; perubahan persekitaran; ketidakjaminan makanan*

## INTRODUCTION

Forests and natural environment are unique features in the lives of the Orang Asli (Hood Salleh 2004). Orang Asli still practise various types of cultural customs, taboos, beliefs, health practices and distinctive life values. They value a harmonious life between people and natural environment, this respect towards nature greatly affects their way of life and economic resources. Their interaction with the environment clearly conveys how they value a harmonious relationship with the land - not only does it ensure continuity of life, but also allow for practices of beliefs and customs that reflect on community identity itself.

From the socio-economic aspect, the way of life of Orang Asli is very much dependent upon the environmental resources around them, especially natural resources of the forest. Among the economic activities carried out are collecting forest products, hunting wildlife and practising shifting cultivation. As for Orang Asli women, they would usually go to the nearby river to catch fish as a source of daily food, in addition to doing house chores and craft making, such as weaving baskets and mats. Generally, the men would go into the forest to get food and generate income. They usually enter the forest early in the morning and return in the late afternoon but sometimes they would stay away in the forest for a week or more to collect forest produce (Mohd Tajuddin et al., 2016). However, current of modernization, along with environmental changes, have brought in various external elements that have changed the lives of Orang Asli. These changes contributed to various new era of health problems, such as diabetes, high blood pressure, heart problems and obesity, as well as threatened the availability of sufficient natural food resources (Nor Haidanadia et al., 2016).

Changes in the biophysical and social environment due to rapid development have caused significant pressure in the lives of indigenous people to become increasingly threatened and more vulnerable. The loss of land and destruction of natural resources often result in Orang Asli to becoming increasingly marginalized, making them less able to face challenges that arise as a result of environmental and socio-economic changes occurring around them (Aiken & Leigh 2015). The lack of economic resources further limit ability of households to prevent, avoid and even recover from the impact of environmental change, which indirectly causes them to fall into poverty (Ford et al., 2010). Therefore, this study aims to examine vulnerability factors due to environmental destruction in the surrounding areas of Orang Kintak communities.

## LITERATURE REVIEW

Food security is defined as a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The four pillars of food security are availability, access, utilization and stability. The nutritional dimension is integral to the concept of food security (FAO 2009).

The World Health Organization states that there are approximately 2.4 billion people who do not have constant access to food, that is 29.6 percent of the global population. Within this group, there are 900 million people who are facing severe food insecurity (World Health Organization, 2023). According to Our World in Data (Ritchie, Rosado & Roser, 2023), one in ten people do not have enough food to eat.

Food insecurity is simply based on not having enough food. This can involve the quantity of food or having inadequate quality and diversity of food (Ritchie, Rosado & Roser, 2023). There are several factors causing food insecurity, which can range from food not being available in the community to someone not being able to afford buying the food that is available. Norhasmah et al., (2021) food insecurity occurs when a person does not get enough nutrients, resorts to foods that are not safe to eat, or is unable to obtain a balanced diet. Food insecurity also has had many negative effects such as increasing the number of patients and mortality rates, limited neurological development and low productivity development.

Studies conducted in developed and developing countries show low income increases risk of food insecurity (Norhasmah et al., (2021); Dharod et al., (2013). Wood (2001), states that one of the most important ways to increase food security is to increase food access in society. Food access is defined as access to quality, safe, affordable, nutritious and acceptable foods and availability of healthy food options. Food should be easy to find and affordable. People are considered to be at risk of food insecurity when they have limited access to economic, physical and social factors. In addition to poverty, contributing Factors to Food Scarcity Food insecurity arises from a multitude of factors such as economic instability, conflict, climate change, extreme weather events, and population displacement (FSIN and Global Network Against Food Crises [GRFC], 2023).

#### ORANG KINTAK

Orang Kintak, also known as Tak, Kentok and Kintok, are grouped in the Negrito tribe. The other tribes are namely Jahai, Kensiu, Lanoh, Mendriq and Bateq. The earliest records related to the Negritos were compiled by John Smith who was an advisor to the King of Patani in 1600 (Carey 1976). Like other Negrito tribes, Orang Kintak also practise a nomadic way of life and their main economic activities are hunting, fishing and gathering forest products (Carey 1976). The interaction between the people and the environment clearly gives an impression of the extent to which they emphasize a harmonious relationship with the environment to ensure the continuity of life, which is driven by the beliefs of the community itself. Their lives depend on forest products such as fruits, wild yams, plants, wildlife and fish as sources of food. They also collect forest products such as rattan, gaharu, herbal medicine, some of which are for sale. Only a small number of them cultivate the land for agricultural activities.

Orang Kintak have long lived on the edge of the forest near the Malay and Siamese settlements. They usually choose lowland areas close to rivers that are still rich in food, plant, game and economic resources. But now, as a result of the development activities happening around them, significant changes are observed in the lifestyle and economic activities of the Orang Kintak. They began to be exposed to the mainstream economic system, which changed their former economic pattern from one that were previously self-sustaining to a commercial-based economic system. Therefore, Orang Kintak being highly dependent on natural resources in generating income and obtaining food are likely to be more easily threatened when faced with shocks resulting from changes that occur in their environment leading to food insecurity. Weakness in the aspect of adaptive capacity causes their community to fall into various social disadvantages such as poverty, poor health, alcohol addiction and division in the community, which ultimately weakens the community itself.

Therefore, the main problem identified is related to vulnerability that has resulted from the destruction of the environment, making the lives of the Orang Kintak even more difficult,

particularly when they have to deal with changes in the environment and socio-economic aspects that affect availability of food sources and ultimately affect health. In line with that, this study hopes to contribute towards building knowledge amongst the Department for Orang Asli Development (JAKOA), the Ministry of Health (KKM), and other relevant agencies on the process of community formation towards improving quality of life of Orang Asli in a holistic manner.

## METHODOLOGY

The village of Bukit Asu is the only Orang Kintak settlement in Malaysia, and it has a small population. In addition to the increasing threats to the population such as low income rates and many environmental changes due to development activities such as forest exploration and mining (Figure 1), the Orang Kintak have been finding it increasingly difficult to access forest food resources around their settlement. A recent study conducted by Nur Faaizah and Noor Saadah (2021) counted approximately 50 Orang Kintak families, and the latest total number of residents was 212 (JAKOA, 2015). This shows that over five years, the population of Orang Kintak only increased by four. The reality shows the alarmingly slow growth of community members, which is why this community was selected as a study sample.



FIGURE 1. Location of the Study Area (Forest Exploration Occurrence)  
*Source.* Google Map 2020



The respondents in this study comprised the head of each household or his partner. All the families were selected as study respondents, but if more than one family lived in one house and had separate expenditure, both families were selected as separate respondents. A total of 42 people were involved in answering the questionnaire, namely 25 men and 17 women. The interview session involved a total of 15 respondents.

The results of this study were obtained through a few instruments, namely the questionnaire, interview and direct observations in the field. Therefore, one of the methods for identifying food insecurity is to study vulnerability factors - whether economic, natural or social. Vulnerability factors are determined based on three constructs, namely economic factors, natural factors (climate change), and social factors (Muhammad Yassar et al., 2016). The interview involved several Orang Kintak and interested parties such as representatives from JAKOA Perak officials and Orang Kintak mobilization officers. Since this study concerns problems that are best understood from the context of the community itself, the researcher made it a point to reside in the village on each visit. After all the questionnaire responses and other information had been recorded in detail, the complete data was analysed using the Statistical Package for Social Sciences (SPSS) Version 20 computer software programme.

### LIMITATIONS OF THE STUDY

There are some limitations that cannot be avoided especially when conducting field work. Among them is the difficulty of getting in and out of Kg. Bukit Asu, due to the condition of the damaged and narrow road on a steep slope. It was initially difficult to approach and interview respondents, but the situation improved when the researcher come more often and spent time together doing various activities and when the researcher started residing in Orang Kintak village. Next, the problem of communication difficulties with some respondents was overcome by selecting a few 'key information' people and translators among the Orang Kintak people who accompanied the researcher throughout the process of gathering information in the field.

### RESULTS AND DISCUSSION

Vulnerability is a difficult situation or feeling of fear that individuals face every time they encounter threats or uncertain factors (Prowse 2003). Every society has different forms and tendencies towards vulnerability according to environmental conditions and changes in the society itself. Vulnerability is an important aspect to be considered, particularly in the drafting of a policy plan or development programme towards ensuring a sustainable livelihood. Many plans, policies and development programmes that are implemented do not achieve optimal results and at times even fail because they do not take into account the existing context of vulnerability (Muhammad Yassar et al., 2016). The following section describes how one type of vulnerability factor can easily threaten the food supply guarantee for the Orang Kintak in general.

## ECONOMIC FACTORS

### DEVELOPMENT ACTIVITIES THAT THREATEN FOOD SECURITY

Development activities that were carried out without taking into account their impact on nature would cause deterioration in the quality of the environment as well as affect the quality of life and well-being of local residents. The results of this study found that two main activities threaten security of food supply based on the perception of Orang Kintak, namely forest exploration and mining. All of respondents stated that forest exploration activities took place around their settlement area, which is in the Orang Kintak reserve land area, for the purpose of Commercial Replanting Project (TSK) with an area of 130 hectares. A study by (Razha Rashid, 1995) on the Kintak people also found that environmental changes due to commercial agricultural activities, construction of economic development infrastructure, logging and tin mining activities have threatened the lives of the Kintak people by reducing food supplies and opportunities to trade in forest products. This situation illustrates that the settlement of Orang Kintak is increasingly threatened because many of their foraging areas (*kawasan rayau*) have been explored by others. According to (Apa et al., 2012) vulnerability is defined as community's weakness in dealing with aggressive events that are difficult to manage. Amir Zal (2013), explained that threats in the context of natural capital are in the form of threats that prevent communities from accessing these resources, including development activities resulting in forest destruction.

TABLE 1. Impact of Development Activities on the Food Resources of the Orang Kintak

Impact of development activities on food resources	Yes	(%)
Are there local pollution?	33	78.6
Are food sources decreasing and difficult to obtain?	41	97.6
Are the sources of herbal medicines decreasing and difficult to obtain?	40	95.2
Has the land become infertile for agriculture?	17	40.5
Is Orang Asli foraging area getting increasingly limited?	36	85.7

The issue of forest encroachment that happened in Bukit Asu, especially involving the Orang Kintak area, has had an impact on their lives. Forest development for the rubber tree plantation project by (RISDA) had caused massive logging and environmental destruction to the point of loss of flora and fauna habitats that used to provide economic resources, food and natural medicines for the Orang Kintak. The effect of these activities is that food sources decreased and were difficult to access (97.6%) and the availability of medicines for Orang Kintak was also affected (95.2%). In addition, 85.7% stated that this activity caused the foraging area to become smaller and more limited. They had to go further into the forest to obtain forest resources that were increasingly difficult to obtain, and were increasingly becoming extinct such as gaharu, rattan, honey, Tongkat Ali, Kacip Fatimah and many more. In fact, previously Orang Kintak could build their own houses using forest products such as nipah, reeds and rattan, but now these materials were increasingly difficult to find.

The results of this study are similar to those of the study by Mustaffa Omar et al., (2011) study on the Jakun Tasik Chini community in finding that environmental and socio-economic changes have caused great pressure on the community. Areas that were once forests are being explored for socio-economic development purposes by turning them into oil palm plantations. As a result, forest areas have become increasingly limited and isolated, and have caused traditional community activities such as hunting or trapping animals to become endangered. This situation

has forced residents to look for new alternatives to support their daily lives. Most recently, a study conducted by Mahat a/l Mat Dong et al., (2024) on the Sungai Tekai Orang Asli community also found that development activities, namely the construction of hydroelectric dams, have also had an impact on this community. The Sungai Tekai Orang Asli accept the fact that natural forests and rivers have been exploited as sources of food and income. The Orang Asli believe that the construction of hydroelectric dams will not fully benefit them in the future, and will even make it difficult because they cannot arbitrarily enter the dam area. They are also unable to adapt to survival due to the lack of forest areas to obtain various resources. In fact, they are also worried about the future of the younger generation to continue their lives collecting from natural resources because parts of the forest have been submerged and become a restricted area. In addition to that, many studies from other researchers (Endicott and Dentan 2008; Nor Haidanadia et al., 2016; Hasan Mat Nor, 2020; Zaimah, 2020) show that Orang Asli land that is converted for palm oil and rubber plantation projects is touted as "bringing greater good" but the fact is more detrimental to the Orang Asli community because their lives are increasingly threatened when environmental and socio-economic changes put great pressure on them. Shaharudin et al., (2004) reported that land use changes that occur mainly from forest to non-forest have caused environmental degradation problems that ultimately threaten the lives of people living in the surrounding areas.

Next, as many as 78.6% of the respondents agreed that there had been local pollution such as river pollution especially after rain, and the air would become dirty and dusty when the weather gets hotter. The pollution of the river has also threatened food security, causing a negative impact on health because the people have to drink and bathe from silty and less clean water sources. Although the Orang Kintak had received help with the supply of treated water, a few residents would still use river water for the purpose of washing clothes, bathing and sanitation, especially when the pump was damaged. The water that was always polluted and dirty caused the treated water pumps and filters to always get clogged and damaged so they lost a source of clean treated water for daily use. Polluted rivers also cause many fish, snails and shrimp to die and the source of protein from river food decreased and became difficult to obtain. A study by Mahat a/l Mat Dong et al., (2024) found that the Sungai Tekai Orang Asli community also experienced the same effects through the construction of dams in the early stages, namely logging activities causing the river to become increasingly polluted and forests to diminish. This situation resulted in a reduction in food sources and income.

Therefore, forests that used to provide many natural food sources, but are now increasingly experiencing destruction and loss of food sources due to macro land use changes have caused a deterioration in the quality of the physical environment, disrupting the flow of the food web and threatening the lives of the Kintak people. The reality is that the Orang Asli is a community that is easily threatened, especially if it involves forest areas where their dependence has reduced as a result of land clearing activities for various purposes (Zaimah Zalam, 2020). Research by Yew Wong Chin et al., (2023) emphasized the need to implement a plan development and managing natural resources again so with methods that guarantee ecological integrity and the environment in order to preserve and maintain ecosystem from being threatened. Shaharudin et al., (2004), predict that rapid changes in land use that change the physical and cultural landscape will bring strong pressure on the surrounding population. This means the development carried out around the settlement of Kg. Bukit Asu will affect Orang Kintak. Although various provisions in the Federal Constitution such as the Orang Asli Act 1954 provide for good protection for the Orang Asal community, the encroachment into customary land rights is still widespread in Peninsular Malaysia, Sabah and Sarawak; logging, plantation, mining and other activities continue to take

various natural resources from their land because there is no provision in the Constitution that protects the customary land of the Orang Asli.

#### THE INPUT PROBLEMS (EQUIPMENT) OF FOOD SOURCES

The results show that 100% of households have machetes and knives at home and 31% have axes (Figure 2). Machetes and axes are needed for personal safety in the forest as well as for cutting down bushes and felling trees. A total of 81% of households own fishing rods and 4.8% own fishing nets. Fishing rods are made from bamboo and nets are bought because of the capacity for bigger catches. The Orang Kintak collect money to buy nets and the catch is shared. A total of 26.20% have sickles and 7.10% have palm fruit poles. Sickles are used to earn wages by cutting grass for the Siamese, Malays and Chinese while the palm fruit poles enable them to earn wages from the Malays who live nearby.

Like other Orang Asli tribes in this country, the Orang Kintak also hunt using the traditional tools of blowpipe and poison darts. These skills are important for survival in the forest. However, now only 23.8% of households still have a blowpipe at home. In fact, some have a blowpipe but do not have the desire to use it. The trend of modernity that is increasingly affecting the Orang Kintak has caused this weapon to be forgotten, especially among the younger generation. In addition, they also expressed their fear of keeping the weapon at home because it is dangerous and they are worried that young children will play with it. The difficulty of getting poison ivy from Ipoh trees also causes this equipment to be used even less often.

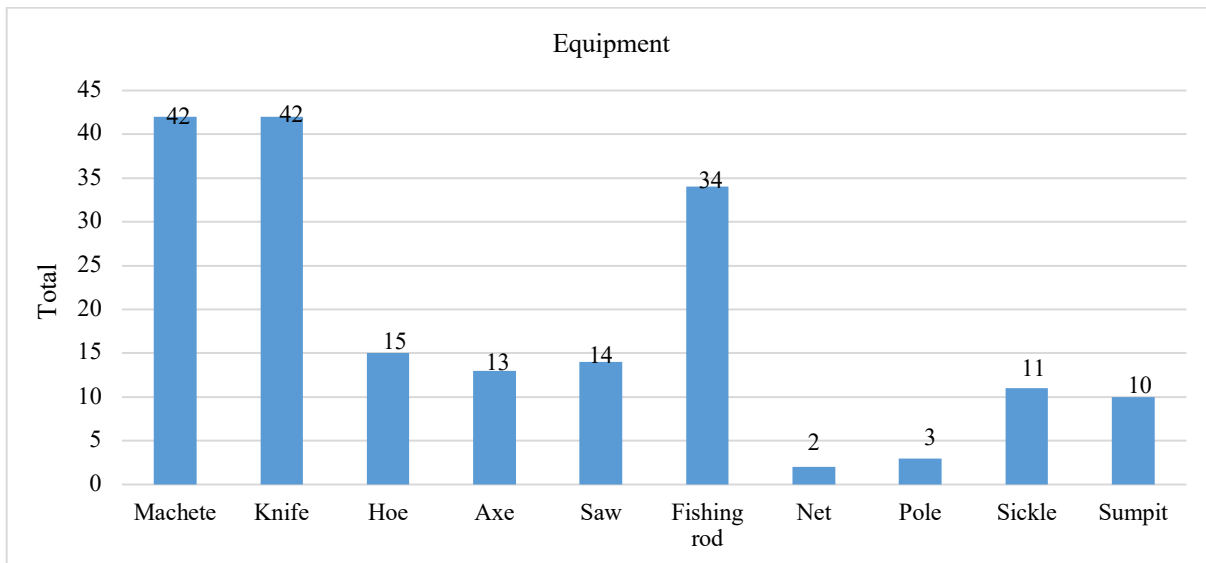


FIGURE 2. Equipment Owned by Orang Kintak

Orang Asli are well known for their ability to find their own food from their environment, be it from forests, rivers or lakes. One of the factors faced by the Orang Asli in finding enough food is the depletion of food sources caused by logging. Another is that not having sufficient equipment prevents the Orang Asli from carrying out food hunting activities. A study by Leh Shii Law et al., (2018) found that the limited availability of traditional food is a factor that has interfered with the continuation of hunting activities to obtain food.



## ECONOMIC FACTORS AND THE INCREASE IN THE PRICE OF GOODS AND FOOD

Among other factors that threaten the security of food supply for the Orang Kintak is their low income and the increase in the prices of goods and food. Apart from poverty, a common assumption about the Orang Asli is their low quality of life. The Orang Asli in Peninsular Malaysia is generally more marginalized compared to the Malaysian population as a whole (Vivien et al., 2019). Poverty is an important aspect that invites vulnerability because it is directly related to access to resources (Esperon-Rodriguez et al., 2016).

TABLE 2. Economic Factors and Increase in the Price of Goods and Food

<b>The effect of economic factors and the increase in the price of goods and food</b>	<b>Yes</b>	<b>(%)</b>
Burdening you and family	42	100
Causing your purchasing power to decrease	42	100
Causing you to choose poor quality goods/food	42	100
Causing you to buy in small quantities	41	97.6
Households eat more food from forest sources than food bought from stores	36	85.7

The results show that 100% of Orang Kintak agree that economic factors and the increase in the price of goods and food have burdened their families, causing their purchasing power to decrease and leaving them no choice but to buy goods and food of poor quality (Table 2). 97.6% of the respondents agree that it causes them to buy food in small quantities. Meanwhile, as many as 85.7% of households eat more food from forest sources than from what is bought from stores. For Orang Kintak, the location of their village in the forest enables them to access natural food sources even while the forest is increasingly being destroyed compared to buying food in the store. This is supported by a study (Suzana Shahar et al., 2018), which shows that the increase in the prices of goods in Malaysia and globally now, especially the prices of food items, has increased the risk of food insecurity and malnutrition. In order to prevent daily expenses from exceeding their total income, households are forced to reduce their expenses by using goods and services of lower quality (Zulkipli Omar 2015). The increase in food prices also affects the type of purchase options, especially for the purchase of healthy food (Lo et al., 2009). In fact, the skyrocketing food prices around the world have caused those living in poverty and low incomes to be the worst affected group. Low-income households are at risk of food insecurity and the inability to purchase or produce enough food to meet the household's calories or needs (Khor 2008). In conclusion, the increase in the price of goods and food indirectly places greater burden on those with low-incomes and those who are less able-bodied. Therefore, the increase in the cost of living will be felt by each individual and household if the increase in prices exceeds income, which will eventually affect the occurrence of food insecurity as well as health.

## NATURAL FACTORS

### EFFECT OF WEATHER PATTERNS ON FOOD SOURCES

Climate affects food production through geographic changes, reduction in the amount of water needed for irrigation purposes and land loss due to rise in sea level. Chamhuri et al., (2009) found that among the main factors related to global climate change which have an impact on the agricultural sector are such factors as an increase in air temperature and changes in rainfall patterns or extreme climates such as floods and droughts. According to the Environmental Protection

Agency (EPA) (2023), numerous observed climate changes can be attributed to elevated levels of greenhouse gases (GHG) in our atmosphere, a consequence of human activities. As these GHGs accumulate, they contribute to a warming of the climate, resulting in increased evaporation. This process can lead to drought in certain regions, erratic rainfall patterns, and, subsequently, floods during intense storms.

TABLE 3. Impact of Weather on Food Sources

<b>Impact of climate/ weather</b>	<b>Yes</b>	<b>(%)</b>
There has been damage to agricultural crops due to disease and insect attacks	21	50.0
There has been a change in certain seasons	30	71.4
There has been an increase in the environmental temperature	40	95.2
There has been a greater increase in the amount of rain than usual	4	9.5
There have been landslides that have damaged agriculture	5	0.12
There has been damage to agricultural crops due to the threat of wild animals	41	97.6

The Orang Kintak depend a lot on forest products and carry out village work as a source of income. From an early age, children are taught to walk into the forest to get familiarised with the environment and the ins and outs of the pathways in the forest, to learn about tree roots and their nutrients, to learn about the different types of forest food that can be eaten and those that cannot be eaten, and are taught how to catch fish and hunt animals, using the forest as a source of food for survival. The impact of weather changes on their food sources, according to 71.4% of the Orang Kintak, is that certain seasonal changes have occurred, for example the seasonal changes of fruits such as durian, langsat, jering and petai. A total of 95.2% stated that the environmental temperature had increased and that it had not rained for a long time, while 9.5% stated that there had been a greater increase in the amount of rain than usual but not great enough to cause flooding (Table 3).

In the interviews, the Orang Kintak stated that seasonal fruits would usually be available once or twice a year, with the main fruit season running from mid-June to mid-August. The second fruit season is usually less clear because the fruit production is reduced and usually occurs in December to February. These seasons may also happen between one to two months earlier or later depending on the place or location. Among the seasonal fruits that the Orang Kintak can get are durian, rambutan, duku, langsat and mangosteen, while the bamboo shoot season is from February to April. The netting season is in late September to December and the petai season is in March to April or August to September.

However, according to the Orang Kintak, in recent years there has been a change in seasons, especially for the season of fruits such as durian and mangosteen as well as the season of petai and jering. In fact, the forest durian and mangosteen trees also have not been bearing fruit. Also, the petai season has moved to July and the fishing season has moved a few months later. The results obtained are also decreasing compared to before. This change in season has increasingly burdened the lives of the Orang Kintak due to their high dependence on forest food resources, especially seasonal forest resources such as petai and jering which can increase income. This situation also makes it difficult for them to predict the next season.

The long absence of rain causes an increase in the temperature of the environment from July to September. The temperature and the hot weather cause most Orang Kintak to not sit at home but to go into the forest instead and have a picnic by the river together. They leave around eight in the morning and return at five in the afternoon, taking two hours more on foot. Along the way to the river they collect edible forest products such as water spinach, tapioca yams, cassava

leaves and forest fruits. When they arrive at the river they build huts for shelter as some families would stay there temporarily (a few days) by the river (Picture 1). While picnicking and bathing, Kintak adult men would catch fish by fishing or shooting fish with homemade wooden guns. Meanwhile, the women and their children search for fish by stirring up fish in the parts of the river that have dried up. Among the results obtained are various types of fish such as white fish, catfish, snakehead and even gondang snails. The catch is then sold to the Siamese and Malays or kept for their own consumption.



A bed made using bamboo with kantan flower trees for the roof



Spending the night in the forest. The place chosen is close to the river to make it easier to find food sources



Fishing activities for women and children



Celebrating catch of the day in the river

PICTURE 1. Orang Kintak Activities in Summer

A study by Chong Su Pei et al., (2018) claimed that the cause of high food insecurity among the Mah Meri people is weather. Bad weather affects the availability of food sources from the aspect of fishing and agricultural crops. Steven and Tempo (2011) state that food insecurity often occurs when the rainy season is compared to the summer due to the reduced supply of food produced. This corresponds to the situation faced by the Orang Kintak: in the summer they get more food than in the rainy season. The rainy season also causes the Orang Kintak to be neither able to tap rubber nor enter the forest. Next, as many as 50% agree that changing weather patterns also cause disease and pest attacks. This is proven by the results of a study by Leh Shii Law et al., (2018) showing that extreme droughts reduce the harvest of the Orang Asli because the plants or vegetables may die before the plants mature. Similar findings by Seydou et al., (2014) show disease incidence and insect presence in crop fields were found to be associated with household food insecurity among farmers in Kollo district, Southern Niger.

In addition, the main reason why the Orang Kintak are less involved in food-based agricultural activities is due to disturbance from wild animals. A total of 97.6% agree that there has been damage to agricultural crops due to the threat of wild animals. The following are some excerpts from the interviews:

“...there used to be hill paddy cultivation, but it was all destroyed by pigs and birds. Pigs are the worst, all crops are damaged. Too many pigs - we made traps and there are still many others. Other vegetable crops are also eaten by pigs, squirrels, monkeys and birds. Now I don't have many plants. Plant a little by the side of the house only...”

(Informant 2)

“...plant chillies, yams and bananas near the forest. Now live near there. You have to take care of the plants otherwise pigs, birds and monkeys will come and eat and destroy the plants. Protect the dog and always have to burn firewood to scare the animals. Take turns with the husband and children to take care of the plants to avoid their being eaten by animals and stolen, especially bananas..”

(Informant 7)

For the Orang Kintak, the crops obtained are few and it is difficult to live in peace because of the disturbance from wild animals such as wild boars, birds, squirrels and monkeys. Thus, they have to stay in the garden and defend the dogs for security and to reduce the risk of crops being destroyed and stolen. Therefore, the threat factor of wild animals that damage agricultural crops has also reduced food sources and the availability of food for the Orang Kintak.

## SOCIAL FACTORS

### RELIGIOUS AND CULTURAL CHANGES TO FOOD SOURCES

Each race has its own culture and special food, which is the main driver in determining the types of food eaten. In fact, it is influenced by various factors such as geographical, social, psychological, religious and economic situations. This is supported by the results of the study where 52.4% of respondents agreed that the culture and lifestyle changes of the Orang Kintak have an impact on food intake, as more food is purchased from stores compared to natural food due to the forest's diminishing food resources. According to the Orang Kintak, most protein food sources such as fish, eggs, chicken and anchovies as well as other food sources such as rice, flour, oil and sugar are bought in stores. Food sources of vitamins, minerals and fibre from vegetables are still obtained from forest resources and the surrounding area.

Although many Orang Kintak have embraced Islam, they still practise dietary restrictions based on the Kintak culture. This is shown in the results of the study, in which 76.2% of the respondents agree that every household still practises dietary taboos. Among the taboos that are still held in this village are:

1. Abstinence for women during their monthly menstruation periods: forest food is not allowed. Seafood and river food such as fish and vegetables can be eaten. If you break the taboo, your body will feel the effects of poison - pain, fever and lethargy.
2. Abstinence during pregnancy: The prohibition imposed on the wife during pregnancy is not to eat caught fish is believed to cause the baby to develop cleft lips. While eating thorny fish and horned animals is believed to make birthing difficult because the baby will get stuck. Therefore men are not allowed to fish and hunt while their wives are pregnant. Eating yams before the pregnancy is past three months is believed to cause the baby's feet and hands to resemble yams. Eating meat before a child is one year old is believed to cause worm infection and raise its body temperature.
3. Observing abstinence during maternity: When walking outside, a new mother must wear slippers, and must not be exposed to rain. She must observe an abstinence period of 44 days, taking care of nutrition during abstinence, for example not eating food such as catfish that would be “poisonous” to her at this time.

For Orang Kintak, these taboos aim to take care of the health aspects of the body because they believe that certain foods can affect the body. But these beliefs and prohibitions are seen to have more of a negative effect on women, especially pregnant women, because they have limited variety in the nutritional diet that is important for the health of pregnant women and the growth of babies in the womb. Hanina et al., (2008) also state that taboo practices in nutrition also cause health problems. Therefore, the belief in taboo practices indirectly limits the diet of the Orang Kintak, and maintaining good health is compounded by their difficulty in preparing healthy and sufficient food for household meals.

Various threat factors have affected the food insecurity of the Orang Kintak, namely economic threats, natural threats, and social threats. For the Orang Kintak, the forest is like a supermarket because it provides various sources of food and medicine. Therefore, forest exploration activities make it difficult for them to be self-sufficient due to the lack of skills and knowledge in other areas besides skills and knowledge regarding forest life. Forests that are increasingly explored cause less dependence on and access to forest food sources and medicines. The condition of the forest which is running out of its natural resources causes the lives of the Orang Kintak to become increasingly threatened due to a lack of food supply.

## CONCLUSION AND SUGGESTION

The experience of the Orang Kintak in Bukit Asu is one of the cases of the deterioration of the life of the Orang Asli community caused by the destruction of the environment in the area where they have lived for so long. Environmental destruction and change not only threaten economic resources but also threaten almost all aspects of the Orang Asli community's life such as culture, customs, identity, traditional practices, and even their survival. Thus, in an effort to bring development to the Orang Asli, the environmental element needs to be maintained because it is their identity that is difficult to separate as well as their very high dependence on forest resources.

The greed of some irresponsible parties who pursue development without taking into account the rights of the Orang Asli and its impact on the environment further exacerbates this issue and cause more worries about the future living conditions of the next Orang Kintak generation. Therefore, economic factors and effect of increase in the price of goods and food strongly influence to what extent could Orang Kintak obtain nutritious and sufficient food for their household well being. Prevention and control measures should be implemented to improve the ability of the Orang Kintak to secure their food supply. All forms of vulnerability, if not overcome through careful planning, could cause more pressure over time for Orang Kintak.

Planned development policy needs to take into account the needs of Orang Asli community and should not solely be determined by policymakers. This is because the Orang Asli community lives in a diversity of tribes and there are differences among them in terms of lifestyle, skills, economic status, education and so on. Therefore, a program or initiative to be implemented must be in accordance with the norms of the community. Achievements will also differ due to differences in exposure, access and different mindsets that will affect their capabilities. The problems experienced by Orang Kintak are one of the effects of development programmes that do not give due consideration to aspects of the background, needs and living conditions of the local community. The planning of plantation activities has led to large-scale logging and forest destruction, leading to the loss of flora and fauna habitats that have provided food and natural medicine to the Orang Kintak. They are also integrated into the stream of mainstream development



in a drastic manner without proper preparation. As a result, their lives today are increasingly threatened. Their vulnerability is different from the Orang Asli who live in the city. To ensure that the development programme that is to be implemented takes into account all the above aspects, the studies carried out by researchers need to be given due consideration in forming development policies in each area inhabited by the Orang Asli community.

The Orang Kintak tend to respond to every change that occurs around them, whether it is a biophysical environmental change or a socio-economic change. This change in environment really makes it difficult for them to adapt and equip themselves for the new environment which is 'non-forest environment'. Based on the responses shown, they are not a passive community that lives by simply expecting help from the government alone. However, limited abilities and capabilities in various aspects have become a constraint for the Orang Kintak to respond in line with the changes happening around them. Therefore, Orang Asli need to be given space and opportunities that are appropriate to their ability to improve in their socio-economics in order to achieve a better life guarantee. The development economy is an important aspect of business to increase well-being and socio-economics for the Orang Asli. The programme for land development, tourism, livestock and fisheries, entrepreneur guidance and equipment assistance need to be channelled effectively to the community. So JAKOA needs to continue implementing the transformation of the Orang Asli mind including the construction of human capital, formation of identity, paradigm shift, in addition to opportunities for participating in the Skills and Career Training Programme. Efforts to improve the level of education need to be implemented more aggressively and continuously to increase awareness among the Orang Asli. This transformation aims to improve social capital, human capital, and physical capital infrastructure so that the Orang Asli can adapt to any changes that occur in the future.

In the context of environmental changes and lifestyle changes today, economic capacity is one of the important factors in efforts to reduce food insecurity. Therefore, it is important that further research be conducted on the condition of the Orang Kintak after the Commercial Rubber Replanting Project (TSK) involving 45 heads of households released the results. Has this project been able to improve the socio-economic status of Orang Kintak? In addition, what has been the impact of Covid-19 on the guarantee of food supply and the health of the Orang Kintak. Still many things are not known and understood regarding environmental changes and their effects on humans. Continuous research is crucial to ensure efforts at improving quality of life for the Orang Kintak to be planned and implemented effectively for the sake of present and future generations.

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## REFERENCES

- Aiken S. Robert and Leigh, Colin H. (2015). Dams and Indigenous Peoples in Malaysia: Development, Displacement and Resettlement. *Geografiska Annaler. Series B, Human Geography*. 97(1): 69-93.
- Amir Zal, W. A. (2013). Pembentukan modal insan Orang Asli Darat dan Laut di Malaysia. *GEOGRAFIA Online TM Malaysian Journal of Society and Space*. 9(4):1-14.
- Apa, M.I.P., Kouokam, E., Akoko, R.B., Nana, C. & Buongiorno, M. F. (2012). An Ethical Approach to Socio-economic information Sources in Ongoing Vulnerability and Resilience Studies: The Mount Cameroon Case. *Annals of Geophysics*, 55(3), 393-399.
- Carey, I. (1976). *Orang Asli: The aboriginal tribes of Peninsular Malaysia*. Kuala Lumpur: Oxford University Press.
- Chamhuri Siwar, Md Mahmudul Alam, Md Wahid Murad & Abul Quasem Al Amin. (2009). A Review of the linkages between climate change, agricultural sustainability and poverty, *International Review of Business Research Paper*. 5 (6): 309-321.
- Chong Su Pei, Geeta Appannah, and Norhasmah Sulaiman. (2018). Household food insecurity, diet quality, and weight status among indigenous women (Mah Meri) in Peninsular Malaysia. *Nutr. Res. Pract.* 12: 135–142.
- Dharod, J. M., Croom, J. E. & Sady, C. G. (2013). Food insecurity: its relationship to dietary intake and body weight among Somali refugee women in the United States. *Journal of Nutrition Education and Behavior*, 45(1), 47-53.
- Endicott, K. and R. Dentan. 2008 [2004]. Into the mainstream or into the backwater? Malaysian assimilation of Orang Asli. In *Civilizing the margins: Southeast Asian government policies for the development of minorities*, ed. C. Duncan, 24–55. Ithaca, USA: Cornell University Press.
- Environmental Protection Agency. (2023). Climate Change Indicators: Greenhouse Gases. Retrieved from <https://www.epa.gov/climateindicators/greenhouse-gases>
- Esperon-Rodriguez, M., Bonifacio-Bautista, M., & Barradas, V. L. (2016). Socio-economic vulnerability to climate change in the central mountainous region of eastern Mexico. *Ambio*, 45(2): 146-160.
- FAO. (2009). *Declaration of the World Summit on Food Security*, World Summit on Food Security, Rome, 16-18 November.
- Ford, J. D., Pearce, T., Duerden, F., Furgal, C. & Smit, B. (2010). Climate Change policy responses for Canada's Inuit population: The importance of and opportunities for adaptation. *Global Environmental Change*. 20: 177-191.
- FSIN and Global Network Against Food Crises. (2023). 2023 Global Report on Food Crises [GRFC]-Joint Analysis for Better Decisions. Retrieved from <https://www.fsinplatform.org/sites/default/files/resources/files/GRFC2023-hi-res>.
- Hanina H. Hamsan dan Asnarulkhadi Abu Samah. (2008). Kesihatan dan perubahan masyarakat Orang Asli. Dlm. Ma'Rof Redzuan & Sarjit Gill (pnyt.). *Orang Asli: Isu, Transformasi dan Cabaran*. Serdang: Penerbit Universiti Putra Malaysia.
- Hasan Mat Nor. (2020). Kerangka Penilaian Pembangunan Orang Kanaq Malaysia. Dlm. W. A. Amir Zal, Hasan Mat Nor (pnyt). *Prolegomena: Masa Hadapan Orang Asli Malaysia*, 15-40. Kelantan: Universiti Malaysia Kelantan.
- Hood, S. (2004). *Masa Depan Sosio Ekonomi Orang Asli Dalam Milenium Baru*. Seminar Orang Asli 10 Mei 2004.

- Khor, G.L. (2008). Food production strategies for improving household food security amidst rising food prices: sharing the Malaysian experience. *International Food Research Journal*. 15(3):249-257.
- Leh Shii Law, Norhasmah Sulaiman, Wan Ying Gan, Siti Nur 'Asyura Adznam and Mohd Taib Mohd Nasi. (2018). The Identification of the Factors Related to Household Food Insecurity among Indigenous People (Orang Asli) in Peninsular Malaysia under Traditional Food Systems. *Nutrients*. 10(10):1455.
- Lo, Y.T., Chang, Y.H., Lee, M.S. & Wahlqvist, M.L. (2009). Health and nutrition economics: diet costs are associated with diet quality. *Asia Pasific Journal of Clinical Nutrition*. 18 (4): 598-604.
- Mahat a/l Mat Dong, Sarmila Md. Sum, Norasmah Othman & Abd Hair Awang. (2024). Jangkaan Impak Pembinaan Empangan Hidroelektrik Terhadap Komuniti Orang Asli. *Akademika*, 94(1), 2024: 40-52.
- Mohd Tajuddin Abdullah, Muhammad Fuad Abdullah, Candyrilla Vera Bartholomew dan Rohana Jani. (2016). (Pnyt.). *Kelestarian Orang Asli Terengganu*. Kuala Terengganu: Penerbit Universiti Malaysia Terengganu.
- Muhammad Yasar, Chamhuri Siwar, Rospidah Ghazali. (2016). Analisis Kemudahterancaman Pesawah Padi di Kawasan Pembangunan Bersepadu Terengganu Utara, Malaysia. *Jurnal Ekonomi Malaysia*. 50 (2): 39 – 47.
- Mustaffa Omar, Zanisah Man dan Ishak Yussof. (2011). Strategi Tradisional Komuniti Jakun Tasik Chini, Pahang Mengurus Sumber Semulajadi Secara Lestari. *e-BANGI: Jurnal Sains Sosial dan Kemanusiaan*, 6 (2): 239-254.
- Nor Haidanadia Hasni, Mustaffa Omar, Sharina Abdul Halim & Nurasyikin Ghazali. (2016). Ancaman sekuriti makanan terhadap komuniti Lanoh: Kajian kes di Kampung Air Bah, Lenggong Perak. *Journal of Social Science and Humanities Special Issue*. (2): 143-159.
- Norhasmah Sulaiman, Heather Yeatman, Joanna Russell dan Leh Shii Law. (2021). A Food Insecurity Systematic Review: Experience from Malaysia. *Nutrients* 13(3):945.
- Nur Faaizah Md Adam dan Noor Saadah Salleh. (2021). Leksikostatistik Bahasa Kentsiu dan Bahasa Kentaq: Analisis Perbandingan Kosa Kata. *Jurnal Penyelidikan Sains Sosial (JOSSR)*. 4 (11): 40 - 57.
- Pendro Sanchez, M. S. Swaminathan, Philip Dobie, Nalan Yuksel. (2005). Halving Hunger: It can be done. London. Published Eartscan. Poverty, food insecurity, and obesity: a conceptual framework for research, practice, and policy. *Journal of Hunger & Environmental Nutrition*, 5:4, 403-415.
- Prowse, M. (2003). Towards a Clearer Understanding of Vulnerability in Relation to Chronic Poverty. Chronic Poverty Research Centre. <http://cprc.abrc.co.uk/pdfs/24Prowse.pdf>. Retrieved on: 20 Jun 2023.
- Razha Rashid. (1995). Introduction: General issue- Identity, land and health. Dlm. Razha Rashid (pynt.). *Indigenous Minorities of Peninsular Malaysia: Selected Issues and Ethnographies*, hlm. 0-00. Kuala Lumpur: Intersocietal and Scientific Sdn. Bhd.
- Ritchie, H., Rosado, P., & Roser, M. (2023). Hunger and Undernourishment - Our World in Data. Retrieved from <https://ourworldindata.org/hunger-andundernourishment>.
- Seydou Zakari, Liu Ying, dan Baohui Song. (2014). Factors Influencing Household Food Security in West Africa: The Case of Southern Niger. *Sustainability*. 6(3): 1191-1202.

- Shaharudin Idrus, Lim Choun Sian, & Abdul Samad Hadi. (2004). Kemudahterancaman (vulnerability) penduduk terhadap perubahan guna tanah di Selangor. *Malaysian Journal of Environmental Management*. (5): 79-98.
- Steven, M.C. & Tempo, G. (2011). The effect of food insecurity on mental health: panel evidence from rural Zambia. *Sosial Science & Medicine*. 73 (7): 1071-1079.
- Suzana Shahar, Rohida Saleh Hudin, Norhayati Ibrahim, Hanis Mastura Yahya. (2018). *Ketidakjaminan Makanan dan Malpemakanan Warga Emas*. Penerbit: Universiti Kebangsaan Malaysia. Bangi. Selangor.
- Vivien W.C.Y, Saiful Farisin Ramlan dan Rusydi Ahmad. (2019). Pendekatan Kualitatif untuk Memahami Kualiti Hidup Masyarakat Orang Asli di Pahang. *Malaysian Journal of Society and Space*. 15 (4): 191-205.
- Wood, B. (2001). Food security for all: Building Better Communities. In: *Food Chain*, 1-3.
- World Health Organization. (2023). 122 Million More People Pushed Into Hunger Since 2019 Due to Multiple Crises, Reveals UN Report. Retrieved from <https://www.who.int/news/item/12-07-2023-122-million-more-people-pushed-into-hungersince-2019-due-to-multiple-crises--reveals-unreport>
- Yew Wong Chin, Saiful Farisin Md Ramlan, Sia Mal Kong & Ismail Ibrahim. (2023). Pemeriksaan dan Perkembangan Komuniti Orang Asli Melalui Ekopelancongan. *Akademika*. 93(1), 2023: 219-235.
- Zaimah Zalam. (2020). Strategi pemeliharaan pengetahuan tradisi perubatan wanita Bateq Malaysia. Dlm. W. A. Amir Zal, Hasan Mat Nor (pnyt). *Prolegomena: Masa Hadapan Orang Asli Malaysia*, hlm. 95-110. Kelantan: Universiti Malaysia Kelantan.
- Zulkipli Omar. (2015). Menangani Peningkatan Kos Sara Hidup. Institut Penyelidikan Ekonomi Malaysia (MIER). [https://www.mier.org.my/newsarticles/archives/pdf/DrZul21\\_12\\_2015.pdf](https://www.mier.org.my/newsarticles/archives/pdf/DrZul21_12_2015.pdf). Retrieved on: 19 Mei 2023.

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