

# Methods in Conserving Flora and Fauna through Traditional Knowledge of the Semaq Beri in Hulu Terengganu

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**Abstract:** The forest area around Lake Kenyir contains a variety of biodiversity as well as a habitat for various types of flora and fauna. However, the recent forest area around Lake Kenyir has been explored for various purposes such as opening of commercial farms, logging and for tourism purposes. Incidences of poachers exploiting forest products like exotic *gaharu* (gaharuwood) and exotic fauna is increasingly worrying. These have not only affect the forest ecosystem around Lake Kenyir but also affect the indigenous people who are highly dependent on the forest and other natural resources in the area. The Semaq Beri tribe have been trying to help in conserving flora and fauna in the forest area around Lake Kenyir through the methods of practicing their traditional knowledge in everyday activities. Their traditional knowledge is seen to be very effective in the conservation process as well as to reduce damage in the forest area in their daily activities. Thus, this study was conducted to identify the traditional knowledge methods used by the Semaq Beri tribe in the process of conservation of flora and fauna. This study was conducted on the Semaq Beri tribe who are settled at Sungai Berua Village, Hulu Terengganu. This study applies the techniques of participating observation, interviews and document analysis to obtain data in meeting the objectives of this study. The findings found five traditional knowledge methods used by the Semaq Beri tribes in continuing their efforts to conserve the flora and fauna in the forest area around Lake Kenyir. To highlight this method, there should be initiatives from related agencies to expose their traditional knowledge to the public.

**Keywords:** Traditional Knowledge, Conservation, Flora and Fauna, *Orang Asli*, Method

## I. INTRODUCTION

Forest is a vast area where various types of flora grow and is a habitat for many species of fauna. Forest is a tree community as well as animals and insects in a very large area [9]. The forest area in Malaysia is a tropical forest area inhabited by various types of flora and fauna that made this forest area rich with various priceless treasures, including the rich natural resources that are very useful to humans. Natural resources with human function are also known as natural capital. This is explained by [4], that natural capital is also interpreted as a natural resource of natural stocks including animals (land or water) and plants.

Human dependence on nature has long been practiced. Ref [14] explained that humans have long been dependent on

natural resources as these natural resources provide varieties of resources in meeting human needs. In the past, human dependence on natural resources was limited to food intake and shelter. Indigenous tribes in Malaysia are highly dependent on resources from the forest where they utilize the forest produce. Between the flora and fauna used by the indigenous tribes in Malaysia are for making equipment, medicines and function for these indigenous tribes to perform certain ceremonies. Ref [20] explain that this natural capital provides the indigenous tribes with food, water and medicine.

Traditional knowledge inherited by the *Orang Asli* community is their knowledge of the contents of the forest and its benefits in their daily lives. This traditional knowledge enables the *Orang Asli* community to live by depending on the natural resources that can be found in the forest. Ref [15] stated that the basic needs of indigenous peoples are largely dependent on the natural resources there and not so much other outside factors. For the *Orang Asli* communities there are some traditional knowledge related to natural resources that are acquired from some other knowledge and then made to become their very own traditional knowledge. According to [5], indigenous people owned traditional knowledge regarding the use of flora and fauna. This proves that every indigenous groups around the world has their own traditional knowledge that becomes the identity of each indigenous community. Ref [10] explains that every member in a community that practices a traditional way of life should have the knowledge of their environment such as elements of animals and plants.

The *Orang Asli* community that depend highly on the flora and fauna allows this community to have their own unique knowledge of conserving flora and fauna rather than to see the extinction of these natural resources. Traditional knowledge derived from the tradition of their ancestors can be applied to ensure the flora and fauna continue to remain as a precious natural treasure.

## II. PROBLEM STATEMENT

The Semaq Beri tribe is one of the six races of the *Senoi*. Most Semaq Beri live in the periphery of the forest and make the tropical rainforest their home. This has indirectly shaped the culture of their lives that are heavily influenced by the

surrounding forest environment. According to Ref [8] and [7], the daily life of the Semaq Beri community is largely related to forests. The richness of flora and fauna in the jungle makes the SemaqBeri highly depend on the natural resources in various form. The forest offers the people of Semaqto build their houses, a source for them to get their daily necessities and a place to find a living. According to [11], the Semaq Beri is an indigenous community that relies on forest resources to meet their daily needs for food and earn some income. Among the forest produce collected as their source of income are gaharu, various roots and rattan. The Semaq tribe make use of their traditional knowledge inherited from the past in their daily activities. The practice of traditional knowledge in daily life makes this traditional knowledge one of the identity of the Semaq Beri community. According to Ref [1], this process is seen to play an important role in establishing the identity of each Semoqand of the group members.

Today, many forest areas around Lake Kenyir have been explored and encroached with logging activities and development projects. The existence of flora and fauna and the lives of indigenous peoples are threatened by logging, land clearing, encroachment and development activities [6]. It has not only brought damage to the geography of the forest area but also result in the extinction of the flora and fauna in large scale. These activities have threatened the ecosystem and geography of the forest area and disrupted the lives of Orang Asli communities that still rely entirely on the forest. This happens when their hunting areaare getting smaller and forest products are less, including their place of residence and the area they are looking for their livelihoods are also disturbed. Several identified factors have resulted in the extinction of flora and fauna in the Kenyir lake area; (i) Commercial land and commercial openings on a large scale, (ii) Construction of the Kenyir Dam. (iii) Illegal hunting [6].

Ref [6] in his research relating to Orang AsliSemaq Beri in Lake Kenyir states that the opening of this farmland threatens flora and fauna habitats and threatens the Orang Asli community such as reduced resources, loss of income, floods, pollution of nature and erosion land.

### III. PURPOSE OF THE STUDY

The Semaq tribe of Beri have unique traditional knowledge in every day's daily activities. The traditional knowledge includes the activities of exploiting forest products, finding food sources, medicine and so on. The practice of traditional knowledge in their everyday activities has been inherited by previous generations and is still in use today.

For the Semaq Beri tribe, the use of natural resources especially the flora and fauna is very broad in their daily lives. They must ensure that natural resources based on flora and fauna are not extinct and can be passed on to their next generation. Thus, the Semaq Beri tribe uses several methods based on their traditional knowledge in exploiting forest products so that their natural resources can be safeguarded and not extinct. Therefore, this paper is intended to identify

the methods that is based on the traditional knowledge of the Semaq Beri tribe in conserving the flora and fauna.

### IV. LITERATURE REVIEW

Traditional knowledge is something unique that a community has. According to [18], traditional knowledge is fundamental in local decision-making in various aspects such as agriculture, health, education, resource management and other activities within a community. This traditional knowledge was transmitted through various techniques such as conveying them orally. Ref [18] stated that traditional knowledge was passed from generation to generation orally. While traditional knowledge according to [19], is the unique knowledge that a particular society has in relation to the environment or community. Traditional knowledge is the traditional practice of transmitted from generation to generation, which includes various aspects like ecological management, conservation and resource management [13]. In addition to the use of traditional knowledge terminology, [18] state that the term have also the same meaning to Indigenous Technical Knowledge (ITK), which refers to the indigenous technical knowledge, and Indigenous Knowledge (IK), which is the knowledge of the Orang Asli.

The conservation process is aimed at maintaining a particular area with the aim of preserving the culture of a society. The general term of conservation is the process of maintaining a place to preserve cultural interests [16]. The move also includes the process of maintenance, retention, recovery, redevelopment and making adjustments. In addition, conservation also means protecting the flora and fauna species in the forest rather than being widely exploited for future generations to enjoy. The forest is a heritage that have to be managed sustainably, wisely used and conserved for future generations [11]. According to [9], forest conservation is an attempt to revive plants and extinct wildlife.

### V. METHODOLOGY

This study uses qualitative method that is considered appropriate to the main focus of this study. This qualitative method is very relevant in studying social relationships [17]. This is because this method covers the various aspects that need to be applied by researchers to obtain data such as the use of photographs, observations, document analysis and so on [2]. Through this qualitative method, researchers experience the respondents' experiencesduring their field of study. In order to understand social reality, the focus of the research must be on understanding the subjective experience that is believed to be unique to every individual, meaning understanding the meaning one has built into that experience from the individual perspective itself [3].

For this study involving researchers to meet the Orang Asli community and share their views on the objectives of the study, the researchers have chosen ethnographic studies as the designs considered appropriate for this study. The researcher

conducted fieldwork at Kampung Sungai Berua from August 2017 until September 2018 to obtain the required data.

The use of participating techniques in the study has helped researchers in exploring and experiencing their own experience in daily activities of the Semaq Beri tribe. In addition, this technique is seen in accordance with the objectives of the researcher because the observation technique allows the researchers to see the practice of local residents in exploiting natural resources in their placement environment [12]. In addition, the use of interview techniques enabled the researchers to get more authentic and deeper information on an activity. After the data collection process is completed, the data is analyzed using Nvivo software to get the right data.

## VI. FINDINGS

### A. Conservation through Belief System

The main element that serves as a guideline for them in safeguarding the forests is their own beliefs. For the tribe of Semaq Beri, they believe that the forest is a creation of *Tohan*. In addition, for them also this forest is a gift from *Tohan*, given to them for use and to be inherited from generation to generation. According to their beliefs, since then they have set and bestowed the various needs that Semaq Beri can use in their daily lives. *Tohan* has made this forest full of treasures such as rivers and hills and *tohan* has also made the forest a residence for various flora and fauna. The awards awarded by this *tohan* are a valuable gift. This valuable resource is not for the use of the present generation alone, but must be kept to be inherited and used by generations to come. Therefore, the Semaq Beri tribe should use the sustainable and prudent methods of exploitation of natural resources while protecting the forests from the destruction caused by irresponsible hands. On the other hand, in the belief of the Semaq tribe there exists one element known as supernatural power. This power is responsible for maintaining various elements in the forest such as flora and fauna as well as maintaining the harmony of the villagers. This supernatural power also oversees the forest and all the activities carried out by the villagers. In addition, according to the beliefs of the Semaq Beri tribe, this supernatural power is also capable of creating disaster and catastrophe if there is a taboo being violated by the members of society. Due to their strong belief in supernatural powers and to prevent the occurrence of disasters, the Semaq Beri tribe obeys all taboo, avoids deforestation and strives to conserve the forests from destruction. It is told by informant such as follows:

*"Kami ni orang aslimemangkenajagahutan yang tohanhala dah bagipada kami. Tugas kami jagahutanniarnampakmolek je. Kalau kami takjagahutannintitohanhalarah. Kalaudiamarahitu yang jadibanjirtanahruntuhtu. Sebaktu kami duduk sinikenajagahutanjangansampaipunoh. Kalapunoh kami takadatempattinggal. Takadatempatkerja."*

(Informant 3)

### B. Tending of Flora and Fauna

Semaq tribes consume different kinds of flora and fauna in their daily lives. In addition, forest areas that become habitats of flora and fauna are also used as their source of income. Forest collection activity has been practiced since ancient times. However, forest collection activities dependent on their needs and wants. They will only take resources from the forest to meet their daily needs. In addition, if there is a demand from a buyer they will get the forest product demand by the buyer just enough for them to earn some pocket money. This is to avoid wastage of the natural resources. This is told by informants as follows:

*"Akubukanmasukhutanhari-hari. Kalau orang mintakakarkayunibarulahakumasukhutanariakarkayu. Akarkayuninantiakujallahdapatduit. Kalautakada orang nakbuatapaakuambil. Membazir je nanti."*

(Informant 3)

Another informant told the following:

*"Kami masukhutanariapa yang kami perlusahajamacamubi, buah. Tapikalauadatauketudiamarinakbeliakarkayuke, gaharuke, landakke. Barulah kami masukhutanariapa yang taukenak. Lepastu kami juallah. Sebab kami orang aslisiniramaikerjahutan. Kami takdelahtebanghutan sampaiterang."*

(Informant 5)

In addition, harvesting of forest products is not in large proportion but just enough to meet their needs. They are forbidden to harvest forest produce in large quantities hence result in wastage. Informant stories are as follows:

*"Kami orang aslitakambilbanyakmacam orang lain. Kami ambilcukupuntuk kami gunasahaja. Kalau kami sakit kami ambilubatuntusakit kami sahaja. Takbolehambilbanyak-banyak. Sebbegitulahdiaadat kami orang asli."*

(Informant 1)

On the other hand, in utilizing forest resources as their daily necessities, the Semaq Beri tribes practice their values on sharing. Through research observers, cooperation and solidarity among members of the community are very strong and the practice of sharing resources is one of their steps to avoid wastage. The following informants told:

*"Kami nikalauadapatseekortakbolehlahmakansendiri. Kenabahagisikit-sikitdekat orang rumahtakapalah. Kita takbolehlahmakanseorang. Habissemuaakubagi. Sebitumemangadat kami kenaberkongsi."*

(Informant 2)

### C. Exploitation of Forest Area

In the quest for forest produce, the Semaq Beri tribe will enter the forest area that has been identified as still having abundance and valuable forest produce such as agarwood.

However, in some cases, especially the search for *gaharu* wood, the informants were told that they would go to the forest area based on the advice of a *bomoh* or shaman. It was told by a *bomoh* at a village in Kampung Sungai Berua that he will have a dream in his sleep that will show the area of high grade *gaharu* wood. The dependence of those who seek the forest product based on the dreams of the *bomoh* is a way for the Semaq Beri tribe to help these people to get the forest product. Where this step is also seen as not interfering with other forest areas because the dream obtained by the *bomoh* has showed the exact place for reaping the forest products. Indirectly this step is also able to conserve the forest area rather than being blindly exploited. The informant tells the following:

“*Nakcarigaharuinikitatengokduludalamimpikita. Kalauadamipitu ha adaisi. Kalautakada ha takadalah. Kalauadapatmipitubarulahbolehmasuk. Anokakuharitumasukhutanbawahdemptudapat serratus ribulebih. Akumimpitumintakbetullah. Lepastu mu pergilahtebang. Ada selalubesarni ha batangdia (besarpeha). Diabagitiga orang adikberadikiaSohok, Karim, Atan. Deme tigajelah. Deme bagijugakeaku. Bukantakdapattapi deme bagijugalah.*”

(Informant 3)

In addition, according to the traditional knowledge practiced by the Semaq Beri tribes since long ago, they will only engage in obtaining the forest products only in one area at a time. They are prohibited to damage or disturb other areas while conducting forest-harvesting activities. They will only exploit only part of the area and abandon some of the other areas without even being touched.

In addition, the knowledge practiced by the Semaq Beri tribe when exploiting forest products is that they often change the area to harvest forest produce. The Semaq Beri tribe will not take forest produce in the same area repeatedly. They will look for new places that have forest produce and move to that area to get them. This is to give time for the plant to grow and re-grow again before harvesting. This is also to avoid extinction and damage to the flora and fauna and the environment if the exploitation of forest products is concentrated in only one area.

#### D. *Gaharu Retrieval Method*

The traditional knowledge of the Semaq Beri tribe is a more sustainable method of obtaining forest produce for income and indirectly to conserve the general forests and fauna, especially from being destroyed and extinction. In the method of extraction of agarwood by the Semaq Beri tribe, for example, is to examine the core of the tree before cutting it. The trunk of the agarwood is cut and if there is a dark black content which is the aromatic resin, then the tree is cut down. If it does not show any black content, then the tree will not be cut. Methods of taking a more sustainable agarwood based on the traditional knowledge of the Semaq tribe is mentioned:

“*Naktebangaharu ke candan ke kena adacaranya. Kami orang asli ada acara sendiri nak tebang pokok tu. Kami belajar dari orang-orang dulucara dia. Kita tengok dulupokok kalau adaisi kite banglah kalau tak dok kami tinggal cari lain. Diasekalobesar-besargini (peha) sudohadaisi. Kami takek-takek sikit pada batang pokok tu tengok dalam dia adaisi iutuk itateb ang. Isi diawarnahitambelengit (legam) gitu. Tapi kalau takek-takek dalam dia putih lagi iutuk itateb ang. Sebab belum adaisi lagi. Nak jual pun hargamurah. Nantisebulan ke, duabulan ke kami marilah semula”*

(Informant 2)

The methods practiced by the Semaq tribe in the extraction of the agarwood will protect the habitat of the *gaharu* tree and other flora from being threatened to deplete and extinct, will also provide an opportunity for the *gaharu* tree to grow and mature.

#### E. *Method of Fishing*

This section describes sustainable methods based on their traditional knowledge used to catch fish in the river tributaries and Lake Kenyir. Sustainable methods used by the Semaq Beri tribe to catch fish are by using *tuba*. The *tuba* used by them is not a poison *tuba* used by many poachers, but the *tuba* made by the Semaq Beri tribes are naturally made using flora found in the forest. The natural *tuba* used by the Semaq Beri tribes is made of stem bark or tub of stem. They will knock the stem until half it crumbles and soak the skin in water. According to informants, this method is usually used for small river areas. The fish in the area get 'drunk' and will make it easier for them to catch them. Then for a few hours later, the effects of the natural *tuba* will be gone with the flow of water.

## VII. CONCLUSION AND SUGGESTION

The conclusions from the findings suggest that the Semaq Beri tribe practiced traditional knowledge in maintaining and conserving flora and fauna in the forest. In addition, the traditional knowledge practiced by the Semaq Beri tribe is seen to assist in reducing damage to flora and fauna and restoring it from extinction. Additionally, the adaptation of beliefs practiced by the Semaq Beri tribe also helped in safeguarding the preservation of nature. Therefore, the implementation of traditional knowledge in their daily activities can indirectly reduce the various problems and conflicts in the conservation of the flora and fauna. The findings have identified five main methods employing traditional knowledge in the flora and fauna conservation efforts. Such methods include conservation as proposed in their beliefs system, taking the flora and fauna only as needed, exploitation of areas, methods of cutting down the *gaharu* and fishing methods. In addition, adherence to taboos also makes the members of the community very careful in the exploitation of forest products to avoid any mishap.

In order to solve the problem of flora and fauna threats in the forest, the implementation of traditional knowledge of the

Semaq Beri tribe is seen to be helpful in an effort to conserve flora and fauna hence being threatened with extinction. Traditional knowledge that has been experienced and practiced of the Semaq Beri tribe since the early generations was seen to be very relevant in continuing further conservation of the flora and fauna and other ecosystems. This is because traditional knowledge applied in their daily activities is sustainable and does not result in destruction and damage to flora and fauna and other forest areas. This is in line with the country's aspiration to carry out development while maintaining the preservation of nature. This traditional knowledge is also able to assist in the process of breeding flora and fauna to mature before being exploited for sale and others. In addition, the practice of the Semaq Beri tribe that respects and appreciates nature can be applied in all walks of life to create awareness of the importance of forest areas in human life. Hence, there is a need for disclosure in the implementation of this traditional knowledge to the public to provide a new knowledge within themselves of the sustainable exploitation of forest products. Efforts to provide exposure to the public can be made through campaigns or programs related to the conservation of flora and fauna.

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