Sustainable Hunters and Gatherers in Belum-Temenggor Tropical Rainforest

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ABSTRACT

Belum-Temenggor tropical rainforest is located in the district of Upper Perak, state of Perak, Peninsular Malaysia. Covering an area of 300,000 hectares which represent 5% of forest and 50% of known species in the world and is home to 80% of primates in Peninsular Malaysia. This complex is a combination of four forest reserves namely Royal Belum Forest Reserve, Temenggor Forest Reserve, Gerik Forest Reserve and Banding Forest Reserve in which only Royal Belum State Park has been fully protected since 2007 (Figure 1). The Belum-Temenggor rainforest also consists of man made lake known as Tasek Temenggor which is the result from hydroelectric dam project which covers an area of 22,672 acres and is home to at least 42 species of freshwater fish. This tropical rainforest is rich in its diversity of flora and fauna which become the source of subsistence, medicines domestic and economic to seminomadic Jahai hunters and gatherers who live in this area. These nomadic subgroups adapt to the rainforest environment with majority of them built their huts at the lake shores and rivers. The lake and rivers act as a medium of communication and offers source of daily necessities with its abundance of fresh water fish. Apart from that, the sustainable adaptation was also contributed by the element of belief in spirits that inhabited the forest, these peoples ask protection from the spirits through rituals. The Jahai believed that this area is their country and they were the custody of the rainforest. Therefore it is their responsibility to protect and sustain the surrounding area. Based on ethnoarchaeological survey conducted in Jahai settlements in Belum-Temenggor rainforest, this paper aims to discuss shortly on how these communities survived and sustained their living pattern within the environment.

Keyword: Belum-Temenggor, rainforest, Jahai, hunters and gatherers, sustainable
Figure 1. Belum-Temenggor Tropical Rainforest [Source: NCER 2012]

RESEARCH METHODOLOGY

Survey using GPS (Global Positioning System) was conducted to map the distribution of settlements of the groups studied. About twenty Jahai settlements were identified and involved in this research. As an ethnographic research, participation observation is the key element applied in order to understand the behaviour and to record the activities involving this people. Researcher was given permission by the Department of Orang Asli to conduct research and stayed in the department camp in Belum-Temenggor area from time to time from January 2012 until Disember 2013. Within that period researcher have participated, observed and interview (open ended and in-depth interview) with the peoples and informant. Apart from that, recording was implemented using digital recorder, digital camera and video.

The Jahai

The Jahai is one of the Negrito subgrouping apart from Kensi, Bateq, Kintak, Mendrik and Lanoh. Majority of their settlements are located at the fringe of Belum-Temenggor tropical rainforest. The current population of Jahai in Belum-Temenggor approximately 50 km from Belum- Temenggor (except Lanoh) who formed into family [Benjamin 2001].
Culturally and linguistically, they are not a homogeneous group but possess their own identity as Jahai. The highest population are at Kampung Sungai Tiang which represent 97 families with 425 peoples while the smallest population is at Pulau Cheri with only 6 families and twenty peoples.

Based on ethnographic and historical evidence, the jahai are pure nomadic hunters and gatherers which dependent on the rainforest for their diet and subsistence [Hamid 2010]. Currently only a few groups of the Jahai are semi-nomadic hunters and gatherers while the rest live sedentary. Based on the survey it is found that the group in Sungai Kejar A, Sungai Kejar B, Bungor Hilir A, Bungor Hilir B and Charok Bus can be considered as semi-nomadic hunters and gatherers. The characteristics is based on their mode of production and their pattern of settlement. The semi-nomadic hunters and gatherers usually stayed temporarily in a based camp and went foraging in the rainforest between one to two weeks and will come back. During foraging they will hunt wild game and collect plants like tubers, fruits, shoots, honey etc for subsistence. They also collect various forest products for sale such as sandal wood (Aquilaria malaccensis), rattans (Calamus sp.), resins etc, while foraging, they will sleep at a temporary shed known as hanyik made by palm leaf known as chohoh (Calamus castaneus).

Hunting is done using blowpipe mace of a special bamboo known as Sewoor (Bambuseae viray) or Teming (Schizostachyum jaculans) which have a longer node compared with an ordinary bamboo that is very suitable for blowpipe. Usually the length of Jahai blowpipe is approximately about 3 meter. Wild game is hunt using a dart fill with poison taken from Ipoh tree (Antiaris toxicaria). Wild game is kill using a dart fill with poison taken from Ipoh tree (Antiaris toxicaria). Usually the jahai hunters hunt small game especially all kind of monkey such as Presbytis obscura, P. memalohos, Macaque and squirrel (Callosciurus). Big game such as wild boar (Sus scrofa) is hunt using spear or trap. While in the forest, they only hunt adequately for their meal but will bring back more meat to based camp and shared with families and neighbours. Usually the hunt wild game will be smoke to ensure it can stand longer before arriving to their based camp. The rest of the Jahai live sedentary in a permanent government built house. However, they still practiced hunting and gathering for subsistence, collecting jungle products for cash return and fishing but the only difference is they began to involve in cultivation.

Jahai catchment area is known as sakak (in Malay pusaka), its made by mutual understanding among various tribe in the Belum-Temenggor rainforest including Temiar. Usually these sakak territory identified by rivers, mountain and fruit orchard. Although it is not written but this social understanding is respected by generation to generation. It is a common practice that people from difference clan or villages cannot hunt or collect forest product in their neighbouring sakak territory unless they were given permission. Violence seldom occurs among them as this group are nonviolent nations and refer to live in harmony. But based on village and stay practiced is rationale.
Table 1: The Belum-Temenggor Jahai Population

<table>
<thead>
<tr>
<th>No.</th>
<th>Villages</th>
<th>Number of Families</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sungai Banun</td>
<td>29</td>
<td>141</td>
</tr>
<tr>
<td>2</td>
<td>Desa Permai</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>Damai</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>Pengkalan Damai</td>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td>5</td>
<td>Desa Hia</td>
<td>18</td>
<td>81</td>
</tr>
<tr>
<td>6</td>
<td>Pulau Tiuah</td>
<td>10</td>
<td>89</td>
</tr>
<tr>
<td>7</td>
<td>Sungai Raha</td>
<td>24</td>
<td>161</td>
</tr>
<tr>
<td>8</td>
<td>Sungai Tekam</td>
<td>13</td>
<td>90</td>
</tr>
<tr>
<td>9</td>
<td>Persingnapah</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>10</td>
<td>Selapar</td>
<td>13</td>
<td>81</td>
</tr>
<tr>
<td>11</td>
<td>Kehal</td>
<td>14</td>
<td>77</td>
</tr>
<tr>
<td>12</td>
<td>Bungor Hilir A</td>
<td>26</td>
<td>250</td>
</tr>
<tr>
<td>13</td>
<td>Bungor Hilir B</td>
<td>35</td>
<td>80</td>
</tr>
<tr>
<td>14</td>
<td>Cherok Bas</td>
<td>16</td>
<td>90</td>
</tr>
<tr>
<td>15</td>
<td>Cherok</td>
<td>7</td>
<td>70</td>
</tr>
<tr>
<td>16</td>
<td>Sungai Chuwah</td>
<td>13</td>
<td>76</td>
</tr>
<tr>
<td>17</td>
<td>Sungai Kejar A</td>
<td>25</td>
<td>208</td>
</tr>
<tr>
<td>18</td>
<td>Sungai Kejar B</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>19</td>
<td>Sungai Temang</td>
<td>20</td>
<td>114</td>
</tr>
<tr>
<td>20</td>
<td>Sungai Tiau</td>
<td>97</td>
<td>425</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>492</td>
</tr>
</tbody>
</table>

The Pattern of Adaptation

This tropical rainforest is rich in biodiversity and is home for the Negritos. They adapt to the rainforest environment with the concentration of settlement at the lake shore and rivers such as Sungai Kejar, Sungai Sanghoi, Sungai Mangga, Sungai Sarah, Sungai Tebang, Sungai Senge, Sungai Selaor, Sungai Banun and Sungai Raba [Figure 2]. This settlement pattern has similarities with the adaptation pattern of the palaeolithic societies during the late Pleistocene period in Lenggong Valley some 100 km from Belum-Temenggor. According to Mokhtar & Jeffrey [2007], the palaeolithic societies adapt to the lake shores and rivers as this environment offers resources such as choppers, axes to produced stone tools.
shores. The findings convinced that the site has been used as settlement and working area to produced stone tools.

Parallel with rivers and lake environment the current Jahai communities depend on lakes and rivers as source of fresh water for drinks, cooking and daily necessities. The lake and rivers are also source for fresh water fish and tortoise for their subsistent. Based on the survey it is found that the lakes and rivers is home for at least 42 species from a total of 12 families of fresh water fish (Hashim et al 2012). The fish is caught by fishing rod, using fishing net or by harpoon. The lake and river were their main medium of communication with outside world and to the neighbouring villages as well as during hunting and gathering. Bamboo raft is the main transport and currently fibre boat is being introduced.

Currently there are three type of Jahai house a) a traditional hut made of bamboo and chachoh palm leaf, usually this kind of hut can be found at the heart of the rainforest especially in Upper Belum (Sungai Kejar A, Sungai Kejar B, Bungor Hilir A, Bungor Hilir B) and also in Charok Bus, b) a house made of split bamboo and supported with pole and c) a wooden government house with asbestos roofing, usually this modern settlement equipped with solar electricity and tap water funded by the government.

![Figure 2 Distribution of Jahai settlements in Belum-Temenggortropical rainforest](image)

**Diet and subsistence**

The Jahai environment offers abundance of flora and fauna for diet and subsistence as well as for medicine and other domestic use. Based on the survey it is found that the Jahai still practiced self-sufficient economy and dependent on the fruit from self-sufficient forest, rattans and bamboo was conducted by
researcher to examined how this people resilience and sustain their living by being dependent on the environment as a source of diet and subsistence. The survey was conducted by following 2 jahai gatherers tracking the rainforest and collect whatever plants that can be eaten, roots that contain water that can be drink, plants that can be used as medicine and other domestic use. The gathering area involve only 1 km radius around Sungai Banun vicinity. The survey took 2 days and we spent about 3 hours for each survey. As a result 2 days or 6 hours time spent for gatherings, we have collected about 73 species of plants that can be eaten, used for medicine or domestics purpose. The collection involved about 7 species of tubers, 25 species of shoots, 18 species of fruits and 5 species of palm leaf use for roofing and for making house wall, 8 species of plants for medicine and about 10 species of bamboo that the Jahai seldom use to make their material cultures (Table 2). The evidence convinced that the rainforest environment is sustainable to the Jahai as it offer abundance of plants for diet and subsistence, for medicine and domestic use.

Table 2. Plants collected during survey

<table>
<thead>
<tr>
<th>Tubers</th>
<th>Shoots</th>
<th>fruits</th>
<th>Palm leave for roofing</th>
<th>Plants for Medicine</th>
<th>Bamboo</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>25</td>
<td>18</td>
<td>5</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

**World view and belief**

Another contributing factor toward sustainable living pattern of the Jahai is their world view and belief. It is suggested that their belief is parallel toward sustainable nature and environment. Like most of the Negrito, the Jahai believe in two supernatural deities or Orang hidup known as Yak and Kerei. According to the Jahai, Kerei live in the sky and will always monitoring whatever misconduct done by the peoples. There are a certain taboo that should not be break for example laughing at a monkeys, centipede, butterflies etc as this animal is a good friend of Kerei. Breaking of taboo will anger Kerei and Kerei will punish the peoples with lightning, flood, sending a tiger to kill the people and sickness. If it is happened they will performed a blood sacrificing ritual by scratching the leg with knife till the blood flows and the drops will be placed in a piece of bamboo, then they cast them aloft toward the sky to propitiate the angry deities.

Apart from the deities, the Jahai belief that the surrounding environment like trees, mountain, hill, rivers, rocks, lake and etc lived a spirits known as cennoi or Jermo. The Jahai also believe in the presence of their ancestors spirits known as Moyang Tapern dan Tok Samin. This spirit should be respected and asked for their blessing to enable them to survive in the environment. The Jahai believe that the obeys the norms and peoples aware not to
This spirit can’t be seen in nature by ordinary people except by shaman medicine man known as halak that has a capability to communicate with the spirits through ritual. The ritual were usually performed to cure sickness cause by the spirit or before opening a new plot of land for swidden where the shaman will communicate with the spirit to ask for permission. The ritual is known as pennilon where the halak will sang a song that praise upon the cenoor the Jermo that live in the mountain, flower, tiger etc. Usually the halak get the song from the Chinnoi or Jermo through his dreams. An example of one of the famous Pennlion song is Haronggang or eagle [Dalong Pilloi, Sungai Banun, 21st January 2013].

Haronggang (Eagle)
Hai se haronoanana
Chan jermol lak ayem
Jermol avem
Yeh beleis chan jermol
Jermol patuna
Yek heleis chan jermol
Jermol avam
Yek beleis chan jermol

Hai Eagle
Jermol from the Chicken mountain
Chicken mountain
And fell from the mountain
Jermol from the chicken
Jermol of chicken
Fell from the mountain
Chicken mountain

Food Sharing

Another interesting aspect practiced by the Jahai is food sharing, the concept of practicing food sharing is known among Jahai as genhak. The concept is a universalis practiced among most hunters in the world for example among the Eskimos in Alaska, the concept is known as avikluaear. However although food sharing is practiced but the main hunter will get more portion compared to his members, this is known as pilyuk [Burch 1988]. Among the Penan in Sarawak, the concept is known as see humeans sharing and stingy is a negative attitude among them [Davis & Henly 1990]. By practicing food sharing, the Suku Anak Dalam in Jambi find similarities and working collectively as a group. However sharing of meat will only involve big game like wild boar, deer and a hunter can consumed the meat individually if he hunt small game. Apart from mutual understanding this concept was practiced in “bong” (Handini camp) they depend on each other. This concept will be
inherited from generation to generation, the young Jahai will learn to hunt and
shared the meat equally with his friends. The Jahai belief that every food obtained in
the environment should be shared and element of selfish, stingy, greedy will anger
the spirits. The person who break the norms, will fell sick, seizures and find
difficulties in his entire live. Therefore they collectively preserved and sustain the
environment to ensure their survival.

CONCLUSION

As a conclusion the Jahai can be concluded as sustainable hunters and
gatherers which adapt to the rainforest environment which is rich in its biodiversity.
There are several factors that contributes in sustaining the Jahai living pattern as
hunters and gatherers. The first factor is that this people are symbiotic with the
rainforest because they believe that they were the custody and the citizen of the
rainforest and it’s their responsibilities to preserve them. The second factor is
contributed by their simple way of life e.g. self sufficient economy and simple
technology that enable sustainable development to continues. The third factor is the
practice and respect with the tradition and norms inherited such as food sharing, the
existence and respect on mutual understanding on the hunting and gathering
territory of sapek. Indirectly, the norms and cultural tradition play an important role in
the preservation of the rainforest. The fourth factor is their belief that lies on the
principle that environment is home for the spirits known as Cennoi or Jerma, the
supernatural deities and ancestors. Therefore to ensure the survival in the rainforest
they need to sustain good relationship with the spirits, the supernatural deities and
the ancestors.

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