Fear or Altruism? Exploring the Environmental Ethic and Loss of Traditional Knowledge of the Forest Dependent Jakun

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Introduction

The manner in which societies perceive and relate to nature is culturally specific and influenced by socio-political as well as historical factors (Palmer, 2003). Culture theory espouses that culture exhibits the way humans interpret their biology and their environment. Therefore, ideas about conservation and environmental ethics would correspondingly differ from one culture to another. Some societies are more predisposed to conserving their environment than others. Nonetheless, most cultures have their own set of environmental codes, generally referred to as environmental ethics or environmental ethics which not only maintain a harmonious relationship between humans and their environment, but also serve to ensure the continuing material and cultural enrichment of the society (Misra, 1995). Human interactions with their environment is determined to a large extent, by ethical values, ingrained in them through their belief systems and culture which has a great bearing on their survival as a cultural group (Misra, 1995; Santasombat, 2003).

Traditionally, indigenous peoples utilise natural resources for their sustenance. Based on their traditional knowledge, indigenous peoples have learnt to manage natural resources within their ecosystem in a sustainable manner (Rohana *et. al.*, 1997). The sustainable management of natural resources is referred to as 'environmental ethic' (Santasombat, 2003). Elements of conservation in traditional societies are reflected in the land use, customary laws, cultural patterns and lifestyles of forest dependent peoples (Santasombat, 2003).

Indigenous peoples contribute to the conservation of biodiversity through the practice of their religious beliefs and rituals (Callicott, 1995). The indigenous worldview is filled with reverence for spirits of nature. Indigenous peoples, such as the American Indians possessed a 'metaphysics of nature', i.e. reverence of all natural elements as expressed through rich and complex rites and rituals, which also serve to dictate the manner in which these peoples utilise nature (Evans, 1918; Callicott, 1995 Santasombat, 2003; Fisher, 2005). Indigenous peoples believe that the earth is inhabited by humans, non-humans and super humans. Therefore, to maintain their well-being, their traditional practices necessitate maintaining good social relations with all living beings in the immediate environment, regardless of the degree of sentience (Callicott, 1995).

However, environmental ethicists have begun to question the motivation for conservation amongst indigenous societies. For example, some argue that moral restraints in American Indian culture were not purely altruistic and the attitudes of these peoples towards the environment varied between individuals and according to location (Callicott, 1995). Environmental ethicists also opine that fear of the spirits of nature, and not the appreciation of nature's inherent values dictates indigenous attitudes towards the environment (Callicott, 1995). Since human societies are not homogenous, there are bound to be some members of society who are selfish or greedy whose attitudes towards the environment need to be regulated by other forms of motivation than moral sentiments. Therefore, the appeal of fear of punishment was included in indigenous cultures as a 'backup motivation' to keep such individuals in check (Callicott, 1995).

Critics of indigenous environmental ethics argue that indigenous 'spiritualising' of nature, their reverence for nature and restraint employed in harvesting forest produce is overrated and that *"there is nothing here to suggest morality"* (Callicott, 1995: 212). In view of the conflicting perspectives of indigenous peoples' attitudes towards nature, this study was undertaken to explore the environmental ethics of the Jakun of South-East Pahang, Malaysia to understand the underlying basis of the Jakun environmental ethic and its contribution to biodiversity.

Another dimension of this study focuses on changes in traditional lifestyles of the Jakun to understand the corresponding impacts to their attitudes towards nature. Since cultures are essentially open, i.e. they are susceptible to influence from other cultures (Fay, 1996). Therefore, indigenous belief systems are constantly changing and adapting themselves to current conditions. The sociological theory of religion (Durkheim, 1963) states that religion contributes to continuation of society, binding its members through indirect coercion to affirm their common values and beliefs on a regular basis. Nonetheless, it was predicted that the influence of religion would decrease as societies modernise with scientific thinking replacing the religious beliefs, with people giving only minimal attention to rituals and ceremonies (Durkheim, 1963). The effects of changes in belief systems or indigenous religions on environmental ethics form part of the research paradigm of this study.

The global economic paradigm which espouses cultural homogeneity has resulted in the depletion of indigenous cultures and knowledge (Razha & Wazir Jahan, 2001; Santasombat, 2003; Lasimbang & Nicholas, 2004). Traditional knowledge is gradually disappearing due to the exposure of indigenous peoples to the outside world, external pressures, which alter their lifestyles and the bombardment of modern technology, which are slowly replacing traditional technologies, which helped sustain them for centuries (Burger, 1990; Razha & Wazir, 2001; Santasombat, 2003, Lasimbang & Nicholas, 2004). Traditional knowledge systems decline when indigenous peoples are exposed to values and lifestyles different from that of their ancestors (Burger, 1990; Grenier, 1998). Traditional knowledge has disappeared in many traditional societies (Fisher, 2005) and is now retained only in the memories of the aged village elders and shamans and when these people pass away, traditional knowledge may be lost forever (Burger, 1990). Therefore, *"Each time a medicine man dies, it is as if a library has burned down"* (Plotkin, 1986:114).

In the context of this study, changes in the Jakun tradition can have negative consequences for the long-term sustainability of the community itself and subsequently, their traditional knowledge system. Most academics and decision-makers would agree with Johannes' (2002) assertion that without environmental ethics, traditional societies,

including indigenous peoples, are unable to live within their natural resource limits. This is a cause for concern as the Jakun are currently facing a shortage of natural resources due to high population density, limited natural resources as a result of being regrouped and through massive deforestation (Lim, Woon & Parid, 1999; Gill, 2005; Gill & Kamal, 2005; Kamal, 2005). The erosion of indigenous cultures and knowledge will continue if indigenous peoples' economic self-reliance is compromised in terms of inability to access forest resources and insecurity of land tenure (Razha & Wazir, 2001).

Conflicting paradigms: Anthropocentricism vs. Biocentricism

Contemporary environmental ethics prompts critical thinking of the moral standing of the myriad of species which exist in this world and that of elements of nature thereby challenging the age-old anthropocentric views of the environment.

The central debate in environmental ethics is that between anthropocentricism and biocentricism, the former focusing on the instrumental (use) value of nature and the latter on the intrinsic value of nature (Attfield, 2003). Biocentricists argue that organisms, regardless of their sentience have moral standing as they have the ability to flourish and develop and it is only inanimate objects, which cannot flourish, that lack moral standing (Palmer, 2003).

Anthropocentric views on the environment have their roots in traditional mainstream Christian ethics, secular Western ethics (Kantian and utilitarianism) and modern economic theory (Fox, 2003). Deconstructive postmodernists opine that the modern age is a result of an essentially flawed scientific and capitalistic Enlightenment era which ought to be expunged in a cultural revolution which emphasises holism instead of reductionism (Oelschalaeger, 1995). Therefore, postmodern environmental ethicists advocate a holistic, rather than an individualistic, environmental ethic arguing that the well-being of the ecological community as a whole should be the primary ethical goal or principle of an environmental ethic (Palmer, 2003). They believe that a framework for ethical human behaviour with regard to the natural environment is

needed as uncontrolled human environmental exploitation, largely influenced by anthropocentric views of the environment has resulted in rapid and massive destruction to the environment (Misra, 1995).

Nonetheless, anthropocentric views do not necessarily suggest *"reckless exploitation of the environment"* (Palmer, 2003:18). Weak anthropocentricism is concerned with managing natural resources for the benefit of the poor and future human generations (Palmer, 2003). The avoidance of catastrophes which would eliminate future generations is a very good reason to preserve the environment and forms the basis of any environmental ethic (Attfield, 2003). Conservation in the conventional sense is also anthropocentric in nature. Indigenous peoples are somewhat anthropocentric as they utilise the natural environment to meet their subsistence needs. Indigenous peoples and conservationists have the same goal of protecting the environment out of obligations to future generations so that we do not *"saddle them with environmental harms"* (Light & Rolston, 2003:9). Therefore, maintaining a harmonious relationship with nature is subject to nature's being useful to a particular culture at a particular time, i.e. on its instrumental value (Light & Rolston, 2003). In other words, when nature ceases to deliver the goods and services needed by humankind or if humankind ceases its dependency on natural resources, there would be no incentive to conserve natural resources.

One of the earliest proponents of the non-anthropocentric view was Aldo Leopold in his ecocentric essay called *A Sand County Almanac* which emphasises the importance of the holistic approach to nature (Palmer, 2003). He argued for a 'Land Ethic' which goes beyond the individual and *"enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively, the land"* (Leopold, 2003:39). There are two primary aspects to Leopold's argument, first, that moral priority should be bestowed on the biotic community, rather than the individual and secondly, primary importance ought to be placed on ecological integrity and stability (Palmer, 2003). The land ethic conceives the idea of an 'ecological conscience' which raises deep questions about individual responsibility for the health of the land (Leopold, 2003).

Deep ecology, drawing on Leopold's land ethic, is another non-anthropocentric school of thought or rather, a movement which emerged in the 1970s which radically urges humankind to identify with all human and non-human life on earth (Attfield, 2003; Naess, 2003; Palmer, 2003). Deep ecology advocates a paradigm shift from the dominant economic growth ideology to ecological sustainability (Fox, 2003). Ethically, deep ecologists advocate biocentric qualities which stress on the inherent worth of the biotic community, i.e. an egalitarian approach to living organisms, human or non-human to blossom and flourish equally, independent of the usefulness of the non-human world to mankind (Palmer, 2003). Metaphysically, deep ecologists espouse the interconnectivity between all living beings and reject the notion that humans are separate from their environment (Palmer, 2003). This paper will argue that the underlying basis of the Jakun environmental ethic stems mainly from anthropocentricism, and not biocentricism, as is widely believed of indigenous peoples.

The Research Setting

The study area is located in an indigenous Jakun village on the fringes of the South-East Pahang Peat Swamp Forest called Kampung Simpai. The village is under the administrative boundary of the Bebar Sub-District, in the District of Pekan, in the state of Pahang. Kampung Simpai, which is located next to two peat swamp forest reserves, consists of 292 households with a population of 1300 people (JHEOA Pahang, 2005).

Methodology

Three types of data collection techniques were employed in this study which combined qualitative and quantitative research, aimed at different actors within the Jakun society. The determination of environmental ethics was conducted among the village elders and key actors such as the village head and healers. The perception surveys, conducted to determine the decline in traditional knowledge was targeted at the Jakun youth, who are at the transition between the traditional way of life and the so-called 'modern' materialistic lifestyle. The data collection techniques are described below.

Focus group interviews

Data elicited from this technique pertained to the prevalence of environmental ethics and the attitudes of the Jakun towards their forests and their knowledge. This technique entails informal conversational interviews in groups (maximum 10 individuals), i.e. without any predetermined set of questions; instead the researchers and interviewees talk freely (Burgess, 1991). At least six focus group discussions were held with village elders (including the village committee members, healers and handicraft-makers), housewives as well as village youth (20 years and below)

Household Questionnaire Survey

Household surveys were conducted among respondents from 100 households using a structured questionnaire to gauge the perceptions of the householders on their environmental ethics and traditional knowledge. The questionnaire combined quantitative and qualitative elements. The types of questions sought information regarding the taboos and restrictions which govern their forest products harvesting practices, threats to traditional knowledge and the perceptions of local communities on traditional knowledge.

Pebble Distribution Method (PDM)

This is a weighted ranking exercise, used to gauge perceptions and attitudes of local communities. It was first used by the Center for International Forestry Research (CIFOR) in a multidisciplinary landscape assessment of indigenous peoples in the interiors of Kalimantan (CIFOR, 2002). In this study, the PDM exercise was conducted to gauge responses from the Jakun youth (stratified according to gender) with respect to their perceptions on reasons for loss of traditional knowledge

The PDM exercise required the use of labelled flash cards and 100 counters. The flash cards are labelled with specific answers based on hypothetical questions drawn from observations in the field prior to the PDM exercise. Non-probability

sampling was adopted whereby sampling was determined at random, based on the availability of persons from different age groups and gender, involving thirty respondents. The PDM exercise begins with the facilitator asking the respondents (either in groups or individually) a set of pre-determined questions, then laying the flash cards on the floor for the respondents to choose, according to the order of priority, as perceived by them. The respondents are then asked to distribute 100 seeds on the labelled cards in proportion to their 'importance'. All 100 pebbles must be used, in order to get a total score of 100 (CIFOR, 2002).

The underlying assumption of the PDM method is that the respondents have shared values and experiences, in varying degrees and it is this degree of variability that the PDM intended to capture. This method is particularly useful in eliciting perceptions from illiterate sectors of the traditional communities. The main advantage of the PDM in this research is that it seeks to elicit 'importance', which is generally an abstract notion using numerical methods, which paves the way for a quantitative analysis of perceptions of loss of traditional knowledge in this study (CIFOR, 2002).

Results and Discussion

This study revealed that the Jakun have a set of environmental ethics derived from their traditional knowledge and are relevant to the conservation of biological diversity. The environmental ethics of the Jakun are rooted in the following spheres: customary laws and rituals and forest and land-clearing taboos.

Customary Laws and Rituals

The community, through customary laws is able to use power to issue mandates to its members with regard to utilisation of natural resources. Customary laws reflect moral principles which emphasises subsistence security of the community above personal interests. The Jakun have customary laws (*hukum adat*) which have an appeal of fear of punishment to ensure the continuous supply of resources for the present and future generations.

According to the Jakun customary laws, one can only harvest a maximum of half the resources available. According to the Jakun belief, there is a spirit or a *penunggu* or *semangat* for every element in nature, i.e. the rivers, trees, hills, mountains, valleys etc. Therefore, if an individual wants to harvest a particular resource from a particular area which he has never before ventured into, he has to consult the *pawang* (shaman) of the particular territory who will then seek permission from the spirits of a particular location to allow the individual to carry on with the harvest. This rule applies not only to plants and animals, but even to minerals. The use of modern harvesting techniques, such as heavy machinery to plough the land was not allowed by the shamans who have recently passed on. If one wanted to look for gold, one had to use traditional techniques as they were afraid to break the pact (*pecah pawang*). The Jakun believe that if the pact was not honoured the resources would disappear from the area. The Jakun were also not allowed to clear the land or burn the land without special permission for fear of retribution of spirits, resulting in the resources diminishing forever.

Forest and Land Clearing Taboos

This study has uncovered a link between the harvesting practices of the Jakun with their traditional belief in forest taboos. Focus group discussions and observation in the field revealed that there are many taboos which are useful in conserving biodiversity (Table 1). Other taboos serve to protect the Jakun from maladies in the forest. Also, the Jakun believe that if there are some abnormalities in the animal, they will not eat the meat.

There are several taboos associated with land clearing and agriculture in the Jakun culture. Land could not be cleared indiscriminately and permission from the *pawang* must be sought and offering to spirits must be made through the *pawang*. A village elder who still practices these taboos explained that in the past, whenever land was cleared for swiddening, an offering had to be made through a *pawang*. Anthropological studies on the Orang Hulu (Jakun) of Endau and the Semai also described similar practices (Tachimoto, 2001; Evans, 1918). The offering is made to

appease the spirit of the earth (*jin bumi*) at the site about to be cleared (Evans, 1918; Tachimoto, 2001).

According to Simpai elders, the shaman would offer *pulut* (glutunious rice), *sireh* (betel leaves and nuts) and some cigarettes (Evans, 1918; Santasombat, 2003; Fisher, 2005). The shaman would communicate with the spirits, stick a knife into the ground and will then *seru* (chant), *"If you love and want this land, then please take this knife out of the ground"*. This is akin to seeking permission from the spirits to open up new land.

Table 1: Prevailing Taboos Associated With Peat Swamp Forests

Taboo	Consequences (According to animist beliefs)	Interpretation in terms of relevance to conservation
Chopping trees which are unfamiliar to the individual.	The spirit (*semangat* in the Jakun language) of the tree may possess the wrongdoer or put a curse on the wrongdoer, causing high fever, vomiting, inability to urinate or even appearing to the individual in a fit of anger.	This can be useful in terms of preserving trees whose uses are not yet known to the community, which may contain medicinal properties.
Joking, shouting or talking loudly while in the forest.	The spirit (*semangat* in the Jakun language) of the tree may possess the wrongdoer or put a curse on the wrongdoer, causing high fever, vomiting, inability to urinate or even appearing to the individual in a fit of anger.	Useful in maintaining the tranquillity of the peat swamp forests, to create a conducive environment for fauna to flourish (curbing noise pollution).
Boisterous speech or poking at the droppings or footprints of wild animals with dangerous weapons.	Wild animals will come to know of their actions and attack the wrongdoers.	Useful in instilling respect for fauna in the forests.
Hunting pig-tailed macaques (*Beruk Tunggal* in the Asli Jakun language).	It is believed that the spirit (*gunik* in the Jakun Language) of the animal will possess the wrongdoer.	Useful in conserving this species (Protected under the Malaysian Wildlife Act 1972).

Table 1: (Continued)

Taboo	Consequences (According to animist beliefs)	Interpretation in terms of relevance to conservation
Owls (*Burung Pungguk*) cannot be hunted indiscriminately. Once killed, the animal has to be used in a wise way, such as in preparing traditional medicine. The same is said of *Ikan Buntal Sungai* (freshwater fish).	It is believed that the spirit (gunik in the Jakun Language) of the animal will possess the wrongdoer.	To avoid wastage of peat swamp forest resources, thus contributing to the conservation of this avifauna.
Chopping down/plucking poisonous plants such as *Ipoh* tree, *Jelatang* and *Kayu Pokok* (from lowland diptertocarp forests) and *Pokok Beringin Hitam* (peat swamp forests).	Each poisonous plant is believed to have a spirit which may possess or cause mischief.	To ensure the well-being of all forest dwellers, humans and animals alike who may be accidentally poisoned.
Collecting the droppings/carcass of wild animals such as tigers, elephants, crocodiles.	It is believed that the spirit (*gunik* in the Jakun Language) of the animal will possess the wrongdoer	To instil respect for animals and for the safety of the Asli Jakun themselves as wherever there are droppings or animal carcasses, these wild animals may be close by (also protecting these animals from being killed by the Asli Jakun in self-defence).
Ridiculing animals such as pig/long-tailed macaques or humans who resemble such animals, tortoises and worms.	Such actions will result in typhoons or flooding at areas where the action took place	Useful in instilling respect for fauna in the forests.

The Jakun would then start clearing the land soon after, all the while observing if the spirits have taken the knife out of the ground. If everything goes well on the first day of clearing, then they will continue to clear on the second, and the third day. After three full days, they will once again take a look at the knife in the ground. If the knife is still in the ground that is a signal that the spirits do not want the land and cultivation can take place at the spot. The spirits have given permission. If the knife has been taken out, which means the entire family has to move elsewhere and find another swidden plot. If

one refused to leave and continued to clear the land, then they may be plagued with sickness, accidents, etc.

The Development of Conservation Knowledge among the Jakun

The primary element which binds the Jakun with their natural environment is their belief system which shapes their attitudes towards the environment. Indigenous peoples believe that the earth is inhabited by humans, non-humans and super humans. Therefore, to maintain their well-being, their traditional practices necessitate maintaining good social relations with all living beings.

The Jakun are traditionally animists who believe in the spirits of nature. According to the household questionnaire survey, 94% of the Simpai Jakun profess to be animists. An integral part of the belief system is the element of taboos which dictate the manner which they should live their lives. There is still a high level of reverence for spirits of the forests and other supernatural entities as 89% of the respondents (adults, 21 years and above) still believe in them (Table 2).

Table 2: Frequencies for Practice of Forest and Land Clearing Taboos

Description	Belief in spirits (overall) (%)	Forest taboos (%)	Land clearing taboos (%)
No response	3.0	1.0	3.0
Yes	89.0	58.0	44.0
No	3.0	41.0	53.0
Neutral	5.0	0.0	0.0
TOTAL	**100.0**	**100.0**	**100.0**

The Jakun assert that they are not the only ones in this world and that some unseen force is there to protect them and guide them in their lives. The Jakun believe that the spirits are everywhere and constantly monitoring their behaviour. This is why the Jakun are still cautious about their behaviour in the forests and try to observe forest taboos. More than half of the Jakun still adhere to forest taboos while the overall

adherence to land clearing taboos is 44% (Table 2). The adult Jakun still believe in the spirits because of fear as they have experienced some unexplained phenomena or witnessed such occurrences, such as illnesses which cannot be cured by modern medicine but can be cured by healers. There are also forces that wreak havoc and unleash their fury on the villagers if certain taboos are broken. The basis for the Jakun environmental ethic is not entirely motivated by altruism or affection for nature. The Jakun either willingly or grudgingly apply their environmental ethics because of fear of punishment, fear of losing their sustenance or some practical reason which suits their convenience. For example, till this day, the Jakun do not kill or sell hornbills for the following reasons: firstly, the hornbills are hard to catch, secondly, because the meat is tough, not to the liking of the Jakun and thirdly, because there are a host of taboos associated with eating or killing hornbills. The Jakun also refrain from picking fruits which are poisonous because they fear that it can cause either dizziness or death.

Taboos associated with the forest almost always served a purpose, i.e. either to protect oneself from harm or to instil respect for the spirits of nature whom the Jakun believe are an integral part of the forests. The breaking of a taboo by any individual in a village will spell trouble for the individual or the entire village. Fear of retribution and aspiration for rewards and protection from the spirits of the forests forms the basis of the belief system of the Jakun.

The Jakun also believe that if a pact made with the earth spirit regarding harvesting in moderation was not honoured, the resources would disappear from the area. Therefore, the Jakun environmental ethics is rather practical in nature and has a very weak basis as it stems from an external force and not an internal desire or motivation to conserve their resources for the greater good, thus displaying an anthropocentric environmental ethic. The deep ecology paradigm, which is based on biocentricism is not applicable in the context of the Jakun of Kampung Simpai.

Erosion of Traditional Knowledge and Environmental Ethics

The decline in traditional knowledge of the Jakun was acknowledged by 95% of the surveyed population (primarily leaders of the households) both men and women, above 21 years of age (Table 3). The overwhelming consensus points to the decline in the knowledge possessed by the younger generation, compared to their predecessors. The term younger generation here is relative as interviews were conducted with householders from 21-62 years of age. Therefore, the younger generation refers to anyone below 21 years of age.

Table 3: Community Perceptions on Jakun Traditional Knowledge (n=100, May 2007)

Description	Diminishing traditional knowledge (%)	Intergenerational difference in traditional knowledge (%)	Community members still practicing customs (%)
No response	2.0	3.0	3.0
Yes	95.0	70.0	80.0
No	3.0	27.0	17.0
TOTAL	**100.0**	**100.0**	**100.0**

Seventy percent of the respondents indicated that there is an intergenerational difference in traditional knowledge. The responses from the household questionnaire and observation in the field indicate a poor grasp of traditional knowledge amongst the younger generation. Although 80% of the Jakun of Kampung Simpai still practice their customs, these practices do not cover the full spectrum of practices in the Jakun tradition. The analysis of cultural resilience in this study shows that the Jakun practice only 53% of their traditional practices. Therefore, the Jakun are losing their traditional knowledge, with the younger generation failing to acquire the knowledge of their elders. The cultural resilience analysis also showed that the practice of the Jakun customs becomes further diluted from one generation to the next (Savinder, 2008).

The Contributory Factors for Loss of Traditional Knowledge of the Jakun

In view of the intergenerational difference in traditional knowledge, a perception survey using the Pebble Distribution Method (PDM) was conducted to understand the phenomenon of loss of traditional knowledge from the perspective of the younger generation. The PDM was stratified according to gender to gauge any gender differences in acquiring the Jakun traditional knowledge.

Table 4: Gender Comparisons of Perceptions of Simpai Jakun Youth on Reasons for Loss of Traditional Knowledge (IK) (May 2007)

Reasons for loss of IK	Female (%)	Male (%)	Overall (%)
Ashamed of practicing the old ways	0	3	1
Afraid to learn	3	3	2
Influence of other religions	3	0	3
Intermarriage	6	0	3
Not enough time	3	5	4
Disbelief in the formless	4	5	4
Too difficult (gave up)	5	6	5
Parents disallow/do not support	5	11	6
Loss of land	6	9	6
Modernisation	9	2	8
Other external influences	10	4	8
Formal education	9	9	9
Not interested	13	10	11
Loss of forests (resources)	10	18	13
Elders didn't pass down knowledge	15	16	15
TOTAL	**100 (n=16)**	**100 (n=14)**	**100 (n=30)**

Elders Not Transmitting Knowledge to the Young

The major contributor to the intergenerational difference in knowledge revealed from the PDM survey was the lack of transmission of knowledge from the older to the younger generation (15%) (Table 4). Female youth attributed the loss of their knowledge primarily (15%) to their elders whom they blamed for not transmitting the knowledge to them. One female teenager, Adilah, exclaimed, "*We ask the elders, but they always reply that children don't have to know these things, this is meant only for adults"*. Male youth also concurred with the female youth that the elders not passing their knowledge on to the next generation was a vital reason (16%) for their being unable to practice their traditions due to lack of knowledge.

This is not a new phenomenon in the village as the study noted similar trends amongst the older generation. The breakdown in transmission of shamanic knowledge from the older to the younger generation was mainly attributed to the elders not wanting to teach the younger generation. The elders claimed that the demise of shamanic knowledge was because of the refusal or inability of their forefathers to pass the knowledge to the younger generation. Therefore, the older generation of the present day who were the victims of the past are guilty of the same misdeeds which they have accused their elders of, continuing the erosion of traditional knowledge by disrupting knowledge transmission to the younger generation.

Deforestation/Loss of Land

Forest related knowledge is an important and basic knowledge of the Jakun (Skeat, 1902). The Jakun usually refer to the forests as their source of knowledge. The household questionnaire survey revealed that the older generation cited the diminishing forest resource base as the major contributor to the intergenerational difference in knowledge. The lack of resources has affected many aspects of traditional life, such as gathering, weaving/basketry, house building and healing. However, the youth ranked this reason as the second contributor to loss of knowledge (13%) in the PDM survey (Table 4). The male youth concurred with the village elders as they placed the highest

importance (18%) on the loss of forests as the primary reason for their being unable to acquire their traditional knowledge whereas female youth placed less importance on this reason (10%).

Though much of the deforestation is due to logging, the Jakun community of Kampung Simpai themselves are responsible for converting the peat swamp forests within their reserved land to plant oil palm. In a perception survey conducted by DANIDA in 1998, 74% of the Jakun surveyed prefer the utilisation of peat swamp forests for oil palm cultivation (Lim, Woon & Parid., 1999). Thus, since 1997, a total of 388.5 ha of forested land (stateland peat swamp forests) and succession forests were converted to oil palm in the village during the first three phases of the commercial replanting scheme, i.e. the Tanam Semula Komersial (TSK) (Table 5). A further 200 ha, which is stateland forests will be converted to oil palm under Phase 4 of the TSK in Kampung Simpai. Thus, the local communities are part of the problem which is the major contributor to the loss of their knowledge.

Table 5: Land Developed for Community Oil Palm in Kampung Simpai

Phase	Year	Land Area (Hectares)
Simpai Phase 1	1997	116.5
Simpai Phase 2	2000	136.0
Simpai Phase 3	2000	136.0
TOTAL		**388.5**

Source: JHEOA Pahang, 2005

Lack of Interest amongst the Youth

An important impact arising from the decreased transmission of knowledge from the older to the younger generation is decreased interest in acquiring this body of knowledge. The PDM survey revealed that youth of both sexes lack the interest to learn their traditional knowledge, which was cited as the third reason for the lack of

traditional knowledge among the youth (11%) (Table 4). Female youth placed slightly more importance on this reason (13%) than the male youth (10%). The youth questioned the usefulness of traditional knowledge and since they are unable to practice it, they developed other interests.

It can be argued that the lack of interest to acquire traditional knowledge stems from the lack of exposure to the forests by their parents, which is traceable to the loss of forests. The lack of interest is not a new phenomenon in the village. It was already prevalent in the older generation who themselves did not show much interest in acquiring the knowledge from their forefathers.

Formal Education

Formal education (9%) was cited as the fourth reason for loss of knowledge by both sexes in the PDM survey (Table 4). The male youth allocated 5% importance on lack of time compared to the female youth who allocated 3% for their inability to acquire their traditional knowledge. Formal schooling is connected to the lack of interest amongst the younger generation in going into the forest and for the decline in forest related knowledge. Village children do not follow their parents to the forests on weekdays, as they have to attend school.

Apart from looking at the time constraints in acquiring traditional knowledge, an analysis of the impacts arising from education was conducted. Field observations noted that education changes the perceptions of the Jakun on their traditional way of life. Schools encourage the young to pursue higher ideals in life, ideals that can only be found in cities and in pursuits linked to the market economy. The traditional way of life is no longer attractive and ceases to be a necessity in life. The Jakun children develop other priorities in life, and develop a craving for life beyond the confines of their village. Therefore, once educated, the Jakun youth do not go to the forests as they prefer to engage in wage earning outside the village, e.g. in watermelon farms and factories.

Modernisation (Growth-Oriented Paradigm)

Modernisation was also cited as a reason why the knowledge of the Jakun is on the decline with 9% of the female youth and 2% of the male youth citing this reason respectively (Table 4). The traditional lifestyle of the Jakun has changed from a subsistence economy to wage earning (Lim, Woon & Parid, 1999). These changes were also observed among the Orang Hulu of Endau, (who are actually Jakun from Johor) even in the 1960s (Tachimoto, 2001). These changes have resulted in the Jakun migrating outside of the village for wage labour, abandoning traditional resource management systems (Lim, Woon & Parid, 1999). The attraction of huge sums of cash income from the logging industry resulted in local men placing less importance on swiddening in favour of logging. The local community began to participate in logging activities during the logging era in the 1980s and 1990s. As a result, paddy planting, an activity steeped with rituals and traditions (which the Jakun themselves find difficult to practice) virtually ceased in Kampung Simpai by 1998 (Lim, Woon & Parid, 1999). By the early 1990s, cash crops such as pineapple and rubber gained more importance (Lim, Woon & Parid, 1999). Subsistence-based activities serve as merely subsidiary activities. Therefore, traditional knowledge on paddy planting and other knowledge related to resource management has diminished since the advent of the market economy.

Female youth placed more importance on modernisation as a threat to their knowledge systems. This can be attributed to the decline of status of the Jakun women in community decision-making (Razha & Wazir, 2001). Traditionally, Orang Asli societies were egalitarian communities where gender is concerned (Razha & Wazir, 2001; Howell, 2006). Orang Asli men and women enjoyed the same social rights and respected each other as equals. The roles changed when Orang Asli men began to embrace wage-earning activities while the Orang Asli women continued to concentrate on subsistence work within the household (Howell, 2006). The high wage-earning power of men created a socio-economic disparity within the household which eventually extended to the community, thus reducing the social status of women (Howell, 2006). The knowledge and power inequality within the Jakun community which comes with modernisation has a greater effect on Jakun women as, in the past

women could control matters related to culture and tradition but now, with changing values, their control has been severely eroded, leaving them unable to speak up and take affirmative action to maintain their traditional knowledge, which is now seen as the sole domain of men.

Lack of Parental Support

Forest knowledge is often associated with frequency of visits to the forest. From the household questionnaire survey, the older generation asserts that the younger generation does not frequent the forests as much as their predecessors did. The adults recalled that in the past, children followed their parents into the forest, but lamented that they are not interested in doing so anymore, claiming that the forests are no longer important to the youth. Field observations indicate a breakdown in communication between the generations, with one generation stereotyping the other. Some parents expect their children to ask them to teach them about the ways of the forest and if they do not, the parents blame them as lazy, weak and frivolous. The lack of parental support (11%) was cited as the third cause for the loss of knowledge of the male youth in the PDM survey (Table 4).

Intermarriage/Influence of Other Religions

The household questionnaire survey results revealed that the influence of mainstream religions on the Jakun is minimal as the majority of the Jakun, i.e. 94% still practice animism. Only 3.6% of the Simpai population belongs to the mainstream religions, such as Islam and Christianity. Male youth did not cite the influence of mainstream religions or intermarriage as reasons for the loss of traditional knowledge amongst youth (Table 4). Nonetheless, this study noted some concerns of the female youth in terms of intermarriage and religious conversion. The PDM survey on female youth shows that female youth placed more importance on intermarriage (6%) and the influence of other religions (3%) as reasons for loss of their traditional knowledge compared with the male youth. Field observations noted that three Jakun women ended up marrying Indonesian labourers, who are predominantly Muslim, indirectly granting

them permanent residence in Malaysia. They embrace their husbands' religion once they marry. Hence, Jakun women are more vulnerable to the influences of intermarriages and mainstream religions than their male counterparts, which is a significant difference in terms of gender differences in loss of traditional knowledge.

Diminishing Belief in Spirits

Many of the adults surveyed concurred that the younger generation does not respect the forests and Jakun traditions. They attributed this to the diminishing belief in the spirits and their traditions. As one elder puts it, "*The youth don't believe in the spirits as nothing untoward has happened to them. In the past, they had incidents of* sampuk *(possession by spirits), but since it hasn't happened to them yet, they stop believing.*"

The Jakun associate high spiritual activity with dense undisturbed forests Those who do not believe in the spirits remarked that they no longer feared the spirits as in the past, there were vast tracts of forest and that these spirits dwelled in the forests. Once the forests are disturbed or cleared, they rationalize that the spirits no longer dwell there as these spirits have a strong affinity with forests. Now that the forests are slowly being replaced by oil palm, they feel that the spirits are no longer around. With the spirits gone, they have no fear of breaking taboos.

Conclusions

This study revealed that the Jakun do have environmental ethics which is useful in maintaining biodiversity. Their environmental ethics is nonetheless based on fear of retribution from spirits or of losing their sustenance, i.e. a highly anthropocentric environmental ethic. This is opposed to the common notion of indigenous peoples as possessing a biocentric environmental ethic which compliments the principles of the deep ecology paradigm. These peoples do not consider the moral standing of the elements of nature, but are extremely pragmatic and opportunistic in their forest

harvesting practices. Therefore, their motivation to conserve their forests as displayed by the prevalence of their environmental ethic is not based on altruism, but fear, which is a weak basis for any environmental ethic. If the community ceases to believe in spirits, ceases to depend on natural resources or if they are unable to derive benefits from the forests, then it is highly unlikely that the community will be interested in conserving the peat swamp forests in the region.

Another dimension of this study is analysing the forces which impinge on the Jakun knowledge system which can have dire consequences on biodiversity. The major contributors for the erosion of the traditional knowledge of the Jakun of Kampung Simpai are poor transmission of knowledge from the older generation the loss of forests. The decline and knowledge difference between the older and younger generations is the result of detachment of the young Jakun from their forests. The research showed that the Jakun, though aware of the phenomena of loss of knowledge are not taking responsibility for the loss, with one generation blaming the other for the loss. The older generation is continuing the vicious cycle of non-transmission of knowledge which has already resulted in a glaring lack of interest in the traditions and customs of the Jakun amongst the youth. The women in the village are particularly vulnerable to hegemonic forces such as religious conversion through intermarriages with non-Jakun or Jakun who have renounced their animistic faith. The growth-oriented mindset which is more prevalent among the male members of the community has resulted in loss of knowledge because of abandonment of traditional resource management systems in favour of wage work and cash cropping. The knowledge and power inequality within the Jakun community which comes with modernisation has a greater effect on Jakun women as in the past, women could control matters related to culture and tradition but now, with changing values, their control has been severely eroded, leaving them unable to speak up and take affirmative action to maintain their traditional knowledge.

In conclusion, since the Jakun environmental ethics is anthropocentric in nature, any conservation agency which wants to engage the Jakun as partners in conservation should take into consideration the motivation of the Jakun to conserve their resources, i.e. security of sustenance. Therefore, it is recommended that the Jakun

should be given continued access and autonomy of their forests for any conservation initiative to be successful to avert any fear of losing their sustenance. Also, the Jakun cultural diversity and attachment to forests should be maintained by protecting them from hegemonic forces which serve to erode their culture. The government recognition of traditional knowledge as a valid body of knowledge which is relevant to maintaining biodiversity can help to contain the loss of traditional knowledge. Efforts to ensure continued transmission of traditional knowledge from the older to the younger generation is necessary to maintain the link between the younger generation and their forests, such as empowering marginalised sectors of the Jakun society, especially women in order to enable them to participate in the preservation of their culture and knowledge systems. In the final analysis, conservation initiatives with the Jakun should be aimed at addressing the root causes which erode their traditional knowledge, i.e. deforestation and the emphasis on material development of the Jakun without regard for cultural diversity if conservation is to be successful with the Jakun.

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