

Highland Teenagers: Their Understanding and Practice Towards Water Ecology

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Abstract: Unlike most places in this modern world, most of the rural highlands are not accessible to the basic infrastructures like water, electricity or internet. For the inhabitants, natural sources like rain, good soil or forest are the god's gifts that need to be treated fairly. This study looks at the understanding and practice of the teenagers in the highland in one of the most remote areas in Malaysia towards the water ecology. A survey was carried out among the 102 teenagers who are still remaining in the highlands. The findings reveal that the teenagers have a good understanding and practice towards the water ecology. Even most of respondents are not aware the written law pertaining the aquatic life they treat the subject matter as something to be treasured and precious in their life.

Key words: Highland, teenagers, understanding, practice, water ecology

INTRODUCTION

The ubiquity of water pollution in 21st century Malaysia despite rapid advancement in various areas of science and technology is an undeniable and deplorable reality. Urban expansion leading to environmental deterioration due to the clearing of large areas of land to accommodate increasing number and sizes of towns and cities as well as a surge in the amount of waste generated contributed significantly to this detestable phenomenon. The lack of awareness and active concern for the condition of the water sources in Malaysia, especially the freshwater sources which we rely heavily on as our main supply for tap and drinking water. This occurrence alludes to mismanagement of water resources thus preventing 20% of the global population from accessing safe drinking water and 40% from basic sanitation (Arnold *et al.*, 1998). Therefore, it is imperative that we recognize the detrimental effects of human activities towards our ecosystem in addition to identifying the causality relationship between them.

While, we possess the might of science and technology there is still much to learn when it comes to caring for the environment. The local tribes live in an isolated area called Bario located in a highland near to the international border of Kalimantan, Indonesia. It is the focal and vital group of this study and becomes the perfect example which demonstrates an equilibrium coexistence with the environment and the surrounding

natural landscape. The conservative interaction between these rural tribes and their natural environment untainted by the negative influences of rogue modernization and urbanization substantiates the poor governance of our environment.

Literature review: The indigenous local tribe people living in Bario highlands treat their natural surroundings, especially the forest, a lot differently than modern urban citizens. The community treats the forest as a single being rather than as an assemblage of many distinct beings in addition to perceiving the forest as a source of life force with many different inhabiting spirits capable of delivering retribution (EEA, 2016). The researchers added that although most have embraced Christianity and no longer believe in the supernatural dogmas, their deep spiritual connection to the forest is still very much intact. Furthermore, they also stated that there is no clear boundary which separates the land into distinct areas of ownership, meaning that wild resources of the land are shared among the community; a far cry from the prevailing and domineering materialism which exists in our society today. However, the nomadic lifestyle of the indigenous local tribe community as isolated as they are in the highlands, cannot escape the mandatory interactions with our modern civilization. For many generations they have always obtained their resources from their immediate surroundings which required skills and experience to

transform raw materials into practical uses before expansion of commercial logging exposed their traditional life style with modern civilization. While the industrial development around their community would benefit them by introducing roads through the forest and connecting them to the nearest towns, the purity of the natural environment surrounding their villages is tarnished by pollution. In hindsight this event reflects our incompetence when it comes to managing and preserving the pristine environment around us.

In contrast to the consumption of the indigenous local tribe community, consumption of Malaysians is far more ostentatious and unsustainable due to the income escalation following the thriving economy and bustling development (Engel *et al.*, 2013). They added that the consumption oriented lifestyle Malaysians practice caused a surge in the amount of waste generated and exacerbated disposal efficiency and the toll on the environment. This behaviour reflects the irresponsibility of Malaysians when it comes to moderation and environmental sustainability, especially in the advent of rapid urbanization and economic growth. Furthermore, the lack of environmental knowledge as investigated by the authors and its influence on the consumers environmentally conscious behaviours disregarding the effects of habit significantly impact their consumption practices. This widespread naivete is not surprising when the level of environmental knowledge among school students is alarming (Hering *et al.*, 2010).

Those ingrained habitual practices among Malaysians have adversely affected our main sources of raw water in the environment. These appalling phenomena has affected rivers in many states including Selangor, Penang and Malacca. Moreover, the Department of Environment Malaysia (2015) reported that only a little over half of the rivers monitored were clean. Some of the major sources of river pollution include sewage treatment plants, food services establishments and manufacturing industries as well as overexploitation of forests and land grazing due to rapid urbanisation (Arnold *et al.*, 1998). That said, it is not surprising that unregulated river pollution caused shortage of clean water and incur high costs for water rationing exercises (Arnold *et al.*, 1998).

United Nations (2015) found that individual backgrounds and physical characteristics do not have tangible influence over sustainable consumption or pro-environmental behaviours. Having said that green consumption could be affected by perceptions towards product quality and marketing claims, difficulties in identifying green products and pricings, lack of ethical

values and at a more intellectual level, low levels of environmental knowledge needed to encourage active participation in environmentally friendly activities (Arnold *et al.*, 1998; Sala *et al.*, 2013; United Nations, 2015). Hence, it can be said that inaccurate and ineffective marketing and business strategies as well as disinterested Malaysians towards environmental knowledge are some of the defining hurdles in instilling sustainable consumption and active care for Malaysian rivers and subsequently, the environment.

Background: The highlands in this study is located above 100 m from sea level consisting of about a dozen villages. The population is approximately 5000 people. They are the tribe people. Somehow because of the missionary movement, most have faith in God. Some are still pagan. Farming and hunting are major careers. Trekking from longhouse to longhouse through the jungle and past the rice fields is the biggest attraction of this area somehow they are still some who practicing two main nomadic life.

Clinic, hall, airport, tele center for internet access and computer services, churches, school (primary and lower high school) and police station are the basic infrastructures provided by the government. Most children have to go to town for secondary education which contributes to small numbers of teenagers. Moreover, fresh water is scarce around the area because of the geological factors. There is a river not far from the area. Besides there is no waste disposal center and basically the waste is either burn or buried.

MATERIALS AND METHODS

The methods used in this descriptive study, total number of 150 highland teenagers were randomly approached in order to achieve the study goal. Out of that number, 102 gave their responses. Demographic variables, understanding and practice of highland teenagers understanding towards water ecology and sustainable life style are the instrument of the survey consisted of two study. The key variables in this study were measured by a self-report questionnaire. Demographic characteristics of gender and age are included in the first part of the instrument. The sustainable life style part contained two parts: understanding (16 statements) and practice (17 statements) with a three points scale indicating how they agree or disagree with the Likert scale statement from 1 (very disagree) to 5 (very agree). In order to analyze the collected data about the levels of

understanding and practice of highland teenagers towards water ecology, Microsoft Excel was used as computer software. In other words, it is to represent any differences in their understanding and practice of ecosystem of flora and fauna (USEPA, 2015a, b).

Research questions: This study seeks to investigate the level of understanding, attitude and practices of sustainable transportation among school leavers in Malaysia. It is hoped that this study will provide the answers for the following research questions:

- What is the understanding of highland teenagers towards water ecology?
- What is the practice of highland teenagers towards water ecology?

RESULTS AND DISCUSSION

Table 1 shows the Highland teenagers and their understanding towards the water ecology. Amongst the items was throwing garbage into rivers can contribute to water pollution, 50% out of 102 respondents strongly agree that the act contributes to water pollution 25 or 24.5% strongly disagree, 4 respondents or 3.9% disagree, 8 people or 7.8% not sure and 14 or 13.7% agree about the matter. The majority of the highland teenagers 46 respondents or 46% strongly agree that human activities can lead to water pollution while 36.3% agree, 7.8% said they are not sure, 6.9% disagree and 2.9% strongly disagree. Answering the question “Do you realize the importance of protecting aquatic life?”, 71.6% of the respondents (73 respondents) said that they strongly understand the importance of protecting aquatic life while 21.6% of the respondents said that they understand the matter and 6.9% of the respondents said they are not

sure about the matter. The 42.2% out of 102 highland teenagers strongly agree that catching threatened aquatic life can affect the water ecology, 29 respondents or 28.4% agree, 12.7% are not sure and 12.7% disagree, 3.9% strongly disagree (Vannevel, 2013).

Responding to the the question “Is it wise to save the marine life?”, 43 out of 102 respondents (59.8%) strongly agree, 32.4% agree while 6.9% of them were not sure about the discussion. When asked whether using pesticides can threaten aquatic life, 31 respondents or 30.4% strongly agree that pesticides will threaten the aquatic life, 35 (34.3%) agree, 30 (29.4%) are not sure and 5.9% either disagree (2%) or strongly disagree (3.9%) about that. When the highland teenagers were asked whether they realize that they play an important role in the conservation of threatened species, only 4% of them said they do not realize or totally didn’t realize their role while others said they strongly understand, understand or not sure about their important role with the result, respectively as 43.1, 29.4 and 23.5%. Finally, majority of the highland teenagers (74.5% of respondents) said they are strongly not aware of the existence of law that protect flora and fauna while others also said they are not aware of the mentioned law, 23.5% (Volk, 2013).

Table 2 shows the teenagers practices towards water ecology. When highland teenagers are asked whether they thrown rubbish into the river or not, minority (5.9%) said that they always do so while 75.5% of them said “sometimes” and 18.6% never do so. Moving on to next question: 20 of them said that they always collect rubbish in the river if they spot any, 52 said they do so sometimes and 30 people never do that. Answering the question “Have you ever caught endangered fishes?”, 77.4% said they have never caught endangered fishes while 5.8 and 15.8% of the responses said they are always or sometimes they do so, respectively. The 73.5% of the

Table 1: The understanding of highland teenagers towards water ecology

Items	Result (percentile)				
	Strongly disagree (%)	Disagree (%)	Not sure (%)	Agree (%)	Strongly agree (%)
I know throwing the garbage into rivers can contribute to water pollution	25 (24.5)	4 (3.9)	8 (7.8)	14 (13.7)	50 (50.0)
Human activity can lead to water pollution	3 (2.9)	7 (6.9)	8 (7.8)	15 (36.3)	46 (46.0)
I know catching threatened aquatic life can affect the water ecology	4 (3.9)	13 (12.7)	13 (12.7)	29 (28.4)	43 (42.2)
It is wise to save the marine life	1 (1.0)	0 (0.0)	7 (6.9)	33 (32.4)	60 (59.8)
I know my practice can reduce the stability of ecosystems in the river	4 (3.9)	2 (2.0)	30 (29.4)	35 (34.3)	31 (30.4)
I must have a sense of responsibility to release the catch of endangered and threatened water species	3 (2.9)	1 (1.0)	16 (15.6)	29 (28.4)	52 (51.9)
I am aware of the existence of laws to protect water species that are being threatened	0 (0.0)	1 (1.0)	1 (1.0)	24 (23.5)	75 (74.5)

Table 2: The practice of highland teenagers towards water ecology

Items	Result (percentile)		
	Always (%)	Sometimes (%)	Never (%)
Have you ever thrown rubbish into the river?	6 (5.88)	77 (75.50)	19 (18.63)
When you spot any rubbish in the river, would you collect it?	20 (4.90)	52 (26.40)	30 (68.70)
Have you ever caught the extinct fish?	6 (5.88)	16 (15.69)	80 (78.43)
Have you ever thrown rubbish or plastic into the river?	5 (4.90)	22 (21.57)	75 (73.53)
Have you littered the river with your facet?	4 (3.90)	27 (26.47)	71 (69.60)
Have you ever used dangerous bait or poison when fishing?	12 (11.70)	39 (38.20)	51 (50.10)
Have you ever used dangerous poison when fishing?	22 (21.55)	26 (25.50)	54 (52.90)
Do you share your caught with others?	61 (59.80)	32 (31.40)	9 (8.80)
Have you ever seen any individuals caught or killed the extinct water lifes?	13 (12.70)	31 (30.40)	58 (56.90)
Have you ever seen any individuals used poison, electric when fishing?	11 (10.80)	37 (36.30)	54 (52.90)

teenagers claimed that they have never thrown rubbish or plastic into the river compared to 21.5% (sometimes) and 5% (always). The 50.1% out of 102 respondents claim that they have never used dangerous bait or poison to fish, 38.2% (sometimes) while 11.7% (always). The 59.8% or 60 out of 102 of the highland teenagers always share their caught with others, 31.4% or 32 teenagers sometimes and 8.8% never share with others. Among the group, 12.7% or 13 people said they always see people catching/killing exotic animals, 30.4% said they see that sometimes compared to 56.9% of them have never seen anyone catching or killing exotic animals. Lastly, 76 respondents or 75.5% the teenagers said they have never seen anyone using poison or explosives to catch fish while 16.7% of them said they have seen that but not so frequent and 7.8% of them said they have seen that all the time (Wiek *et al.*, 2011).

It is very interesting to see how the young people from an isolated area which is far from the most of the urbanization treating environment, water ecology in particular. From the study, the teenagers from the highland have a very positive attitude which can be measured in terms of practice and understanding. Through the observations, most of the people do understand that human activities such as throwing garbage into rivers can lead to the water pollution. Highland teenagers strongly understand about saving the marine life from the catching threatened aquatic life by using pesticides which can affect the water ecology, however there are still some people are still catching.

Supported that “the lack of environmental knowledge as investigated by the researchers and its influence on the consumers environmentally conscious behaviors disregarding the effects of habit significantly impact their consumption practices”. Moreover, states that the consumption oriented lifestyle Malaysians practice caused a surge in the amount of waste generated and exacerbated disposal efficiency and the toll on the environment. Hence, the lack of environmental knowledge influences the consumers behaviors and although majority of the local tribe were not strongly aware the

existence of law to protect flora and fauna they do understand about the importance of protecting aquatic life (Worley and Parker, 2011).

According to EEA, 2016, the local tribe in Bario treat the forest as a single being rather than as an assemblage of many distinct beings in addition to perceiving the forest as a source of life force with many different inhabiting spirits capable of delivering retribution. Environment resources of the land are shared among the community. They accept that there is no clear boundary which separates the land into distinct areas of ownership, however in terms of practice, local tribe community are practicing well the environmental sustainability. They are aware of throwing rubbish or plastic into the river can lead to the water pollution and the highland teenagers collect rubbish in the river if they spot any. They have sense of responsibility to release the catch of endangered and threatened water species. The tribe community are aware of water ecology and environmental sustainability although it is an isolated area from the modern urban citizens. This tribe activities in a way actually has the prolong effects to their youngsters to foster the same attitudes in conversing the environment as a part of their life. The issue that the teenagers are not really aware of the laws or regulations pertaining the reservation and protection of the environment is not serious because even in a modern world, it is normalcy to have such attitudes amongst the youngsters. This behaviour is totally against the most irresponsibility of Malaysians when it comes to moderation and environmental sustainability, particularly in the start of hasty development and economic growth. All in all, the modern people can learn from the teenagers of this highland how they treat and respect the water ecology.

CONCLUSION

It is undeniable that we are facing rapid urbanization with undeterred detrimental side effects towards our environment and subsequently, the rivers in Malaysia. It is imperative that we identify the factors influencing our

negligent behaviour towards the environment in our country when the indigenous Kelabit people seem to integrate with the natural environment so seamlessly. The solution to such a detrimental behaviour is also another pressing matter which needs to be addressed swiftly before any further damage is inflicted upon the natural environment be it intentionally or unintentionally. Lack of environmental management despite the knowledge we have amassed stemmed from our materialistic life styles and ignorance towards environmental ethics is slowly wiping out the green future we imagined for the future generations. Therefore, the connection which the Kelabit people have with the environment is relevant to our cause towards sustainable consumption and proper waste management for healthier rivers and environment. In short, consumer education is extremely crucial to ensure a sustainable environment and quality of life through proactive government policies and campaigns to encourage a paradigm shift towards instilling a more responsible consumption behaviour.

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