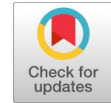


The Influence Of Bonai Tribal Remote Indigenous Community Knowledge On The Environment



Suparman, Zulfan Saam, Achmad Hidir, Suwondo

Abstract: *Empowerment of isolated and vulnerable communities in saving and preserving the environment is one of the development goals. Awareness of the communities plays an important role in saving and preserving the environment. The awareness cannot be separated from the level of knowledge about various things related to the environment itself. Knowledge that someone has may affect his/her attitude and behaviour. However, some people in the isolated and vulnerable communities do not know how to keep the environment clean and how to clear their land. Furthermore, some of the people do not care about their environment. This study aims to analyse environmental knowledge of Bonai ethnic isolated and vulnerable community of Rokan Hulu Regency of Riau province. Data of the study are collected from questionnaires, interviews and document analysis related to environmental knowledge of the isolated and vulnerable community. The method used in this study is the descriptive quantitative-qualitative method that describes the level of environmental knowledge of the community by using quantitative data. The technique used to analyse the data is the percentage technique. Then, the data are qualitatively interpreted. The research findings reveal that the environmental knowledge of Bonai community does vary in terms of gender, age, education level and profession. The isolated and vulnerable community status has a significant correlation to environmental knowledge of the community. In conclusion, the level of knowledge of Bonai isolated and vulnerable community belongs to the low category.*

Index Terms: *environmental knowledge, isolated and vulnerable communities*

I. INTRODUCTION

Bonai Rantau Binuang Sakti is a social community categorized as a Level 1 of Isolated and Vulnerable Community. The community lives by shifting cultivation, likes living by a river, and earns a living by fishing. People of the community seldom interact with other communities. They usually interact with others if and when they sell fish and buy primary food supplies. The isolated and vulnerable

community spread out in Rokan Hulu regency is an indigenous community, called Bonai ethnic. The origin of Bonai ethnic is not known for sure since no relics from historical records are found regarding the ethnic. It is written in a folklore that the community was established by two Sultans; Sutan Harimau and Sutan Janguik who derived from South Tapanuli. The term of address of Sultan, in the community changed into 'Sutan'. When the sultans arrived at Kampung Bonai (Bonai village), Sontang, Torusan Puyuh, Titian Gadiang, Toluk Sono and Sungai Murai for the first time, Sutan Harimau ordered one person to live in each village. The villages had been inhabited by another ethnics, Sakai before the sultans came there. Day by day, the villages develop more and more. Some people deriving from the villages also migrated to a neighbouring country, Brunei Darussalam.

Regarding the habit of Rantau Binuang Sakti people, interview with the village chief on September 7, 2016 reveals that a lot of people in the community are accustomed to burning waste and doing land clearing by burning. Some of them even do not care about environment cleanliness. Head of Rokan Hulu Regency Social Service affirmed that Government had endeavoured to empower the community. However, some of them log a lot and sell it to sawmills. Some of them also like ensnaring birds. Based on the description presented above, the formulation of the problem is how is the environmental knowledge of Bonai ethnic isolated and vulnerable community of Rokan Hulu regency?

The concept of development is usually in line with an innovation. Development is defined as a planned change. Anyone dreams changes resulting in better condition than that of before. To make the dream comes true, a good plan is highly required. Development planning is considered as a more rational and more required for undeveloped and developing communities (Subandi: 2011).

Meanwhile, pengetahuan (knowledge), in Kamus Pusat Bahasa (a dictionary published in 2005 by the Indonesian Language Center) can be broadly defined as everything that is known. This is in line with the statement of Suriasumantri (2003) that knowledge is all what we know about a particular object. In addition, Notoadmodjo in Priyto (2003) reassured that knowledge is the result of knowing after doing sensing on a particular object. Sensing occurs through the human five senses; the sense of sight, hearing, smell, taste and touch. Most human knowledge is obtained through the eyes and ears.

Manuscript published on 30 September 2019.

*Correspondence Author(s)

Suparman, The Student of Environmental Science, Graduate Program, University of Riau Pekanbaru, Indonesia

Zulfan Saam, The Student of Environmental Science, Graduate Program, University of Riau Pekanbaru, Indonesia

Achmad Hidir, The Student of Environmental Science, Graduate Program, University of Riau Pekanbaru, Indonesia

Suwondo, Lecturer of Environmental Science, Graduate Program, University of Riau Pekanbaru, Indonesia

© The Authors. Published by Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP). This is an [open access](https://creativecommons.org/licenses/by-nc-nd/4.0/) article under the CC-BY-NC-ND license <http://creativecommons.org/licenses/by-nc-nd/4.0/>

The equivalence of the word environment in Indonesian is lingkungan. In Kamus Besar Bahasa Indonesia (a dictionary published by Badan Pengembangan dan Pembinaan Bahasa), the word lingkungan means semua yang memengaruhi pertumbuhan manusia atau hewan (anything that influences human or animal life). Furthermore, General Encyclopedia, environment includes people in social life that affect human as a member of society in their life and culture. (Amos Neolaka, 2008).

Human environmental awareness is possibly inseparable from the level of knowledge about environment and attitudes about various things related to the environment. A person's knowledge will indirectly affect his attitude or behaviour. In this regard, Fishbein and Ajzen (1975) said that knowledge is the basis for forming beliefs into consideration to determine attitudes, while knowledge is a collection of information recorded in a person's memory.

Communities in sociology perspective are citizens who live in a certain area that can be distinguished from the wider community (society), community members through a community of interest and interaction. Community members also share needs between one another (common needs). Sharing needs is the characteristics of a community (Jim Iffe, 1995).

Elements of community sentiment include; (1) a feeling of belonging together. This element enables someone to identify him/herself with as many people as possible in the group, so that all of them can name themselves as "our group", "our feelings", etc. (2) a feeling of belonging to a group. This element refers to individual's awareness of group and the condition of the community itself that allows his/her role in the group to play so that he/she do believes that he/she has a definite position, and (3) mutual needs. This element refers to any individuals in a community that feel that they depend on their "community". The need includes both physical and psychological needs (Nasdian.F.T, 2014).

In accordance with President of Indonesia Decree Number 111 of 1999 regarding Isolated and Vulnerable Community Social Development, Isolated and Vulnerable Community is defined as socio-cultural group that belongs to a local community and dispersed and not involved in networks, social, economic and political services. The community lives in a very simple way of life and keeps his tradition well. People of the community live in a more economic subsystem by doing economic activities to fulfil their daily needs. The characteristics of the community are; (1) people of the community usually establish a small, closed and homogeneous community, (2) social institutions of the community is based on kinship relations, (3) people of the community geographically live in remote and isolated areas, (4) they live with economic subsystem, (5) they use a simple technology, (6) they highly depend on the environment and natural resources, and (7) access to social, economic and political services of the community is limited. Several questions asked to respondents of the study regarding knowledge and attitudes of the Bonai community towards their environment. Data of the study are collected from a questionnaire in which the answer of the questions are multiple choices. The options of the answers given are taken from the Likert scale; Strongly Agree, Agree, Disagree and Strongly Disagree. 14 variables are used to measure

environmental awareness of Bonai isolated and vulnerable community. They are (1) Burning waste shall pollute air, (2) Planted tress shall make air fresher (3) The increase of carbon dioxide element in the atmosphere shall make the temperature of the earth heat up (4) Allowing water to flow without using it is a kind of water wastage (5) Households need to provide water absorption areas (6) Saving electricity shall save energy, (7) Turning off electronic devices when not in use is an attempt to save electricity, (8) Using public vehicles when traveling shall save fuel, (9) Maintaining vehicles shall protect the environment, (10) Protected animals must not be kept by individuals and parts of the animals' body must not be for sale, (11) Consuming local food shall save fuel, (12) Protected plants must not be kept, owned and for sale, (13) Plastic waste, food waste, paper waste and other garbage have to be sorted out before disposal, and (14) Waste which contains chemical substance shall be buried (Ministry of Environment RI: 2013). qualitative data are used. This research was carried out in Rantau Binuang Sakti village, Kecamatan Kepenuhan (Kepenuhan subdistrict), Rokan Hulu regency, Riau province. The population of this study are all of head of the isolated and vulnerable community family of Bonai ethnic in Rantau Binuang Sakti village, Kepenuhan subdistrict in which the number is 52. All population is used a sample of this research. In order to collect the data, the researcher used the questionnaire technique by compiling a list of questions that had passed a validity test. In addition, the researcher also used the documentation technique as secondary data, collected data by examining, studying and analysing the data from several written documents related to the isolated and vulnerable community of Bonai ethnic. Validity and reliability tests were done to confirm that the data were valid and reliable.

The percentage technique was used to analyse the environmental knowledge of the Bonai isolated and vulnerable community. After that, environmental knowledge of every respondent was analysed. This analysis is presented in a cross tabulation and the chi-square analysis between environmental knowledge and characteristics of respondents.

II. RESEARCH FINDINGS

The Characteristics of Respondents by Gender and Age

The characteristics of the respondents by gender and age are presented in the following table:

Table 1. Characteristics of Respondents by Gender and Age

Gender	Age			Total
	< 25 years	25 - 40 years	> 40 years	
Male	3.85 %	50.00 %	26.92 %	80,77 %
Female	3.85 %	9.62 %	5.77 %	19,23 %
Total %	7,69 %	59.62 %	32.69 %	100.00 %



Table 1 shows that the characteristics of the respondents by gender and age is dominated by male respondents aged of 25-40 years 2 in which the percentage is 50%. The respondents of the research derived from Bonai ethnic isolated and vulnerable community are adults and considered to have been able to answer questions well. In addition, the percentage of the respondent of 40 years and more is 32%, So, they are considered eligible to give clear information needed to be answered in the questionnaire.

The Characteristics of Respondents by Education Background and Marital Status

The characteristics of respondents by education background and marital status are presented in the following table:

Table 2. Characteristics of Respondents by Education Background and Marital Status

Education Background	Marital Status			Total
	Single	Married	Widow/ Widower	
SD	1.92 %	75.00 %	3.85 %	80,77 %
SMP	0.00 %	5.77 %	0.00 %	5,77 %
SMA	0.00 %	13.46 %	0.00 %	13,46 %
Total %	1.92 %	94.23 %	3.85 %	100.00 %

Table 2 shows that the characteristics of respondents by education background and marital status is dominated by married respondents who graduated from elementary school. The percentage is 75%. Education of the Bonai community belongs to a low category in which more than 80% of them graduated from elementary school. Such condition implies that education development of the isolated and vulnerable community runs slowly. In addition, Table 2 also shows that 94% of the respondents is married. So, such percentage describes that people in the community who are married graduated from elementary school only. Meanwhile, most of the single marital status of the respondents are students of elementary school.

Characteristics of Respondents by Length of Residence and Number of Family Members

The characteristics of respondents by Length of Residence and Number of Family Members are presented in the following table:

Table 3. Characteristics of Respondents by Length of Residence and Number of Family Members

No	Number of Family Member	Percentese	Length of Residence
1.	1 (one)	3.85 %	More than 10 years
2.	2 (two)	15.38 %	More than 10 years
3.	3 (three)	15.38 %	More than 10 years

4.	4 four)	7.69 %	More than 10 years
5.	5 (five)	9.62 %	More than 10 years
6.	>5 (more than five)	48.08 %	More than 10 years
Total		100 %	

Table 3 presents the distribution of respondents by Duration of Domicile and Number of Family Members. The table shows that all respondents of Bonai isolated and vulnerable community had lived in the community for more than 5 years in which the number is 48%. Furthermore, the table also shows that 48,08% of respondents have more than 5 family members or more than 3 children in their family to feed. The table also shows that in general the respondents have a large number of persons in their family. The large number, consequently, contributes to the big number of populations in the Rantau Binuang Sakti village, Kepenuhan subdistrict, Rokan Hulu regency.

Characteristics of Respondents by Profession and the Amount of Monthly Income

The characteristics of respondents by profession and amount of monthly Income can be in the following table:

Table 4. Characteristics of Respondents by Profession and the Amount of Monthly Income

Profession	The Amount of Monthly Income (Rp)				Total
	< 500,000	500,000 - 1,000,000	1,000,000 - 2,500,000	> 2,500,000	
Farmer	1.92	9.62	32.69	1.92	46.15
Fisherman	0.00	11.54	30.77	0.00	42.31
Public service	0.00	0.00	3.85	0.00	3.85
Labor	0.00	3.85	0.00	0.00	3.85
Others	0.00	1.92	1.92	0.00	3.85
Total %	3,85	25.00	69.23	1.92	100.00

Table 4 presents the characteristics of respondents by the amount of monthly income and of the respondents. The table shows that farmer is a profession that spread across all of the amount of income category range from lower than Rp.500,000 to more than Rp.10,000,000. Meanwhile, respondents deriving from a fisherman profession, private service workers, and labours tend to belong to the middle category, which is Rp.500,000 to Rp.2.500.000. The highest amount of monthly income is obtained by respondents deriving from farmer profession. It can be seen from the type of vegetable farmer's work to the perennial's farmers.

The analysis on Bonai environmental knowledge can be seen in the following table:

Table 5. Environmental Knowledge of Bonai Isolated and Vulnerable Community

Indicators	Alternative Answers			
	Agree	Partly Agree	Disagree	No Idea
1	32.69	0.00	1.92	65.38
2	86.54	0.00	0.00	13.46
3	1.92	0.00	0.00	98.08
4	26.92	5.77	0.00	67.31
5	3.85	0.00	0.00	96.15
6	15.38	0.00	0.00	84.62
7	15.38	0.00	0.00	84.62
8	1.92	0.00	0.00	98.08
9	1.92	0.00	0.00	98.08
10	40.38	0.00	3.85	55.77
11	0.00	0.00	3.85	96.15
12	38.46	1.92	3.85	55.77
13	0.00	0.00	3.85	96.15
14	1.92	0.00	1.92	96.15
Total	19.09	0.55	1.37	78.98

In Table 5, the data are analysed by using the percentage technique in which the percentage is 19.92%. Based on the percentage, the environmental knowledge of the Bonai community belongs to a low category. Regarding the first variable *"Burning waste shall pollute air,"* most of respondents (65,38%) answered "No idea." This finding reveals that most of people of Bonai isolated and vulnerable community do not know that air will be polluted if they burn waste. A survey held in the community shows that many people of the community still burn waste at their home. Burning the waste is done by both people who know that burning waste shall pollute air and people who do not. Such condition shows that environmental awareness of air pollution due to burning of waste is very low.

Environmental knowledge about the third variable *"The increase of carbon dioxide element in the atmosphere shall make the temperature of the earth heat up,"* most of the respondent or 98,08% of them answered they had no idea. This finding reveals that the Bonai people in Rantau Binuang Sakti Village, Kepenuhan Subdistrict, Rokan Hulu do not understand and do not know that the increase of carbon dioxide element in the atmosphere shall make the temperature of the earth heat up. In addition, a survey carried out in the community shows that the Bonai people do not know the terms of carbon dioxide and atmosphere.

In addition, the community also does not understand the cause of the increase in carbon dioxide in the atmosphere since they do not concern with the impact of the burning of waste and land clearing.

Dealing with the environmental knowledge about the fourth variable *"Allowing water to flow without using it is a kind of water wastage,"* 67,31% of the respondents answered "No idea". This finding reveals that 67.31% of the Bonai people in Rantau Binuang Sakti village, Kepenuhan subdistrict, Rokan Hulu regency do not understand and do not know that allowing water to flow without using it is a kind of water wastage. A survey held on the community shows that most of the Bonai people are negligent in using water so that water is wasted. Such negligence take place due

to a lack of understanding of the importance of water saving and assuming that water is easy to get.

Regarding the environmental knowledge about the fifth variable *"Households need to provide water absorption areas,"* most of the respondents or 96.15% answered "No idea." This finding reveals that 96.15% of the Bonai people in Rantau Binuang Sakti Village, Kepenuhan Subdistrict, Rokan Hulu Regency do not understand and do not know that households need to provide water absorption areas. A survey held on the community also shows that most of the Bonai people do not realize the importance of water absorption areas. They also argue that the amount of water is so abundant that they need no water absorption areas.

Dealing with the environmental knowledge about the sixth variable *"Saving electricity shall save energy,"* most of the respondents or 84,62% answered "No idea." This finding reveals that 84,62 the Bonai people in Rantau Binuang Sakti Village, Kepenuhan Subdistrict, Rokan Hulu Regency do not understand and do not know that saving electricity shall save energy. A survey held on the community also shows that some of them switch off lamps late in the morning.

Regarding the environmental knowledge about the seventh variable *"Turning off electronic devices when not in use is an attempt to save electricity,"* most of the respondent or 84.62% answer "No idea." This finding reveals that 84.62% of the Bonai people in Rantau Binuang Sakti Village, Kepenuhan Subdistrict, Rokan Hulu Regency do not understand and do not know that turning off electronic devices when not in use is an attempt to save electricity. A survey held on the community also shows that some of the Bonai people switch television on but they do not watch it. They also do the same thing on radio and other electronic devices.

Dealing with the environmental knowledge about the eighth variable *"Using public vehicles when traveling shall save fuel,"* most of the respondents or 98.08% answered "No idea." This finding reveals that 98.08% of the Bonai people in Rantau Binuang Sakti Village, Kepenuhan Subdistrict, Rokan Hulu Regency do not understand and do not know that using public vehicles when traveling shall save fuel. A survey held on the community also shows that some of them do not know the significant correlation between using public transportation and saving fuel. Most of them argued using own vehicles is more flexible when traveling than public transport. In addition, they argue that their own vehicles could reach areas that public transport could not do.

Regarding the environmental knowledge about the ninth variable *"Maintaining vehicles shall protect the environment,"* most of the respondents or 98.08% answered "No idea." This finding reveals that 98.08% of the Bonai people in Rantau Binuang Sakti Village, Kepenuhan Subdistrict, Rokan Hulu Regency do not understand and do not know that maintaining vehicles shall protect the environment. A survey held on the community also shows that most of Bonai people did not know that there is a close relationship between vehicle maintenance and environment protection. In addition, some of the people argue that a vehicle needs no maintenance or service as long as it works.

If there is something wrong with their vehicle, say for instance, the vehicle does not work, then the vehicle will be serviced. Maintenance is seldom done since it costs a lot and the cost is considered burdensome.

Dealing with the environmental knowledge about the tenth variable "*Protected animals must not be kept by individuals and parts of the animals must not be for sale,*" 55.77% of the respondents answered "No idea." This finding reveals that more than a half of the Bonai people in Rantau Binuang Sakti Village, Kepenuhan Subdistrict, Rokan Hulu Regency do not understand and do not know that protected animals must not be kept by individuals and parts of the animals' body must not be for sale. As a result, most of them still believe that protected animals are naturally owned for the benefit of the local community without thinking about the sustainability of these animals. However, 40.4% agree with this rule.

Regarding the environmental knowledge about the eleventh variable "*Consuming local food shall save fuel,*" most of the respondents or 96.15% answered "No idea" and 3.85% of the respondents agree with this statement. This finding reveals that 96.15% of the Bonai people in Rantau Binuang Sakti Village, Kepenuhan Subdistrict, Rokan Hulu Regency do not understand and do not know that consuming local food shall saving fuel. Consuming local food will certainly help people save fuel that is owned by the community. It also enables people to promote consuming food available by their own community.

To analyse the environmental knowledge of Bonai isolated and vulnerable community, a cross tabulation and the chi-square analysis on environmental knowledge and the characteristics of the respondents is presented. A cross tabulation between the environmental knowledge and gender of the Bonai community is seen in the following table:

Table 6. Cross Tabulation between Environmental Knowledge and Gender

No	Gender	Environmental Knowledge		Total	Chi-Square	
		Low	Middle		Value	Sig
1.	Male	79.6 %	100 %	80.8 %	0.758	0.384
2.	Female	20.4 %	0.0 %	19.2 %		
Total		100 %	100 %	100%		

Table 6 presents the cross tabulation between environmental knowledge and gender. The table shows that in general, the male respondents have higher environmental knowledge than the female respondents have. The table also depicts that 79.6% of the male respondents has the low environmental knowledge while only 20.4% of the female has the low environmental knowledge. Furthermore, it can be seen that 100% of the male students have fair environmental knowledge while 0% of the female respondents have middle environmental knowledge. Known that value of sig on the chi-square is 0.384, where the sig value is (0.384 > 0.05). So, H₀ is accepted. The acceptance means that there is no significant relationship between the environmental knowledge and the gender.

A cross tabulation between age and environmental knowledge can be seen in the following table.

Table 7. Cross Tabulation between Environmental Knowledge and Age

No	Age	Environmental Knowledge		Total	Chi-Square	
		Rendah	Sedang		Value	Sig
1.	< 25 Years	8.2 %	0.0 %	7.7 %	0.272	0.873
2.	25 – 40 Years	59.2 %	66.7 %	59.6 %		
3.	> 40 Years	32.7 %	33.3 %	32.7 %		
Total		100%	100 %	100 %		

Table 7 presents the cross tabulation between environmental knowledge and age. The table shows that respondents of <25 years old that has low environmental knowledge is 8.2%, of 25-40 years old is 59.2% and of > 40 years old is 32.7%. The table also shows that respondents of <25 years old that has middle environmental knowledge is 00%, of 25-40 years old is 66.7% and of > 40 years old is 33.3. Known that value of sig on the chi-square is 0.873, where the sig value is (0.873 > 0.05). So, H₀ is accepted. It means that there is no significant relationship between the environmental knowledge and the age.

A cross tabulation between environmental knowledge and marital status can be seen in the following table.

Table 8. Cross Tabulation between Environmental Knowledge and Marital Status

Knowledge and Marital Status						
No	Statu s	Environmental Knowledge		Total	Chi-Square	
		Low	Middl e		Value	Sig
1.	Singl e	0.0 %	33.3 %	1.9 %	16.71 2	0.000
2.	Marr ied	95.9 %	66.7 %	94.2 %		
3.	Wido w/Wi dowe r	4.1 %	0.0 %	3.8 %		
Total		100, %	100, %	100, %		

Table 8 presents the cross tabulation between environmental knowledge and marital status. The table shows that respondents of single status that has low environmental knowledge is 0.0%, of married status is 95.9% and of widow/widower is 4.1%. The table also shows that respondents of single status that has middle environmental knowledge is 33.3%, of married status is 66.7% and of widow/widower is 0.0%. Known that value of sig on the chi-square is 0.000, where the sig value is (0.873 < 0.05). So, H₀ is rejected. The rejection means that there is a significant relationship between the environmental knowledge and marital status.

A cross tabulation between environmental knowledge and education level can be seen in the following table.

Table 9. Cross Tabulation between Environmental Knowledge and Education Background

No	Education Background	Environmental Knowledge		Total	Chi-Square	
		Rendah	Sedang		Value	Sig
1.	SD	79.6 %	100 %	80.8 %	0.758	0.685
2.	SLTP	6.1 %	0.0 %	5.8 %		
3.	SLTA	14.3 %	0.0 %	13.5 %		
Total		100. %	100. %	100. %		

Table 9. Cross Tabulation between Environmental Knowledge and Education background

Table 9 presents that cross tabulation between environmental knowledge and education background. The table shows that respondents of elementary school graduation single that has low environmental knowledge is 79.6%, of junior high school graduation is 6.1% and of senior high school graduation is 14.3. The table also shows that respondents of elementary school graduation that has middle environmental knowledge is 100%, of both of junior high school graduation and senior high school graduation is 0.0% and of widow/widower is 0.0%. Given that value of sig on the chi-square is 0.685, where the sig value is $(0.685 > 0.05)$. So, H_0 is accepted. The acceptance means that there is no significant relationship between the environmental knowledge and education level the respondents.

A cross tabulation between environmental knowledge and profession can be seen in the following table.

Table 10. Cross Tabulation between Environmental Knowledge and Profession

		Environmental Knowledge		Total (%)	Chi-Square	
No	Profession	Low (%)	Middle (%)		Value	Sig
1.	Private Service	6.1	0.0	5.8	0.232	0.890
2.	Farmers	67.3	66.7	67.3		
3.	Others	26.5	33.3	26.9		
Total		100	100	100		

The table shows that respondents of private service that has low environmental knowledge is 6.1%, of farmer is 67.3% and of other professions is 26.5%. The table also shows that respondents of private service that has middle environmental knowledge is 0.0%, of farmer is 66.7% and of other professions is 33.3%. Given that value of sig on the chi-square is 0.890, where the sig value is $(0.890 > 0.05)$. So, H_0 is accepted. The acceptance means that there is no significant relationship between the environmental knowledge and profession of the respondents.

A cross tabulation between environmental knowledge and economic condition can be seen in the following table.

Table 11. Cross Tabulation between Environmental Knowledge and Economic Conditions

No	Economic Condition (Rp)	Environmental Knowledge		Total (%)	Chi-Square	
		Low	Middle (%)		Value	Sig
		(%)	(%)			
1.	< 500,000	4.1	0.0	3.8	2.987	0.398
2.	500,000 – 1,000,000	22.4	66.7	25.0		
3.	1,100,000 – 2,500,000	71.4	33.3	69.2		
4.	>2,500,000	2.0	0.0	1.9		
Total		100	100	100.		

Table 11 presents a cross tabulation between environmental knowledge and economic conditions. The table shows that respondents of < Rp.500,000 monthly income that has low environmental knowledge is 4.1%, of Rp.500,000 to Rp.1,000,000 is 22.4%, of Rp.1,100,000 to Rp.2,500,000 is 71.4%, and of >Rp.2,500,000 is 2.0%. The table also shows that respondents of < Rp.500,000 monthly income that has middle environmental knowledge is 0.0%, of Rp.500,000 to Rp.1,000,000 is 66.7%, of Rp.1,100,000 to Rp.2,500,000 is 33.3% and of >Rp.2,500,000 is 0.0%. Given that value of sig on the chi-square is 0.398, where the sig value is $(0.398 > 0.05)$. So, H_0 is accepted. The acceptance means that there is no significant relationship between the environmental knowledge and economic conditions of the respondents.

III. DISCUSSIONS

In general, awareness of the Bonai people of their environment is low. The behaviour of the Bonai people in general shows that their awareness of environment is low. Increasing the public awareness can be done by empowering the community through intensive community awareness training and intensive and sustainable counselling. There is a positive relationship between knowledge about ecosystems and environment-oriented behavior (Ramdany, 2018). The low environmental knowledge of the isolated and vulnerable Bonai community affects the ability of the community to save their environment. The low level of environmental knowledge is caused by the low frequency of dissemination on environment held by Government. So far, counselling focuses more on health issues such as dengue fever, malaria, polio, and avian influenza.



On the other hand, the dangers of waste and what to do to save the environment is seldom informed to community (Setyowati, 2013). Forest, for the community, is considered not only a source of natural resources to earn a living but also a source to fulfil their socio-cultural needs, health, and healing of illnesses and diseases. Forest has a close relationship with medical practices, both herbs and or ritual way of illness healing and people belief that forest is both a source of disease and means of healing illnesses and diseases. This belief rises to efforts and traditions of forest conservation. This perspective further strengthens the tradition of forest preservation (Humaedi, 2013).

The level of environmental knowledge of Bonai isolated and vulnerable community both male and female is low. However, some male respondents have middle environmental knowledge even though the percentage is low, that is 7% of the sample.

The level of environmental knowledge of Bonai isolated and vulnerable community of <25 years old, 25-40 years old and > 40 years of the respondents is low. However, some male respondents of 25-40 years old and > 40 years have middle environmental knowledge even though the percentage is low, that is 6-6% of the sample.

The level of environmental knowledge of Bonai isolated and vulnerable community of single, married and widow/widower respondents is low. However, some married respondents have a middle level of environmental knowledge even though the percentage is low, that is 4% of the sample.

The level of environmental knowledge of Bonai isolated and vulnerable community of elementary, junior and high school is low. However, few respondents of elementary school graduation have a middle level of environmental knowledge. It can be seen from the percentage that reaches 7% of the sample.

The level of environmental knowledge of Bonai isolated and vulnerable community of private service, farmer and other professions is low. However, few farmer respondents have middle level environmental knowledge even though the is still low, that is 6% of the sample.

The level of environmental knowledge Bonai isolated and vulnerable community of respondents of < Rp.500,000, 500 thousand - 1 million, 1.1 million - 2.5 million and > 10 million monthly income is low. However, few respondents of Rp.500,000 to Rp.1,000,000 monthly income have middle level of environmental knowledge. The percentage is 18% of the sample is available.

Lifestyle, demands for agricultural land and environmental balance, are classic problems related to environmental damage in developing countries, which depend on depend on agrarian sector. A few cases, such as shifting cultivation and forest encroachers, are often unavoidable (Hijiang, 2005). The shifting cultivation carried by the community, regardless of the frequency, is still considered to cause problems for sustainable forest management since the management system requires a fixed area of stands. Shifting cultivation activities will eliminate some of the stands, both those that have not been or have been cut down. In shifting cultivation, land is cleared by cutting all trees, shrub and anything and burning them. Reducing the productive area will certainly disrupt the sustainability trees and any things grow and lives in a forest. Shifting cultivation is easy to do but it has a huge effect on damage to forests. This cultivation really needs forested land dominated by large trees and shrubs to be cleared. After being cut down during the peak of the dry season, everything in a

forest is burned without being hoed or furrowed. The land is commonly planted with rice, corn or other food crops. The land might be replanted once again if it is considered fertile. However, It will be abandoned if it is considered infertile and searching for new land for shifting cultivation continues (Effendi, 2007).

Good knowledge in environmental management is obtained from various sources such as experience, as well as printed media, radio and television which have a major influence in framing opinions and beliefs. New information provides a cognitive bases for knowledge enhancement. Lack of knowledge on waste might be influenced by lack of information and dissemination. Such condition may occur as training, counselling and any activities provided for the Bonai community focused more on health education such as dengue fever, malaria, avian influenza, and polio. However, information about the harmful effects of waste that is not managed properly is very little conveyed to the community. The little information makes awareness of the Bonai people to manage plastic waste low (Setyowati, 2013). One of the recommended actions to establish the character of the community in saving the environment is that parents, teachers and the community shall be familiar with the concepts of value to establish the character of children in saving the environment (Hartoyo, 2010).

Educational factors have implications on the paradigm of the environment. It is believed that there is a significant correlation between the awareness of environment and environmental knowledge for sustainable development. The correlation indicates that environmental awareness has similarities with the educational paradigm for sustainable development.

This implies that education for sustainable development can be carried out through education to care for the environment (Priyanto Y. 2013).

The social community; in a family, school or community environment plays an important role and has responsibility for the establishment of the character of an environmental awareness. The social community that applies environmental awareness in daily life, either consciously or unconsciously, can make a person care about the environment (Tamara. RM, 2016).

IV. CONCLUSIONS

Based on the research findings, it can be concluded that the environmental knowledge of the Bonai isolated and vulnerable community of Rokan Hulu regency belongs to the low category. Gender, age, education level, kinds of profession and the amount of monthly income do not have a significant correlation with environmental knowledge of the respondents. However, the characteristics of respondents that is related to environmental knowledge is the marital status.

REFERENCE

1. Amos Neolaka. 2008. Kesadaran Lingkungan. Rineka Cipta, Jakarta.
2. Departemen Sosial R.I. 2003. Keputusan Presiden Republik Indonesia Nomor 111 Tahun 1999 tentang Pembinaan Kesejahteraan Sosial Komunitas Adat Terpencil. Jakarta.



3. Effendi, R. 2007. Kajian Pola Pola Pemberdayaan Masyarakat Sekitar Hutan Produksi Dalam Mencegah Illegal Logging. Jurnal Penelitian Sosial dan Ekonomi Kehutanan Vol. 4 No. 4 Desember 2007.
4. Fishbein, M & Ajzen, I. 1975. Belief Attitude, Intention, and Behaviour, Reading, Mass; Addison, Wesley.
5. Hartoyo, A.A. 2010. Potensi Pembinaan Karakter Berbasis Budaya Masyarakat. Jurnal Pendidikan Sosisologi dan Humaniora. Vo. 1 No. 1 April 2010. Universitas Tanjungpura. Pontianak.
6. Hijjang, P. 2005. Pasang dan Kepemimpinan Ammatoa: Memahami Kembali Sistem Kepemimpinan Tradisional Masyarakat Adat dalam Pengelolaan Sumberdaya Hutan di Kajang Sulawesi Selatan. Jurnal Antropologi Indonesia. Vol. 29, No. 3, 2005. Universitas Hasanudin.
7. Humaedi, M.A. 2013. Tradisi Pelestarian Hutan Masyarakat Adat Tau Taa Vana di Tojo Una-Una Sulawesi Tengah. Jurnal Penelitian Hutan dan Koservasi Alam. Vol. 11 No. 1, April 2014: 91-111. Pusat Penelitian Kemasyarakatan dan Kebudayaan Lembaga Ilmu Pengetahuan Indonesia. Jakarta
8. Ife, Jim. 1995. Community Development: Creating Community Alternatives, Vision, Analysis and Practice. Longman. Australia.
9. KemenLH-RI. 2013. Perilaku Masyarakat Peduli Lingkungan (Survei KLH 2012). Jakarta.
10. Nasdian, F.T. 2014. Pengembangan Masyarakat. Jakarta; Yayasan Pustaka Obor Indonesia.
11. Proyanto, Y. 2013. Pendidikan Berperspektif Lingkungan Menuju Pembangunan Berkelanjutan Environmental Perspective Education Towards Sustainable Development. Jurnal Wacana Vol. 16 No. 1 Tahun 2013.
12. Ramday, D. 2018. Hubungan antara Pengetahuan Ekosistem, Locus of Control dan Kecerdasan Naturalis dengan Pro Environmental Behavior Masyarakat Grogol Petamburan. International Journal of Educational and Environmental Education (IJEEM) DOI : doi.org/10.21009/jgg.032.04 Vol.3 No. 2 Juli 2018.
13. Setyowati, R. 2013. Pengetahuan dan Perilaku Ibu Rumah Tangga dalam Pengelolaan Sampah Plastik. Jurnal Kesehatan Masyarakat Nasional Vol. 7, No. 12, Juli 2013. Fakultas Kesehatan Masyarakat Universitas Ahmad Dahlan Yogyakarta.
14. Subandi. 2011. Ekonomi Pembangunan. Bandung; Alfabeta.
15. Suharsimi Arikunto. 1992. Prosedur Penelitian: Suatu Pendekatan Praktek. Edisi Revisi. Rineka Ciptra, Jakarta.
16. Suriasumantri & Jujun, S. 2003. Filsafat Islam Sebuah Pengantar Modern. Jakarta; Pustaka Sinar Harapan.
17. Tamara, R.M. 2016. Peranan Lingkungan Sosial Terhadap Pembentukan Sikap Peduli Lingkungan Peserta Didik di SMA Negeri Kabupaten Cianjur. Jurnal Pendidikan Geografi. Volume 16 No. 1 April 2016. UPI.
18. Tim Penyusun Kamus Pusat Bahasa. 2005. Kamus Besar Bahasa Indonesia. Balai Pustaka dan Depdiknas. Jakarta.