

Reflection of an environmental ethics education based on local wisdom in the kampung adat Cikondang of Bandung regency against environmental conservation and sanitation

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Abstract. The existence of the environment is the responsibility of all walks of life in maintaining and supporting the sustainability of human life in the world. This research aims to study the reflection of environmental ethics education based on local wisdom in the Kampung Adat Cikondang (KAC) Pangalengan (Bandung Regency) on environmental conservation and sanitation. The research method used is descriptive qualitative. The study included the background of indigenous peoples, customs and tradition, rule and prohibitions, and environmental ethics. Community respondents were selected based on purposive sampling, namely the community (60 people) aged between 18-50 years. Data were obtained using interview instruments and field observation notes. Based on the result from the respondents (100%) said that the knowledge about environmental conservation and sanitation are received mostly from elder people. This information are inherited through next generation. This has a positive impact on the behavior of KAC people in managing the environment. It is hoped that local wisdom-based environmental education can be an example for people in other villages thus increasing a sense of environmental stewardship. For the general public, it is expected to bring up motivation to protect the environment by understanding the local wisdom in the KAC.

1. Introduction

Indonesia faces the threat of decreasing environmental quality including global climate change. This is Indonesia's concern which is manifested in the Agenda 21 and is followed by a planned Agenda in the Republic of Indonesia's Sustainable Development Goals (SDGs) for the 2016-2030 period. These businesses are listed in National Goal No. 13 TPB, which is taking quick actions to address climate change. Related to climate change is the problem of global warming followed by rising temperatures on the surface of the earth. Climate change and global warming are caused by forest fires [1,2], high transportation [3,4] and organic waste [5]. These activities may increase greenhouse gases (CH₄, CO₂ and other gases) in the air. Although the government has policies and solutions in an effort to reduce global warming and climate change, people need to care about this problem too.

Environmental education is one alternative effort to teach the people become aware in protecting the environment. There are two education processes, formal and informal education. The informal education at home are important as a basic environmental education which is begins in early year [6]. The informal education puts emphasis upon the fact that through participation in daily life activities.

An area's local wisdom towards the environment can lead to a sense of community concern for the environment. This sense of care is passed on to the next generation to form an attitude. In addition, local wisdom can form a mental or mindset and daily behavior. According to [7] local wisdom is all forms of knowledge, beliefs, understanding or insight as well as customs or ethics that guide human behavior in life in the ecological community. The formation of these attitudes can occur one of them because of the socio-cultural factors that exist in a community's residence, especially among indigenous peoples who are still thick social and cultural [8]

Local wisdom of the community is very important in protecting the environment. Some examples of the results of research conducted on the Kajang Ammatoa Sulawesi [9] and Aga Tenganan Pegringsingan Bali [10]. The results of the study show their attitude in protecting the environment based on customs and traditions.

Indonesia, which has 34 provinces, is very rich in customs, culture, traditions and local wisdom of the people. KAC is selected in this study, although research on KAC were studied before. Tradition [11], environmental landscape [12], ethnopharmacy [13] and Ethnopedagogy [14] of KAC were studied. In this paper the environmental knowledge of KAC people in maintaining environmental conservation and sanitation is studied.

KAC is one of the traditional villages located in Bandung Regency with a distance of about 38 km from the Capital of West Java. This village has been around for around 200 years. Administratively [11] the KAC area is located in Lamajang Village, Pangalengan District, Bandung Regency. North side is bordered by Sukamaju Village, Cimaung Subdistrict. The South is bordered by Gunung Tilu Protection Forest and Pulosari Village, Pangalengan Subdistrict. The East is bordered by Cisangkuy River, Cikalong Village and Tribhakti Village. The West is bordered by Sukamaju Village and Mekarsari Village, Pangalengan Subdistrict.

2. Method

This research used a qualitative approach in order to describe environmental conservation and sanitation in KAC Bandung. The sampling technique used was purposive sampling [15]. Data collection was done by semi-structural interviews and field observations. The items including KAC community background, customs and traditions, rules and prohibitions in KAC community traditions, environmental ethics were interviewed. This interview is to learn that informal education based on local wisdom may shape environmental ethical attitudes related to forest conservation and environmental sanitation. Meanwhile field observation is done in order to get clarification of data obtained from interview. Those data collection techniques are done to obtain a lot of information related to environmental conservation and sanitation in the KAC. Respondents included 60 KAC people aged 18-50 years and residing in the Cikondang Pangalengan traditional village of Bandung Regency. The people ranged 18-50 years old are interviewed, because of limited number of KAC people. Data were collected in January-February 2019.

3. Result and Discussion

The results of the interview data collection include: KAC community background, customs and traditions, rules and prohibitions in KAC community traditions, environmental ethics and KAC conditions as a result of the reflection of the KAC community's environmental ethical attitude.

3.1. KAC community background

The KAC community background covers social, belief, economic levels and education. These information are obtained from the respondent interviews. Briefly, the KAC community background are compiled in Table 1.

Table 1. The description of community background.

Description of KAC community	
Social	The number of family leader are 173 people. The social level of the KAC community shows good community relationship. The relationship between the Cikondang traditional management community and the surrounding community is shown by the mutual cooperation in holding events in the village or traditional events. So that harmony and togetherness between the communities around Cikondang and the Cikondang traditional apparatus are maintained. Not all communities have a role in customary instrument. Only people who have a lineage from customary instruments can be a part of existing equipment. But the role of individuals is more a supporting part of each customary activity carried out. Because almost all traditional activities are all followed by all residents both customary or residents around Cikondang.
Belief	The status of the KAC community's beliefs all embrace Muslim religious beliefs. KAC traditional ritual activities carried out with elements combination of Islam and Sundanese culture.
Economic levels	An economic aspect of the Cikondang community has been able to build the village economy. This can be seen from the work of the Cikondang community as farmers, entrepreneurs and traders. Almost all people work as farmers, because it is supported by the existence of a large area and suitable for agricultural land. The products from agriculture are rice, vegetables and fruits.
Education	The educational background status of the community in KAC only reaches the elementary school (SD) and Madrasah Tsanawiyah (MTs) levels. As for the senior secondary level there are no schools in KAC, so the community must leave the village to receive senior secondary education. Formal environmental education was obtained at the time of schooling in elementary and MTs. Besides formal education. Non-formal education is carried out by way of inheritance by ancestors to parents and then to children. Inheritance of knowledge provided in the form of traditional rituals, rules, beliefs, and customs-related restrictions on the environment. Environmental education is not directly given in the classroom. In general, knowledge is obtained from parents, a small portion is obtained from schools, daily activities and elders. This pattern is found in many indigenous communities. Informal inheritance of informal knowledge like this also occurs in the Baduy tribe community [16] and the community of the village of Sinar Resmi about ethnobotany knowledge [17] Inheritance of knowledge through three informal channels namely parents / family, elders and peers is also found in the Indigenous People of Ciptarasa in terms of environmental sanitation, ethnoecology, agricultural ethnobotany and ethnobotany knowledge [18,19, 20,21].

3.2. The customs and Tradition

The customs and traditions carried out by the KAC community are related to the Islamic religion. The ritual activities carried out by the KAC community are related to the environment. Common traditions include *Solokan* ritual and Wuku Taun Ceremony. *Solokan hajit* ritual is a ritual performed by the Cikondang people once a year. This ritual shows gratitude for the abundance of water given and asks the almighty that the Cikondang traditional village does not experience drought. While the *Wuku Taun* Ceremony is a ceremony done by the community to give thanks for the favors that were obtained last year. During this ceremony residents contributed to one another for all the needs of the event. The mothers do the cooking process together so that mutual cooperation between residents is maintained. In the food dish there are typical foods including *opaque*, *tek-tek*, and other processed food foods. There are also white, black and gray chickens. These types of chicken colors have meaning for them. The

existence of a white chicken menu has a meaning of a positif thinking. Black chicken has a meaning that we are responsive and always do good. While the gray chicken symbolizes the greedy attitude that must be avoided. All of these foods are eaten together after the *belug* has finished. *Belug* is the art of sound tricks that exist in traditional events in the traditional village of Cikondang.

3.3. Rules and prohibitions in the tradition of the KAC community

There are some rules and prohibitions (Table 2) that are not written in the tradition of the KAC community and are still carried on from generation to generation. In addition to the rules and restrictions, there are also customary laws. Customary law is an unwritten punishment. but rather the community's belief that every individual must protect the environment and must not damage it. The KAC community strongly believes that those who damage the environment will receive punishment from their ancestors. Various rules and prohibitions are well understood by the community as guidelines for daily life and part of customary provisions. This makes the KAC community obedient to the customary rules they have agreed upon. There are two places that are considered to be highly considered by the community, namely the prohibited forest and traditional houses. The prohibited forest is a forest that is guarded by *adat* in the Cikondang village, it is said that according to public belief if anyone enters the prohibited and destructive forest, then that person will get lost (dazed) and cannot get out of the forest. The punishment that will be received by the community besides customary punishment. Government has a rule as well. The punishment is in the form of fines or prison. However, people are afraid of punishment which is a traditional myth.

Table 2. Rules and prohibitions that have become a tradition for KAC communities

No.	Rules and restrictions
1	Communities must not take wood in the forest forbidden to build houses
2	The community must not take firewood in the forest forbidding cooking
3	The community must not throw garbage into the river
4	People should not wash clothes in the river
5	The community must not bathe in the river
6	People hunt pigs that are considered pests in the forest
7	The community must not catch birds in the prohibited forest
8	The community takes the garbage that is on the road and throws it in the trash
9	Must not damage the environment
10	Replanting (reforestation)
11	Must not pollute the environment
12	The customary area is opened on Monday, Wednesday, Thursday and Sunday
13	Menstruating are prohibited from entering traditional areas
14	Forest prohibition may only be visited by people who are Muslim
15	Entering a prohibited forest area may not wear footwear

3.4. Environmental Ethic

The environmental ethics studied here is limited to conservation and environmental sanitation. The level of awareness and concern of the KAC community towards environmental conservation is an attitude of environmental ethics. The attitude of environmental ethics is evidenced by the results of observations on environmental conservation and sanitation. The KAC community generally takes care of the environment, because almost all of them work as farmers. In everyday life farmers are very close to nature and assume that nature provides life for them. Therefore, they really protect the natural environment so that damage does not occur. This opinion was also expressed by [22] in her research in the villages of *Adat Kasepuhan*. Furthermore, local wisdom seeks to protect the environment and natural resources that feed and the sustainability of ecosystems can provide benefits for people's lives [23]. The KAC community is also aware of the prohibition of logging and punishment from *adat*, because the forest is a source of life for the KAC community. The ethical attitude of the KAC community is shown

by the obedient attitude in protecting the forest that has been determined by the customary leader and the ancestors.

The community respects the environment very much, they also manage the environment by planting forests which they think have started to be damaged. Forest ban is still very beautiful. Because it is always preserved, no one can take anything from the forest prohibiting animals or plants, whether living or dead, except for customary interests. Farmers have a sense of dependence on the existence of water. The abundant amount of water is a reflection of the forests which are protected by their beauty. Forests can also avoid landslides. In the rainy season the Cikondang area is not affected by landslides [11]. Even water sources can be used optimally for agriculture. Whereas in the dry season the KAC community does not worry about lack of water. Because rainwater infiltration can be maintained with the forest around KAC. The availability of clean and abundant water is evidence of the success of environmental conservation that has been carried out by the KAC community in a sustainable manner. As [24] and [25] stated that forest ecosystems serve water retention and it is generally believed that deforestation increases the frequency and severity of floods.

While the level of environmental sanitation is seen from how to use water wisely, waste water treatment and solid waste treatment. The water sources used by the KAC community are water sources from the spring water of Tilu Mountain and Ciruntah. The water source is channeled to the village and community houses using pipes and some are accommodated in reservoirs. The storage tub is 4x4 meters in size. The cleanliness of the reservoir is done periodically and in a mutual cooperation about 1 month 1 time. The water that is flowed is used for daily needs, namely for bathing, cooking and washing. It can be seen that the community cares about the cleanliness of the water in the reservoir, namely by maintaining sanitation, water hygiene. As mentioned, that mountainous waters are cleaner and their flow is more constant [26].

KAC people always protect water sources from pollution, use water wisely and manage waste water before entering water bodies. With the prohibition of bathing and washing in the river, the community considers that the river is a place where running water must be maintained. Because river water will irrigate rice fields, gardens etc., so that river water must be kept clean. Whereas household wastewater (organic) which is produced, is discharged into holding ponds. Then flowed into the gutter. The gutter water then flows into the irrigation of rice fields, gardens etc. Wastewater is not directly used for the purposes of rice fields and gardens, but wastewater undergoes a deposition process first in a holding pond. If people dispose the liquid waste directly into the gutter, there is a reprimand from other communities This wastewater treatment is also carried out by the community of the Adat Sinar Desa Sukabumi District official [27]. The local people belief that the wastewater may recover for period of time before flowing to the agriculture land. Self-purification process may occur naturally in flowing water, as long as no other chemical pollutants present [28].

Another ethic that is shown by the KAC community is in terms of regulating solid waste. Solid waste generated by the community is dumped in the garbage collection bin. Then the waste is separated between organic and inorganic waste, organic waste is usually recycled to fertilize the farming area. While other rubbish is disposed of at a landfill or garbage bank for further sorting. Another effort by the community is reduce the use of plastic. Plastic waste is already a national issue related to environmental sustainability because plastic waste is dangerous and difficult to manage [29]. The community is aware and can distinguish between organic and non-organic waste. By reducing the use of plastic. This characterizes the community about caring the environment.

4. Conclusion

The Cikondang community is one of the indigenous peoples who upholds the customary rules that apply in their area. The customary rules that apply in Cikondang are able to protect the natural environment. Because nature is a part of people's lives in this world. The good attitude of the KAC community towards the environment, can be seen with the existence of a sacred forest, clean water and traditional ceremonies that make the environment a gratitude towards God Almighty. The attitude of caring for the environment

has been embedded in the community. They have an environmental ethic education. They learn from informal education as a result of hereditary inheritance from elders.

5. References

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