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Local Wisdom-based Environmental Education through *Kikigaki* Method: Japan Experience and Lesson for Indonesia

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Abstract. Environmental education become very important today because beside as an effort to preserve natural environment, as well as the efforts to save local wisdom and culture related to environmental preservation. Environmental education is not only can be done through formal learning at school as well as the extension and training, but also through a social approach by learn the existing local wisdom that had proven capable of maintain and preserve the environment from generation to generation. A techniques also began to be developed in Japan, called *kikigaki*, to pass down the knowledge of environmental conservation from the older generation to the younger generation. *Kikigaki* literally means listen and write. This method also began to be developed in several places in Indonesia. It gives opportunity for the younger generation to learn the history of the actors or *meijin* during their life or work which are close to environment. *Kikigaki* covers two functions, as natural environment preservation, and also human and environmental history and the culture of enclosing them. Therefore local wisdom-based environmental education through *kikigaki* becomes necessary to be developed in Indonesia since it has opportunities for enriched with the experience and culture in Indonesia.

1. Introduction

Environment becomes part of global issues today. It related with human security when every country now concern with the environmental issues for the future of humankind. The emerge of the environmental issues is respond by establishing many program related with the environmental preservation and education. The environmental education is important not only to educate people with environmental knowledge but it is part of investment for the future. The people consciousness for the environmental issues is the main goal and hope that it can change their behavior to be more environmental friendly.

The United Nations Environment Programme (UNEP) define the environmental education as a learning process to get awareness and acquire knowledge, skills, values experiences and determination to solve future environmental problem [1]. It means that the environmental education is doing for now and forever in the human daily life on its relations with the nature including the use of resources. Therefore, the environmental education at school is not enough to cover it and should to be supported by non-formal and informal education. Many governments and non-government organizations create environmental related program, or as eco-friendly program as implementation of this environmental organization by develop modules, curriculums, materials and methods. However, it cant be implemented in the same way like an uniform, but it should be adjust with the local situation. Many countries has their local environmental knowledge and wisdom that can be used as the source of environmental education. Of course the implementation of this locality also need to be adjusted to the current situation,



but it will be easier when people understand the environmental education because close to their culture and daily life. One of the examples is the use of *kikigaki* method in Japan to create communication between young generation and old generation to get information about local wisdom of the old generation and society. It is possible that inside the local wisdom also be environmental education.

This article discusses the environmental education by *kikigaki* method that may be implemented in Indonesia. It describes the Japan experience on *kikigaki* program to transfer local wisdom knowledge from old generation to young generation in Japan. Since Indonesia and Japan have relatively similarity in the context of the richness of local wisdom, and also as Asian country, it may be possible to adopt *kikigaki* method in Indonesia. *Kikigaki* can be used as a complement of current environmental education provided by government or NGOs since there are a lot of local wisdom in Indonesia that may with environmental content and already exist for years and has a role in environmental preservation.

2. *Kikigaki* Method

The story about *kikigaki* program is started when Miyamoto Tsuneichi, a famous Japanese ethnologist, visited around 4000 villages in Japan and doing interview with local figure and make story about them from the local point of view. In 1960, he published this story into a book titled *Wasurerareta Nihonjin* or means forgotten Japanese [2]. This book became famous book and since 2002 the *kikigaki* method is adopted for high school student in Japan.

In general, *kikigaki* is defined as a method to get or search information about someone's life story through direct dialogue [3]. Literally, *kikigaki* comes from the word *kiki* means listen and *gaki* means write. The process to search the information is done by direct interview with the informant which is then noted in a transcript which it means from the informant's point of view. The narration becomes like written by the informant him/herself. Although like interview process in qualitative research method, *kikigaki* has different than interview, in the context of philosophy than the technique. *Kikigaki* is not an ordinary interview, it has deep philosophy to transfer the knowledge from the informant to reader and it contains philosophy of life from the informant's life story. *Kikigaki* has social-cultural function to preserve the local wisdom which is told by the informant or *meijin*. Then, the selection of informant or *meijin* is not easy but must fulfill the conditions like age and experience. Through *kikigaki*, the local wisdom should be transferred and preserved by next generation. In context of technique, while in interview the researcher gives some questions and the informant answers those questions, but in *kikigaki* more focus to the conversation, not a question-answer way. Though this conversation or dialog, it would be got the informant logic, not the researcher's logic with its social situation.

In Japan, *kikigaki* is popular and becomes one of important programs as well as an example for other countries. In the International Partnership for the Sayotama Initiative (IPSI) secretariat report, it mentioned that *kikigaki* has three main functions as connecting people, connecting generation and connecting human and nature [4]. According to this report, *kikigaki* has important function in transferring message among people in the *kikigaki* practice by direct conversation. Moreover, the two parties include in this conversation represent old and young generation where it means *kikigaki* has a role in generation relations. Then, the story written through *kikigaki* method contains the local wisdom which it can be focused on the relations between human and nature. An example of *kikigaki* program is done by high school students in Okayama who write stories about fisherman. Shibusa Juichi, the president of Network for Coexistence with Nature, a non-profit organization, described that *kikigaki* is very important in the community development and assistance in for the fishery society where it is used to assist technology transfer from Japan to other archipelago countries which is inline with the local wisdom [5].

3. *Kikigaki* as an Environmental Education in Japan

The environmental education in Japan is described in a guide, definitely called a teacher's guide or "*Kankyokyoiku shidoshiryo*" [6]. The guide has been developed since 1991 and changing according to the domestic and international situation. The international situation influences the guide when it is change the definition of environmental education according to the guide in 1991 that related with the

global environmental issues problem solving to the sustainable society according to guide in 2007. The change is related with the world situation as the United Nations agenda on sustainable development, that shift from the problem solving focus to the development of society where there is a balance development of environment, economy, society and culture. The definition changed again in 2014 when it defined the environmental education as a combination between school and social education. Moreover, in practice, like in Shiga prefecture, student in elementary school were introduced to the local wisdom in many environmental practice like Lake-Biwa floating school, forest-based experiential learning and a project promoting schooling that takes place in rice paddies. Students are engaging with the local farmers to learn and experiencing some activities like growing, harvesting and consuming rice.

However, Imamura Mitsuyuki noted that there is a limitation in the environmental education in Japan. It placed on the superficial activity of environmental education which only focus on the today activity like what school called “eco-friendly activities” [7]. Of course those activities are important and give positive impact, but it is not focus on the essential problem as how people aware with the future through the environment. Environmental education at school mostly focuses on the how to preserve environment by many activities which are created, planned and evaluated. But, in other hand, there are the existence of local wisdom with fully of environmental education learning. There is a traditional environmental education which focuses on the “teaching-learning” process, means teaching from the local wisdom and learn from it by older generation to young generation, from parents to children, from children to grandchildren. Although it may transferred in oral, unwritten, but it emerge as local knowledge in the community.

According to Imamura’s critics to environmental education as superficial, and propose the traditional environmental education which already exist and based on the local wisdom, *kikigaki* is one of the solution. *Kikigaki* has important aim to transfer the local wisdom knowledge from old to young generation. It is important in the context of environmental preservation like what has been done in Japan where *kikigaki* done in the collaboration between government and private. It aims to transfer the *meijin*’s knowledge, skill and information to society (mainly to young generation and the reader of *kikigaki* book report) about the importance of forest, and increase the awareness from young generation [8]. They select some *meijin* with some criteria like more than 50 years old, have experience related with forestry for more than 20 years, have skill in their field and become role model for people who work in the same area and work. Before, the committee select 100 students who will participate in the *kikigaki* program. Then, they select for 80 *meijins* in the forestry and 20 *meijins* in fishery. In 2002 *Kikigaki Kousien* program which was participated by high school students to meet farmers and foresters, there are three positive impacts [9]. First, there is a trans-generation communication and transferring knowledge from *meijin* to students. Second, it gave students experience and additional knowledge about forestry and agriculture life. Then it could change their perspective and attitude to the natural environment. Third, it attracted sponsor, by company, to involve to this project as their Corporate Social Responsibility (CSR).

4. *Kikigaki*: Lesson for Indonesia

Environmental education in Indonesia is conducting under the Act Number 32 Year 2009 about the Environmental Control and Management [10]. It is mentioned that everyone shall obtain entitled environmental education, information access, access participation, and access to justice in environmental right to meet a good and wellness. For the implementation of this Act, Ministry of Environment and Ministry of Education signed the MoU on February 1, 2010 which aims to growing and develop knowledge, values, attitude, behavior, and insight, as well as environmental concern of learners and communities, and improving quality of human resources to perform sustainable development and environmental conservation functions. Both ministries handle their task on environmental education based on their filed, like Ministry of Environment is formulating policies, guidance and environmental education program; developing and establishing outline of the contents of environmental education; and promoting, monitoring, analyzing and evaluating the implementation of environmental education policy in central and local level. While Ministry of Education is establishing policies, guidelines and environmental education program; promoting, develop, integrate, establishing

material and facilities/ infrastructure in the field of education as well as training of environment national education system; increase capacity of learners teachers and educational staff, society and education policy stakeholders in all level (central and regional); and monitoring and evaluation of environmental education. The development of environmental education in Indonesia was begin in 1977/1978 when the government released the guideline on environmental teaching program developed by Institute of Pedagogy Jakarta and it was tested in 15 elementary schools in Indonesia.

The environmental education in Indonesia is divided into three groups as formal, non-formal and informal education. In formal education there are three programs like *adhiwiyata* program for green school and primary and secondary education, green campus for higher education and *ecopesantren* for Islamic boarding school. In 2006, the Ministry of Environment launched *Adhiwiyata* program. It aims to create students who are responsible in saving and caring the environmental through good school management for sustainable development. This program was involved by 248.896 schools in Indonesia. The green campus program aims to implement education program for sustainable development with some criteria like natural resource management, energy, air, infrastructure and land, office, transportation, waste management, education and research, environmental education curriculum, research on environmental issues and contribution to the community. *Eco-Pesantren* program aims to increase awareness that the essential guide to Islamic teaching in friendly environment behave; shaping character of environmental *santri* (student) patronage; make clean, wellness and lovely boarding house; and making as a Islamic boarding centers of excellence, Moslem student for environmental education. In the non-formal education, the government also establishes the Green Scout group called *Saka Kalpataru* with about 21 million members around Indonesia. It launched in December 1, 2013 with aims to environmental mainstreaming in green scout activities; broaden knowledge and skills for the scouts in the field of environment, which is reflected in technical skill requirement; and 3 technical skill requirement on *Saka Kalpataru* like 3R (reuse, reduce and recycle), climate change and biodiversity. Therefore, in the informal education there are some programs aims to empowering community and raising public participation through access information, participation and justice, and education through campaign and publication.

Beside government, the NGOs also have roles in environmental education in Indonesia. The NGOs involve in environmental education in Indonesia since 1960s, however it also influence by social and political situation in Indonesia [11]. In 1960s, there were two groups concern in environmental issues and be preliminary form of environmental education in Indonesia. They are *Pramuka* (scouts) and *Perkumpulan Pecinta Alam* (nature lover groups). In 1970s to early 1980s, two prominent NGOs in environment were established, they are *Wahana Lingkungan Hidup Indonesia* (WALHI or Indonesian Forum for Environment) and *Yayasan Indonesia Hijau* (YIH or Indonesia Green Foundation). Since 1990s, the Environmental Non-Government Organization (ENGO) are developing and flourishing in the context as environmental movement and development of environmental education. They create networks and some of them concern to local community.

According to Indonesian experience and program for environmental education above, it seem to focuses in top-down education, especially for the program under government. It means that the environmental education maintain by the program under a curriculum from the teacher or organization to the people. In the implementation, there are some challenges including the introduction of environmental education in school as one of the most difficult problems related with the implementation in educational system [12].

While in other hand, Indonesia is a country with many ethnics that may have its traditional environmental education. Traditional here means, the local knowledge of environmental preservation that may not seem as an academical or scientific explanation, but it followed by the local communities and make roles in the environmental preservation. It may involved in the local wisdom. Some research show that in some areas in Indonesia, there are some local wisdom and tradition that have roles to preserve the environment effectively [13]. The question then, how to transfer the knowledge of environmental preservation from the local wisdom or old generation to young generation? To answer this question, I think *kikigaki* method that introduce in Japan can be adopted. The *kikigaki* has been

starting to be adopted in Indonesia since 2012. According to Ministry of Environment and Forestry press release No.: SP.148/HUMAS/PP/HMS.3/07/2017, *kikigaki* program has been done in some places in Indonesia like in Bogor, Central Sulawesi and Central Kalimantan. Then, it plans to create a cooperation with i-i network which did *kikigaki* program in Indonesia, mainly related with forestry issues where the percentage of Indonesian and Japanese forest relatively similar include its life pattern [14]. In 2012, Kornita High School of Bogor Institute of Agriculture and Sakado High School of Tsukuba University joined the *kikigaki* program in Indonesia. There were 20 students from each high school joined this program, while the NGO Raptor Conservation Society (RCS) selected the *meijin* related with environmental preservation and *Yayasan Jaringan Koeksistensi dengan Alam* (Network for Coexistence with Nature) did the training and assistance program include the funding management. This program also involves collaborators like Motoko Shimagami the vice director of NGO i-i network, Gunung Gede Pangrango National Park staff and JICA expert. This program aims to learn environmental and social program in the society and students from Indonesia and Japan can learn and understand the culture from the root of their own country. Since 2015, *kikigaki* is becoming an additional activity at Kornita High School in Bogor.

Kikigaki can be a good lesson and becomes a good method for environmental education in Indonesia. Indonesia, like other Asian countries, now is enjoying rapid economic growth and development where on the other side they have to face environmental and social problems and need the best solution to strengthening environmental education. In its origin country, Japan, *kikigaki* becomes a model in education for sustainable development. Motoko Shimagami, a vice chairman of i-i Network Japan mentioned that in 2010, Kyozon-no-Mori, a NGO which held *kikigaki* in 2002 in Japan, invited i-i Network which has many programs related with natural resources management based on society since 2004 in Indonesia, to develop *kikigaki* program in Indonesia [15]. Since the first *kikigaki* program in Bogor in 2012, then it grew to other cities like in Palu, Donggala and Sigi, Central Sulawesi. In the development of *kikigaki* in Indonesia, it is not only in training and seminar but also competition for students who join *kikigaki* in their school. 7 best students, sent to Japan to present their report with 100 Japanese high school students who joined *Kikigaki Koshien* in Japan. While Tri Heru Widarto, headmaster of Kornita High School mentioned that *kikigaki* gives students experience, local wisdom knowledge and also skills like interview, writing and presenting their report [16]. The positive response also expressed by Soeryo Adiwibowo, a professor at Faculty of Human Ecology, Bogor Institute of Agriculture. He emphasizes that *kikigaki* is a character education to strengthening Indonesian education system that not only give solution for agricultural generation crises but also as local wisdom preservation, including tradition and its philosophy [17].

Kikigaki can be one of the best solution for environmental education supplement to support government program on environmental preservation because of some reason. First, Indonesia rich of local culture and local wisdom that already exist in almost every places or islands that may contain environmental issues. It means, there are a lot of *meijin* provided to be explored to transfer the local knowledge or local values to the young generation. Second, *kikigaki* method provides the simple, easy but meaningful for student to learn the environmental education, not by studying a literature, joining the class or training, but just by themselves through the conversation with the *meijin*. *Kikigaki* is not only provides the way to understanding local culture, spirit and value but also teaches student to be more empathetic to their surrounding environment.

5. Conclusion

This article does not aim to replace the environmental education that already exist both by government and non-government organization in Indonesia, but more to introduce the model that can be as complement on those environmental education. The *kikigaki* provides the method that different from ordinary environmental education at school and non-formal education that places the students as object and provides them by material and curriculum that may far from their life, although it seems academics. Therefore, it should be supported by the other way to introduce student with environmental education from inside. It means the environmental education sometimes grows and remains in the society inside the

local wisdom that exist and followed for years. When student learn about the local wisdom related with environment through *kikigaki*, student easy to understand the meaning of the value and develop their empathy because what they see and listen are real.

Local wisdom sometime placed as “traditional” and less “modern” in the context of modern-traditional dichotomy. This phenomena may often find in developing countries. The result is we leave the local wisdom that may contain of environmental education. So, actually we face two preservation problems, on local wisdom and environment. *Kikigaki* method brings solution for those problems, when we get environmental education through learning or re-learning our local wisdom.

In the context of the cooperation between Indonesia and Japan in the implementation if *kikigaki* method, it is not only about the *kikigaki* but also about the people-to-people relations and create common understanding between Indonesian and Japanese.

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