



Building a Green School Curriculum from Elementary in Indonesia as an effort to Maintain Environmental Sustainability

Ayurisyia Dominata

Deputy for Development Policy, National Research and Innovation Agency - Jakarta, Indonesia

Email : ayur001@brin.go.id

Abstract— The challenge in protecting the earth from environmental damage is increasing along with the increasing population, advances in industrial technology, and minimal environmental awareness from the community. Technological advances need to be balanced with awareness of protecting the environment systematically. This publication has the theme “Green Schools and the Environment”. The importance of this theme is based on the fact that although Indonesia has a high potential for biodiversity and renewable energy spread throughout Indonesia, the green school curriculum that provides education for children since elementary school has not been massively implemented by the Indonesian people. This research uses a qualitative descriptive method with data collection techniques through interviews, observations, and literature studies. The results of the study conclude that Indonesia needs to create a green school curriculum since basic education and insert special subjects on environmental sustainability in every school at all levels, especially elementary schools as a provision for children from an early age.

Keywords—Curriculum, Green, Schools

I. INTRODUCTION

A. Background

The challenge in protecting the earth from environmental damage is increasing along with the increase in population, advances in industrial technology, and low public awareness of the environment. Technological advances need to be balanced with awareness of protecting the environment systematically. This study discusses "Green Schools and the Environment". The importance of this theme is based on the fact that although Indonesia has a high potential for biodiversity and renewable energy spread throughout Indonesia, the green school curriculum that provides education for children from primary school has not been widely implemented by the Indonesian people. Lack of awareness of the importance of protecting the environment and nature will have a fatal impact, especially if it is only realized when it is too late.

School is a source of knowledge and goodness. Schools are formal institutions where students and teachers interact with each other in learning and teaching; not only knowledge but also wisdom values. Lessons on wisdom and good attitudes about protecting the environment and preserving nature are ideally taught to students from elementary school, or even before they enter school. Herdiansyah stated “Pioneering and developing environmental care programs in education is not an easy job. The toughest challenges that must be faced are the habit of littering, unhealthy lifestyles, and wasteful lifestyles”. [1].

Schools that are not environmentally friendly, and are less successful in carrying out their role as educational institutions, can

be seen from the unavailability of a good waste management system so that garbage is scattered in the school yard, dirty toilets, dust sticks to the glass. and classroom desks, poor school sanitation, students are accustomed to throwing garbage on roads, sidewalks, public transportation, playgrounds, rivers and others. Fua explained that “if these bad habits are not changed early on, then a hostile life will be fostered into the next life. Handling environmental problems should actually start from the process of overcoming human behavior, because humans are the cause of environmental problems” [2]. When environmental problems continue to be ignored, then disasters will appear in human life.

Yulianto, et al explained that “currently the types of disasters that occur on earth in general are increasingly varied, all of which are detrimental to the community. Meanwhile, disasters that occurred throughout Indonesia from 1815 to 2019 were dominated by climate-related disasters such as floods with a total of 10,438 events, landslides with a total of 6,050 events, drought with 2,124 events, and forest and land fires with a total of 6,050 occurrences. 6,050 events. 1,914 incidents. Based on this phenomenon, it means that there is a tendency to increase disaster events from year to year, where the number of disaster events in 1815 only amounted to 1 incident which increased dramatically to 3,885 events until 2019. Responding to these conditions, maintaining national security through disaster risk management is very important. for sovereignty. a country, so that good disaster management is a form of protection for the entire nation from all threats, especially national security threats originating from non-military threats in the field of disaster” [3].

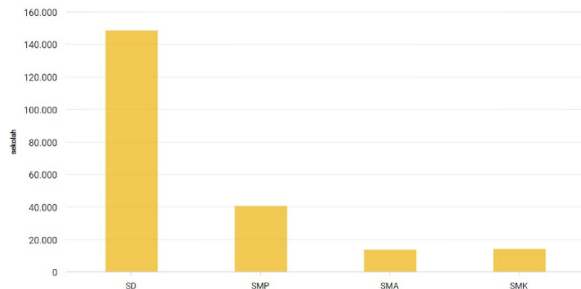
Nurulloh, said “building awareness of the importance of the environment is a journey that must be started for the survival of the next generation so as not to be threatened by irresponsible human behavior today. Environmental education aims to introduce various values and explain concepts to develop the attitudes and skills needed to understand and appreciate the interrelationships between humans, culture, and the biophysical environment” [4]. Obaid explained that “the nature of education cannot be separated from the environment, because humans are born automatically interact and need the environment to grow and develop into adult humans. So that the human mindset has been constructed by everything that happens around the environment. The existence of the environment is the obligation of every human being to maintain all the potential possessed by the environment itself, but in reality there has been a separation between the world of education and the environment, even though educational institutions should provide education. occupy and everything that happens in the environment is the embodiment of everything that is learned in the world of education” [5].

Green schools are schools that have special specifications, for example in terms of buildings and special curricula that emphasize environmental education and nature conservation. Although there

are schools in Indonesia that apply the principle of green schools, there are not many, and even if they exist, they have not been able to change people's behavior..

Figure 1 below shows data on the number of schools in Indonesia at all levels:

FIGURE 1 NUMBER OF SCHOOLS IN INDONESIA BY EDUCATION LEVEL 2020/2021



Source: Central Statistics Agency (BPS), Republic of Indonesia (6)

Figure 1 above shows data on the number of schools from all levels (SD, SMP, SMA, SMK) in Indonesia where there are 217,283 schools for all levels throughout Indonesia. The number of elementary schools (SD) is the highest in 2020/2021, which is 148,743 schools. Meanwhile, for SMP (Junior High School) there are 40,597 schools, then SMA (Senior High School) are 13,865 schools, and SMK (Vocational High Schools) are 14,078 schools. The large number of elementary schools is a good potential for disseminating green school policies starting at the basic education level. Until now there is no national policy that makes green school curriculum at all levels of education in Indonesia, especially in this research, for basic education level. Even if it exists, the green school format that is applied is limited to certain schools that want to apply, is limited, and mostly just an appeal. Table 2 below shows the data on the distribution of the number of schools at the elementary school level throughout Indonesia:

TABLE 1
NUMBER OF ELEMENTARY SCHOOLS (SD) UNDER THE
MINISTRY OF EDUCATION AND CULTURE OF THE REPUBLIC
OF INDONESIA BY PROVINCE IN 2020/2021

Province	Number of Elementary Schools
Sumatera	34450
Kep. Bangka Belitung	822
Kep. Riau	963
Jawa	66513
Bali	2441
Nusa Tenggara Barat	3234
Nusa Tenggara Timur	5158
Kalimantan	12336
Sulawesi	16088
Maluku	1793
Maluku Utara	1310
Papua Barat	1072
Papua	2563
Indonesia	148743

Source: Ministry of Education and Culture of the Republic of Indonesia, Data quoted from the 2021 Indonesian Statistics Book, BPS RI [6]

Furthermore, Table 2 below shows the data on Percentage of Schools in Indonesia by Education Level and Availability of Sanitation:

TABLE 2
PERCENTAGE OF SCHOOLS IN INDONESIA BY
EDUCATION LEVEL AND AVAILABILITY OF
SANITATION*), 2020

Education Level	Sanitation Availability		
	Basic	Limited	Not Available
SD	40.80	45.60	13.60
SMP	52.50	34.60	12.90
SMA	59.54	28.91	11.55
SMK	57.80	32.22	9.97

*Notes:

1. *Basic Sanitation*; have proper and separate toilets for men and women in good condition or lightly damaged.
2. *Limited Sanitation*; have decent toilets but not separate men and women and the condition is badly damaged.
3. *No sanitation*; does not have a toilet or toilet is not proper.

Source: Ministry of Education and Culture, Republic of Indonesia, 2021, Data quoted from the 2021 Indonesian Statistics Book, BPS RI [6]

Based on Table 3 above, it can be seen that on average only 50% of schools in Indonesia already have basic sanitation facilities, where the availability of sanitation facilities at the elementary level is the lowest, which is only available at 40.8%, meaning that there are more than 50% of schools sanitation is limited or even unavailable.

Limited sanitation facilities in the school environment can be one of the parameters that schools still have difficulty implementing an environmentally friendly education system or green schools. Based on these problems, this study wants to discuss the potential for developing green school policies and green school curricula in Indonesia.

B. Significance of Research

In general, this research is very important because it is expected to raise public and government awareness, by providing data and information needed by stakeholders, especially in Indonesia or other countries who have the same problem in formulating policy solutions in order to save the environment and nature from damage, by formulating environmental education curriculum policies since elementary or early school. The results of the study are expected to be used to identify elements of green schools, both from the specification of the lesson curriculum and the physical building towards green and sustainable education. Therefore, the findings of this study are expected to encourage the Indonesian government to develop and create curriculum guidelines and design of green school buildings in Indonesia, from the early education level.

II. LITERATURE REVIEW

A. Public Policy

Thomas Dye in Dominata, defines public policy as "whatever the government chooses to do or no to do" (7). According to Nugroho in Dominata explain that "good public policy can be introduced because the government has done something. However, when the government does not do something and then certain conditions occur, that is also the result of a form of public policy because what a leader does or doesn't do will

affect the public or his people. Policy is always about the decision of the state or government. The aim of the policy is to change existing conditions towards better conditions” [7].

B. Green School

The US Green Buildings Council (USGBC), quoted from Ramli et.al defines a green school as “a building or school facility that provides a healthy environment that is conducive to learning and saves energy, resources, and money” [8]. Gordon states that green schools are “the physical result of a consensus planning, design, and construction process that takes into account: the performance of a building over a 50 to 60 year life cycle. He further points out that green schools are built to provide fresh, clean air, a comfortable temperature range, plenty of light, and low distraction from unwanted noise while also maximizing resource efficiency, minimizing pollution, and teaching students the importance of innovation in development Environment [9]. Gary Bailey, Vice President of Innovative Design, in an interview with Olson and Kellum, agrees that sustainable or green schools can create a better learning environment. The concept of sustainable development reflects the understanding that we must meet the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable schools not only adhere to the concept of sustainability but are, in themselves, a teaching tool for sustainability” [10].

C. Green School Curriculum

Somwaru stated that “Green School is a school designed with the aim of creating community groups or students who maintain Biodiversity in a sustainable and safe way. This is achieved by creating a system that positively influences children's behavior towards our environment, focusing on the subjects of Biodiversity (school gardens and endangered species), Waste (reduce, reuse and recycle), Water and Energy. Through this project, all schools are provided with the necessary training, information, materials” [11].

Jannah, et al stated that “To support the implementation of environmental education (EE) throughout the curriculum, WWF-Malaysia has developed an Environmental Education Kit (EE-Kit) to increase the level of environmental literacy of students. Environmental literacy is part of EE which refers to knowledge, awareness, behavior, environmental attitudes and participation” [12].

Herdiansyah et al stated that “Involvement in environmental development can be done through two kinds of approaches. The first is a project approach and the second is a motivational approach or it can be both integrated. The second approach (motivation), although it takes a relatively longer time, will have a more positive impact because the target will gradually change his attitude and behavior in a persuasive manner. The behavior of ignoring environmental problems will turn into a dynamic attitude that will always grow and lead to the stability of environmental involvement [13].

Based on some of the explanations above, it can be concluded that the green school curriculum is a school subject matter specifically designed to teach students to be able to maintain Biodiversity in a sustainable and safe way. This special subject on the environment is expected to be able to positively influence the behavior of students in schools towards the environment, with a focus on the subjects of Biodiversity (school gardens and endangered species), Waste (reduce, reuse and recycle), Water and Energy. Through this project, all schools are provided with the necessary training, information, materials, facilities and infrastructure. The government can develop an Environmental Education Kit (EE-Kit) to increase students' environmental literacy levels. Environmental literacy is part of EE which refers to knowledge, awareness, behavior, environmental attitudes and participation. In addition, penetration of environmental subjects can be done in two ways, first, a project approach and the second is a motivational approach or both can be

integrated. Although the motivational approach takes a relatively longer time, this will have a more positive impact because it will gradually change students' attitudes and behavior in a persuasive manner. The behavior of students who initially do not care about environmental problems will turn into a dynamic attitude that cares and will always grow and lead to the stability of environmental involvement.

III. METHODOLOGY

This research is a descriptive study using a qualitative approach. According to Ali, in Dominata, it is stated that descriptive research is “research that accurately describes the characteristics of a person, a situation, a symptom, etc., which becomes the object of research that can be used to solve problems by analyzing, classifying, comparing, etc.” [2]. This research also a *policy analysis research for policy*, Riant Nugroho in Dominata state that “Policy research for policy is research that aims not only to assess policy but is intended to influence the formulation of further policy agendas. Policy research for policy includes (a) policy advocacy in terms of research and arguments intended to influence the policy agenda inside and outside the government, (b) information for policy, analysis intended to provide information for policy-making activities. This can be in the form of recommendations or detailed external / internal research on the quality and judgmental aspects of a policy” [7].

TABLE 3 LIST OF KEY INFORMANTS

No	Key Informant	Position	Institutions	Relevance
1	P.001	Activist	WALHI Jakarta	Environmental Activist
2	K.002	Senior Policy Analyst	Ministry of Education, Culture, Research and Technology, Republic of Indonesia	Match the Position, Duties, Functions and Organizations
3	S.003	Senior Policy Analyst	Ministry of Environment and Forestry, Republic of Indonesia	Matches His Expertise
4	A.004	Senior Policy Analyst	National Research and Innovation Agency	Matches His Expertise
5	R.005	Researcher	National Research and Innovation Agency	Matches His Expertise
6	D.006	Lecturer	University of Sriwijaya	Educational Practitioner

This research was conducted in Indonesia in October 2022. The subjects in this study were the Ministry of Education, Culture, Research and Technology, Republic of Indonesia in 2022 and all elementary schools in Indonesia, regarding the implementation of environmentally friendly schools. While the object of the research is the curriculum policies on environmentally friendly green schools that hope can be formulate and implemented starting at the elementary school level in Indonesia.

The data analysis technique in this study connotes qualitative analysis, analysis based on logical arguments [2]. First, the researcher collects data in the form of detailed stories from respondents, then interprets the data using clear and significant arguments. The data in the form of detailed stories are expressed by the author according to the views of the respondents. In addition, in terms of the problem or research objective, this study aims to find the meaning (in the form of a concept) behind the details of the respondent's story and the social setting under study. Data analysis was carried out concurrently with data collection.

IV. RESULT AND DISCUSSION

A. History of Curriculum in Indonesia

Before discussing further about the establishment of a green school curriculum in the education system in Indonesia, here is the history of the curriculum in Indonesia and its learning focus.

The 1947 curriculum is considered a more political curriculum, due to the transition from the educational orientation of Japan and the Netherlands to the Indonesian national system. The focus of this curriculum is to build an independent and sovereign character so that the Indonesian nation is equal to other nations.

Furthermore, the 1952 curriculum is a study plan that decomposes thematic concepts. Every education and teaching plan in Indonesia at that time had to pay attention to the content of the lessons and relate them to everyday life. A teacher only teaches one subject.

The 1964 curriculum, is the 1964 Education Plan Curriculum with the concept of active, creative and productive learning. During this curriculum period, the government determined that Saturday was Krida Day (students carried out various activities according to their talents and interests). Pancawardhana program, namely moral, intelligence, emotional or actual, skill and physical development.

Then the 1968 curriculum applies the concept of active, creative and productive learning. The government stipulates that Saturday is Krida Day (students carry out various activities according to their talents and interests), and the Pancawardhana Program, namely moral, intelligence, emotional or actual, skill and physical development.

Followed by Achievement Oriented Curriculum (1975-1994), Methods, materials, and teaching objectives are detailed in Instructional System Development Procedures (PPSI), known as lesson units; education and teaching plans for each subject unit. At this time, the names of the Natural Sciences and Life Sciences subjects were changed to Natural Sciences, and Algebra and Measurement to Mathematics.

Furthermore, the 1984 curriculum, this curriculum was born because the 1975 curriculum was deemed unable to keep up with the rapid developments of society. This curriculum prioritizes student activity in learning, which is called the Active Student Learning Method (CBSA) approach. At this time the field of study of the History of National Struggle Education (PSPB) was born. For high school students, the 1984 curriculum divides subjects into core courses and elective programs according to their interests and talents.

After that, the 1994 Curriculum was born, a change in the learning time distribution system from semester to quarter system. The name of SMP was changed to SLTP (Junior High School), then SMA was changed to SMU (General Middle School). Majors in SMA are also divided into three programs, namely Science, Social Sciences and Languages. Then the subjects of History of National Struggle Education (PSPB) which were born in the previous curriculum began to be eliminated in this curriculum.

The next curriculum is the 2004 curriculum, which is the Competency-Based Curriculum (KBK); contains three main elements, namely the selection of competencies according to specifications, evaluation indicators to determine the success of competency achievement, and learning development. Schools are given the authority to develop curriculum components according to school conditions and student needs. The curriculum which was originally material-based was changed to be competency-based. The name of the Junior High School (SLTP) was changed back to Junior High School (SMP), and the General High School (SMU) again became High School (SMA).

The 2006/KTSP Curriculum (Educational Unit Level Curriculum) is known as the Education Unit Level Curriculum (KTSP); This curriculum is almost similar to the 2004 curriculum. The difference lies in the authority in its preparation which refers

to the decentralization of the Indonesian education system. The central government sets competency standards and basic competencies, teachers are required to be able to develop their own syllabus and assessments according to school and regional conditions. In general, the aim of this curriculum is to become an independent and empowered educational unit through the granting of authority to educational institutions. It also encourages schools to make participatory decision making.

The 2013 curriculum is the curriculum currently used in Indonesia. Emphasis on character education; Character education is integrated in all learning in every field of study Emphasizing the formation of spiritual attitudes in Core Competency 1 (KI 1) and social attitudes in Core Competency 2 (KI 2). However, the attitude assessment of KI 1 and KI 2 has been abolished for each subject in the 2013 revised edition of the 2017 curriculum. Only religion and PPKN remain. Assessment based on character education, thematic based learning, and the teacher as a facilitator. Simplification of Indonesian language material, IPS, PPKN, and others. While the additional material is Mathematics.

Curriculum 2022, still at the planning stage, the green school curriculum discussed in this research can be inserted here.

Based on the explanation above, it can be seen that the history of the curriculum in Indonesia from 1947 to 2013, and it can be concluded that there is no curriculum that specifically mentions an emphasis on environmental-based learning systems or nature conservation.

When this research was conducted in October 2022, there was information that the 2022 curriculum would be published soon, and the results of the study in this research are expected to be included in the latest curriculum to be published.

Asri stated that “developing and formulating a curriculum is not an easy thing. Moreover, the curriculum is a concept that must be able to answer all the challenges that exist in the era where the curriculum is applied, even though it is clear that change cannot be avoided. The development and growth of science and technology in addition to contributing to the progress of the nation turns out to set aside its own problems which are quite complex for the world of education” [14], the green school curriculum concept learning system is expected to be a good preventive measure to prevent Indonesia from environmental problems and disasters in the future.

B. Opportunities for Green School and Green School Curriculum in Indonesia

Building a green curriculum since elementary school in Indonesia is a positive idea and the opportunities are wide open in Indonesia. Especially when considering Indonesia's rich natural resources that must be maintained and managed properly from an early age. Children from an early age or elementary school, or before entering school, must be formally taught to love the natural environment and the wealth of their country.

This change in orientation from an ordinary school curriculum system to a green school curriculum in Indonesia needs to be done because of the awareness of experts that environmental problems are increasing year by year not only in Indonesia but globally. When interviewed in October 2022, all key informants (6 experts) agreed that the problem of waste management in Indonesia is still a crucial issue that has not found a solution until now and is one of the main environmental problems that must be addressed in Indonesia.

Not only mentioning the waste problem which is a crucial issue in Indonesia, activists from WALHI Jakarta, Indonesia (Informant Code P.001), also underlined aspects of law enforcement that the government should pay more attention to. The following are the results of an interview with **Informant Code P.001, in October 2022**, on Indonesia's severe environmental problems;

“Attention that needs to be given by local governments is law enforcement which includes supervision, prevention (creating conditions) and handling of environmental problems that often

appear to interfere with health and even cause losses. Concrete examples are the handling of waste and household waste flows, flood control, violations of land use that are not in accordance with the designation, tree maintenance and so on". (Informant Code P.001, in October 2022).

Based on the results of the interview above, it can be seen that Informant P.001's statement explains that garbage and household waste flows in Indonesia are still a problem that has not been found a solution, in addition to other environmental problems such as land use that is not in accordance with its designation, he underlined that the government must pay attention to aspects of law enforcement. both at the stage of supervision, prevention, and handling when the problem has occurred.

In line with Informant P.001, Informant K.002 also agrees that waste management is a crucial environmental problem in Indonesia:

"Locally, the problem of waste becomes important to be managed properly. Housing usually already has a clear SOP on how waste goes to the final disposal site (TPA). This is somewhat different from areas that do not yet have SOPs for waste to reach the landfill, such as areas in villages or densely populated areas that do not have these SOPs". (Informant Code K.002, in October 2022).

In addition to the waste problem, the results of interview data triangulation concluded that there are still many other problems that are environmental problems in Indonesia that need serious attention, such as water pollution, air pollution, forest damage, damage to marine ecosystems, traffic problems, congestion, availability of transportation and unfriendliness. services for public transportation in Indonesia. In addition, Informant R.005, said that the environmental problem in Indonesia is also about maintaining the cleanliness of shared facilities, for example, the frequent vehicles (trucks/pick ups/private cars) that pass through clay roads and contaminate asphalt roads, they should be cleaned before entering the highway. so as not to pollute the road. The remnants of soil that fell on the highway eventually contaminate other vehicles and eventually carried everywhere. Also the problem of disposing of smoke and cigarette butts that often occur on the streets which is detrimental to public health. This is related to the manners and ethics of our society that have not been good.

Based on all these problems, the informants agreed that part of the solution to preserve the environment and protect nature from damage can be started from basic education in schools, even before that. The following are the answers to the interview with the Informant Code A.004, regarding the question of early environmental education: "Agree, even before school (awareness of protecting the environment) must have started to get used to it at home" (Informant Code A.004, in October 2022).

Furthermore, answering questions about the special curriculum on environmental conservation or the green school curriculum in Indonesia, the informants gave various answers, as follows:

TABLE 4 INFORMANTS' ANSWERS ON GREEN SCHOOL CURRICULUM FORMULATION IN INDONESIA

No	Key Informant	Environmental-specific subjects in the school curriculum in Indonesia (agree/disagree)
1	P.001	"Environmental impacts that occur when there is a change in the environment essentially touch aspects of Physics, Chemistry and Biology. These three aspects have become part of the national education curriculum, but integrating them into the subject of Environmental Sustainability needs to be reviewed whether it is sufficient to develop in the existing curriculum or is it deemed necessary as a burden for new subjects with right target orientation"

		"The main concern is in presenting the material to students whether it is inserted in each subject or will it be used as new additional subjects. Because new subjects have the potential to be a new cost burden to buy new textbooks themselves".
2	K.002	"Disagree. In my opinion, preserving the environment does not need to be made into one subject, because this problem can be related to many subjects, especially when this learning will be more effective if it is project-based. Preserving the environment in the Pancasila Student Profile is included in the Dimension of Faith, Faith in God Almighty and with Noble Morals, in the Sub-Dimension of Morals to Nature. In addition, this can be more effective if it is incorporated into character strengthening learning, and can be used as a "School Culture".
3	S.003	Agree. This actually already exists, but has not been able to change people's behavior.
4	A.004	I prefer direct practice, for example once a week, but every day, the teacher and students are direct examples
5	R.005	Not so agree. Attitudes / etiquette / behavior needed to preserve the environment requires more practice or habituation every day. Being a special subject will open up space for theory only and will only be studied during certain lesson hours. Make it a habitual activity/practice every day for school children, especially in elementary school education.
6	D.006	Agree.

Source: Primary Data

Answering questions about the development of a special curriculum on the environment in schools, especially elementary schools in Indonesia, the informants gave various answers, some agreed, some agreed but not very much, and some disagreed. They gave answers with various reasons, as well as thoughts about additional costs for students such as books and other materials. Even though they have different views about making green school curricula in Indonesia, the informants as a whole agreed that education about preserving nature and the environment should be taught from an early age.

They argue that there are many benefits of preserving the environment for the life of living things on Earth in the future, for example Preventing and minimizing pollution of water, air, and sea, Preventing and minimizing damage to forests and other habitats, Protecting and preserving wild plants and animals, Preventing and reduce global warming and climate change, The emergence of a suitable, comfortable and friendly environment for daily life that can improve the quality of life of people in Indonesia. They also realize that the benefits of investment are not immediately felt, because it takes time or a process. This is directly proportional to the impact of environmental damage that can occur in the future. Likewise, learning about the importance of protecting the environment may also be felt in the future.

According to them this is a challenge. However, in view of the increasing number of forest lands designated for plantations or agriculture, there are often pros and cons. So that it is also highlighted that it is necessary to think about how to protect and preserve nature while at the same time meeting the needs of human life. Especially with the increasing human population. Need to find a middle ground for this.

The benefits of preserving the environment are essentially preserving human life today and in the future. Human survival for future generations is very dependent on how the current generation of human life patterns, if it does not have sufficient control it will be a threat to the environment itself and in the end the impact will be felt. Every human being has a responsibility to preserve the environment starting from each

individual so that education is needed from an early age and continues to grow up to the secondary/higher education level.

V. CONCLUSION

Education about nature and environment conservation should be taught from an early age. This can be done by establishing a formal green school curriculum in schools in Indonesia, especially in this case elementary schools. Why is it necessary to formalize it, because so far the less formal system has been proven not or has not succeeded in changing people's habits. So this study recommends that the green school curriculum should be formalized as part of the education curriculum in Indonesia, since elementary school.

There are many benefits of preserving the environment for the life of living things on Earth in the future, for example Preventing and minimizing pollution of water, air, and sea, Preventing and minimizing damage to forests and other habitats, Protecting and conserving wild plants and animals, Preventing and reducing global warming and climate change, The emergence of a suitable, comfortable and friendly environment for daily life that can improve the quality of life of people in Indonesia.

The benefit of preserving the environment is essentially preserving human life today and in the future. Human survival for future generations is very dependent on how the current generation of human life patterns, if it does not have sufficient control it will be a threat to the environment itself and its impact will be felt in the end. Every human being has a responsibility to preserve the environment starting from each individual so that education is needed from an early age and continues to grow up to the secondary/higher education level.

Based on all these considerations, Indonesia needs to create a green school curriculum since elementary education and include special subjects on environmental sustainability in every school at all levels, especially elementary school as a provision for children from an early age.

ACKNOWLEDGMENT

I would like to thank all Key Informants who are willing to participate and support this research.

REFERENCES

- (1) Herdiansyah, H, Sukmana, H, Lestari, R 2018, "Eco-Pesantren as a Basic Forming of Enviromental Moral and Theology". *Jurnal Kalam*, 12(2), 303–326. <https://doi.org/http://dx.doi.org/10.24042/klm.v/2i2.2834>
- (2) Ali, F 1997, *Metode Penelitian Sosial dalam Bidang Ilmu Administrasi dan Pemerintahan*. PT. Raja Grafindo Persada, Jakarta.
- (3) Yulianto, S, Apriyadi, R K, Aprilyanto, A, Winugroho, T, Ponangsera, I S, & Wilopo, W 2021, "Histori Bencana dan Penanggulangannya di Indonesia Ditinjau dari Perspektif Keamanan Nasional". *PENDIPA Journal of Science Education*, 5(2), pp. 180–187. doi: 10.33369/pendipa.5.2.180-187.
- (4) Nurulloh, E S, 2019, "Pendidikan Islam dan Pengembangan Kesadaran Lingkungan". *Jurnal Penelitian Pendidikan Islam* 7, 237. doi:10.36667/jppiv7i2.366
- (5) Obaid, Y M 2013, "Religiusitas Lembaga Pendidikan Yang Berwawasan Lingkungan". *Jurnal Al-Ta'dib*, 6(1), 137–149.
- (6) Agustina, R, Sulistyowati, R, Putrianti, R, Anggraeni, G, Dewi, F 2021, *Statistik Pendidikan 2021*. Badan Pusat Statistik RI, Jakarta.
- (7) Dominata, A, Fitriani, D, Kholiyah, S, Mahendra, W, Maharrani, D & Nugroho, R 2021, "COVID-19 solution in Indonesia: Public policy philosophy, intellectual and organic policy perspective". *Journal of Humanities and Social Sciences Research*, 3(1), 27–38. <https://doi.org/10.37534/bp.jhssr.2021.v3.n1.id1094.p27>.
- (8) Ramli, N H, Masri, M H, Zafrullah, M, Taib, H M, Hamid, N A 2012. "A Comparative Study of Green School Guidelines". *Procedia - Social and Behavioral Sciences*, Volume 50, 2012, Pages 462–471, ISSN 1877-0428, <https://doi.org/10.1016/j.sbspro.2012.08.050>.
- (9) Gordon, D E 2010, *Green Schools as High Performance Learning Facilities*. National Clearinghouse for Educational Facilities, Washington, D.C, Retrieved from <https://eric.ed.gov/?id=ED512700> on Oct 30, 2022
- (10) Olson, S L & Kellum, S 2003, *The Impact of Sustainable Buildings on Educational Achievements in K-12 Schools*. Leonardo Academy Cleaner and Greener Program Report.
- (11) Somwaru, L 2016, "The Green School: a sustainable approach towards environmental education: Case study". *Brazilian Journal of Science and Technology*, 3, 10. <https://doi.org/10.1186/s40552-016-0023-6>
- (12) Jannah, M, Halim, L, Meerah, T S, & Fairuz, M 2013. "Impact of Environmental Education Kit on Students' Environmental Literacy". *Asian Social Science* 9, 1-12.
- (13) Herdiansyah H, Jokopitoyo T, Munir A 2016, "Environmental Awareness to Realizing Green Islamic Boarding School (Eco-Pesantren) In Indonesia". *IOP Conf. Series: Earth and Environmental Science* 30,1-6, 012017. doi:10.1088/1755-1315/30/1/012017
- (14) Asri, M 2017, "Dinamika Kurikulum di Indonesia", *MODELING: Jurnal Program Studi PGMI*, vol. 4, no. 2, pp. 192-202

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

