

Review

The Environment Education Policy in Behavior Commitment of Stakeholders for the Environmental Sustainability

Sofyan A. Gani^{1*}, Kismullah Abdul Muthalib¹, T. Rusli Yusuf², Basri A. Gani³

¹Department of English Language, Education Faculty, Universitas Syiah Kuala, Darussalam,
Banda Aceh, Aceh, Indonesia

²Department of Civic Education, Education Faculty, Universitas Syiah Kuala, Darussalam, Banda Aceh, Aceh, Indonesia

³Department of Oral Biology, Dentistry Faculty, Universitas Syiah Kuala, Banda Aceh, Aceh, Indonesia

Received: 2 October 2022

Accepted: 22 December 2022

Abstract

Implementation of environmental education is an important policy to preserve the environment. The authors believe that stakeholders' involvement is significant for the long-term sustainability of ecological and conservation efforts. The purpose of the study was to discuss the commitment of environmentally sound education policymakers to preserve the environment. We have searched and analyzed data from many published books, environmental journals, and environmental education documents from international ecological journals that actively discuss the issue, including Elsevier Publications, ERIC, Sagepub, Google Books, and websites. The data we collected was then analyzed under a phenomenological approach, an effort to understand the issues as much data as possible. We involve data coding, evaluation, interpretation, and conclusion to answer research problems with high validity and reliability principles. We searched our data electronically by embedding keywords for the theme of this study. We also visited some schools to collect data about educational policy regarding environmental framework policy. Based on available data and discussion of research results, there is a very close relevance between environmental education policies in schools, individual attitudes, community behavior, and industrial behavior to preserve a sustainable healthy environment. These findings will be essential for developing a healthy environment for future studies, academic studies, policy-making, and environmental implementation in protecting the environment.

Keywords: environment education, educational policy, environment stakeholders, environmental sustainability

*e-mail: sofyangani@unsyiah.ac.id

Introduction

The attitude of people around the world towards efforts to protect the environment, such as industry, the wider community, individuals, and school communities, is still being debated until all parties have answers and environmental awareness [1]. Industrial and technological developments sometimes only provide temporary environmental protection solutions. In contrast, unavoidable ecological damage due to the impact of industrial activities, which results in a decrease in natural resources, is a problem that requires resolution [2]. Responding to the effects of development and industrial waste on environmental security has always been a priority for policymakers in every country and world organization. However, the field's implementation will differ from shared policies and commitments [3]. Industrial and technological developments sometimes provide temporary environmental protection solutions [4]. Responding to the impact of industrial growth and waste on environmental safety has always been a priority for policymakers [5].

The concept of "green industry" was born as a concept embodying a commitment to respond to environmental damage caused by the industry and the behavior of the parties [6]. Likewise, the policy of maintaining a healthy environment through education introduces environmental education free from air pollution, water pollution and a fresh and relaxed atmosphere. Because a well-organized learning environment will affect the processes and results of student behavior directly or indirectly [7], such as participating in cleaning the school environment is very important because it avoids illness. For this reason, cooperation between the parties and awareness of the community is needed to maintain the background so that it is optimally clean and healthy.

Environmental issues in Indonesia and the world are increasingly phenomenal and complex. Damage to nature is not equivalent to the earth's carrying capacity for humans and other life [9]. Treating air, water, and land pollution will take millions of years to return to normal. Likewise, global warming and climate change caused by fossil fuels such as petroleum, and overpopulation, which result in a shortage of resources in developed and developing countries, continue to generate new problems [10]. Another environmental problem is the indiscriminate disposal of garbage and industrial waste, especially plastic and municipal waste, as seen in the Ciliwung River in Jakarta and other cities in Indonesia [11]. The presence of plastic, fast food packaging, factory product packaging, and cheap e-waste poses a danger to environmental and human health. For this reason, the government must solve the waste disposal problem before it kills fish and damages the river ecosystem [12].

Fish are an essential food source for shellfish and plankton in marine habitats, especially fish. The pollution produced by chlorine and bromine gas in

chlorofluorocarbons is believed to cause depletion of the C.F.C. ozone layer, which creates a hole in the ozone layer [13]. Acid rain emits sulfur dioxide and nitrogen oxides into the atmosphere from burning fossil fuels or decaying plants. Environmental problems are the behavior of individuals and industries that increasingly ignore protocol agreements to save the environment, such as agreements that may occur due to many induction activities that deviate from this international agreement where reductions in carbon dioxide emissions continue to happen. Then it is exacerbated by the greenhouse gas effect, which makes the global atmosphere even more chaotic. Environmental problems include increasing pollution that damages the climate, which impacts the depletion of natural resources due to waste management focusing on biodiversity [4]. Furthermore, the problem of deforestation is where illegal logging activities ignore the trees in the forest environment, resulting in the acidification of seawater. If this continues, this will bypass the principles of the Kyoto protocol, where waste-producing countries need to reduce CO₂ emissions [16].

Environmental issues such as global warming, energy reduction, pollution, and flooding have become commonplace in Indonesia. With the current global ecological conditions, efforts through educational channels by implementing relevant policies are potential solutions [22]. For example, a good education pattern in schools will impact student behavior as individuals who are aware of the importance of environmental awareness and will positively impact other industries if educated individuals enter society and industry. The international community also tries to save the environment through school policies and implementation [23]. The government, through the curriculum, can start by designing ecological teaching concepts with interactions and lesson content that empower students to be directly involved in reducing environmental problems [24]. In this way, students will gain a more fundamental understanding of ecological issues and have the right to make intelligent choices regarding environmental protection. Admittedly, the foundation of environmental education can be traced back to the eighteenth century when Jean-Jacques Rousseau underlined the importance of ecological education centered on the school environment and intellectuals [25].

For this reason, indigenous Indonesians are at the forefront of preserving the environment with local wisdom. They accompany the forest and live close to healthy environments [26]. In Indonesia, the industry is given an important role where they can work with parties such as the government to carry out projects that care for the environment. For example, clean water sources and other natural resources must be motivated to set aside their income to preserve nature [27]. For example, the COP26 meeting is the culmination of the U.N. meeting on global climate change for several country leaders; efforts must be continued in the future. Other examples include developing technologies

to extract carbon from the air that could help limit the effects of the most severe climate change in the future and halt the increase in global temperatures, which were previously estimated at 1.5 degrees [29].

Therefore, we carried out this study to explore whether government environmental protection is relevant through the concept and application of policies in the educational pathway with industrial behavior towards global ecological preservation and sustainability by reviewing previous research evidence and observing and analyzing government policies through education from various related publications environment [28]. In this way, researchers will gain an in-depth understanding of the relevance of the several variables mentioned earlier in research debates and explanations related to the research theme [29]. Therefore, we will present this understanding in a scientific report, environmental education policy relevance, and ecological awareness. Also, with this study, we will be able to develop new experiences and knowledge about concepts and policies for producing environmental protection science that is continuously useful to stakeholders, ecological studies, environmental policymakers, and other industrial practices [30].

Method and Materials

Collection Theory and References

As we mentioned above, this paper aimed to find the relevance of environmental protection education policies to the behavior of ecological stakeholders (industry, communities, and individuals) to preserve the environment. Therefore, The author has conducted a series of data searches on many environmental journal publications, including Elsevier, Sagepub, Google Books, Taylor & Francis, Natural Climate Change, American Naturalists, Biological Conservation, Ecology, Environmental Education Research, and websites that talk about protection issues. Environment through environmental education policies [31]. Search data keywords such as “environmental education,” “environmental policy,” “environmental behavior,” “environmental stakeholders,” “environmental sustainability,” environmental protection, “environment and conservation,” etc.

Concept Analyses

Fig. 1 explains the role of environmental stakeholders in protecting the environment’s sustainability globally. Ecological awareness, as described earlier, is part of the effort to achieve national education goals that can be achieved through education in schools to protect the Sustainability of the Earth [32]. So that every individual, both individuals, community groups, and industry, is expected to be more aware of the importance of a healthy environment, considering that environmental degradation is detrimental to individual health and the industry’s survival [33]. It happens because all the chains of life are broken, resulting in the deterioration of the quality of the environment. So, education will shape life and awareness, including environmental awareness and the impact of knowledge and skills received at school. Such understanding will help citizen participation so that environmental restoration issues related to destruction will become collective awareness [34].

Framing Data and Analyses

This study used a hybrid approach to data collection. We are conducting visits to schools and related offices for primary data purposes. After the data is collected, we then examine it, which involves coding systems, in-depth evaluation, evaluation, and interpretation in producing conclusions that answer questions validly [34]. We specialize in published data from 2010 to 2021. We report this data in a qualitative descriptive data design [35]. To see the synchronization and illustrative data with systems analysis, we present a table explaining the environmental policy framework for education and environmental policy stakeholder commitment. We use a phenomenological approach to analyze the results by exploring the broadest possible data, followed by detailed evidence in the form of published data [36]. In designing the report format of this study, we critically assessed the use of methods, published approaches, and validity and reliability [37]. Thus, the article and its samples are acceptable content. In other words, this data does not only present an overview but an assessment of the authenticity of the information where these findings will contribute to and strengthen knowledge about nature protection education in terms

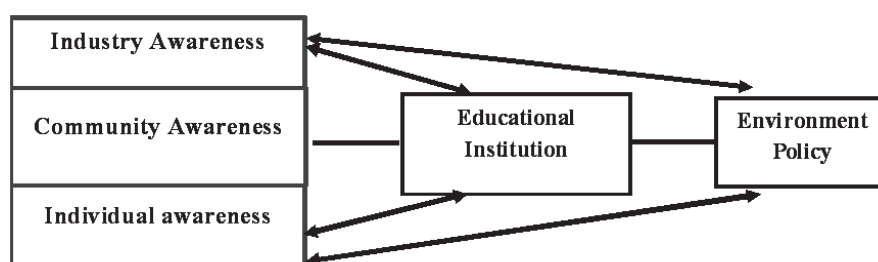


Fig. 1. Study Framework of Stakeholder Commitment to the Environmental Sustainability.

of the compatibility aspect between educational policies and environmental practices by industry and the wider community [38].

Results and Discussion

We evaluated several stakeholders involved in environmental protection in this study. There were 11 stakeholders engaged in discussing this review data. The stakeholders include government, consumers, companies, society, media, millennials, labor organizations, celebrities, culture, individuals, and schools, as the foundation for achieving government-facilitated environmental conservation concepts and policies [39]. A number of these stakeholders hold opposing views on environmental conservation measures. The community is committed to maintaining and preserving the environment through industry-related efforts to prevent environmental pollution [40].

Individuals promote self-awareness and education for their families or workplaces. Schools provide capital and models for strengthening individuals, communities, and industries to foster positive attitudes and commitments to environmental safety [41]. The findings of this review, which are synchronized with previous research studies, explain the foundations of commitment to saving the environment and ecological education policies and are offered the concept of keeping the background with a global (international) commitment approach, government commitment, and local wisdom in preserving and maintaining goodness for protecting the environment [42].

The Commitment of Environmental Stakeholders

Along with technological civilization on earth, environmental changes continue to occur; changes are not only in one place but can seek global changes [43]. In terms of increasing the impact of greenhouse gases and global warming, globalizing local damage, such as littering behavior, causes flooding and erosion. Regarding local behavior, industrial behavior is both in rural and urban areas [44]. Such as the behavior of farmers in opening and adding new land and using various chemical technologies in land management systems [45]. Conventions on earth continue to be implemented almost every year with the initiative of how the world's leading communities act, whose agenda is to save the Earth's Sustainability with the principles of development and regulation of the leaders of each country with a pattern of activities that all want to reduce environmental damage [46].

It must be admitted that development must continue, and human activities endanger economic power; the balance of nature is inappropriate. Often every policy by each country no longer protects the environment but systems and regulations that sometimes damage the environment [47]. This background makes the

relevance between the commitments between countries as outlined in the design and policies of schools that have the authority to change student behavior with an environmentally sound education system. Generations of both students and other communities and industries can apply it [48]. Everyone believes that with a healthy environmental education policy, the government has tried to save the earth from ecological damage caused by human activities to achieve sustainable development [49]. All environmental insight is essential because, through education, society and industry will understand the knowledge and skills to shape ecological governance from simple things that are local and will help the wider community [50]. Everything starts from how education is designed about the environment, how skills are given to students, and how students' attitudes and abilities in adopting behaviors and practices that protect the environment and understand the principles of sustainable development both for development and for the environment in which they live [51].

The task of maintaining and promoting the sustainability of a healthy environment as a result of the impact of all development actions can be minimized, one of which is through government policies that are consistently embodied in educational policy items in schools so that these policies will encourage the efforts of the nature conservation movement starting from the younger generation who will become the following generation development actors [52]. With the procedure in the field of environmental education in the future, it will move many parties, especially industry and the community, to care for the environment in the following year, which will continue to increase along with sector and human business activities, which will undoubtedly increase environmental damage [53]. If they do not dare to provide a solution in the form of a healthy ecological education policy, of course, from the education sector, both formal and informal, that later this policy will undoubtedly have an impact on the government and the ability and awareness of world citizens in the form of global citizens in the state of statehood [54].

Another factor that increases the possibility of environmental damage is where the world's population has developed and prospered by brutally expanding the exploration of natural resources by ignoring the security and comfort of the rich earth [55]. Many countries cannot control the increase in industrial activities to obtain significant development [60]. It will undoubtedly affect environmental behavior and health. Consumption will continue to increase along with increasing transportation. All of this is the human desire to gain prosperity by meeting life's needs and growing daily [56]. It will impact the environment by using home equipment from the school office and all human business activities until then. That will affect increasing demands for exploring all human needs for educational policies in the school environment. Thus, education will provide awareness to all components of the nation

because they will be the generation responsible for environmental sustainability in the future [57].

In addition to the impact of the widespread use of technology for life, another factor driving the increasing environmental damage is the economic growth factor of the community, especially in developed countries where the desire to fulfill the quality of life will create problems for the environment [58]. The quality and comfort of a healthy environment in the future, the environmental impact can be further increased when many institutions still maintain their desire for welfare [59]. Developed countries whose commitment to preserving the environment is still low, plus there is an understanding in developing countries where they contribute to a healthy environment [60]. Therefore, the policies of developed countries have yet to be responded to by many institutions, including the government, in preserving a healthy environment. It is also a wrong mindset where the encroachment of natural resources is getting out of control, resulting in uncontrolled exploitation of the environment that destroys ecological boundaries. It impacts sustainable development but ignores aspects of a healthy environment, the quality of life is getting out of control at the consumptive level [61].

The findings of this study, which are supported by evidence from previous studies, are one element of the originality of the study's results on implementing environmental education policies in schools with relevance to individual and industrial behavior [62]. In a shorter understanding, the behavior of industry and the community, in general, is undoubtedly closely related to the learning they get when they are still in the learning period at school. It makes much sense because, with the model and approach taken by the school as the implementer of the implementation of environmental politics, which is a state mandate, it has been implemented by having a planned program system supported by existing school resources as well as detailed curriculum documents that hint at the mission of the message by the institution or institution countries to run in the context of schools [63].

Environmental Protecting Policy

Implementing environmental education policies included in the general education curriculum is mandatory for all schools in Indonesia [64]. For this reason, the government has incorporated this issue into the curriculum as a policymaker. It obliges schools to implement environmental documents considering a systematic approach to ecological education required in national policies [63]. It allows all students to be actively involved in environmental improvement, starting from schools involved in their environment by forming a global concern for the environment [64]. Thus, the role of schools is significant for the success of the policy of protecting life which has been translated from the Kyoto international message through academic

units such as schools wherein the end students as living beings are all part of being interactively involved with the environment. The natural environment will include all systems that support all living things [65].

The climate made by people is a fake framework upheld by the indigenous habitat. The condition of the regular habitat eventually decides the quality and endurance of people on the planet. From that, ecological training should start to be created through specific types of mindfulness, understanding, and an uplifting perspective adjusted among information and abilities that permit understudies to effectively engage with ensuring the climate [66]. School occupants advance sound and maintainable ways of life by developing agreement and attention to the equilibrium of the effect of human conduct, social conduct, monetary entertainers, and even legislative issues with the goal that ecological instruction includes people to appreciate and like what people have made in the past now and conservation later on [35]. Later, this is a type of direction and execution that is relied upon by the public authority to school units to be given to the more youthful age [36].

As an educated young generation, students inspire Indonesia to save the future environment [37]. Therefore, environmental education policies and regulations in schools must be designed to assist educators in balancing educational and environmental programs, which will later contribute to students' thinking and appreciation by having a deep understanding and the ability to manage ecological management in active collaboration with government information systems and technology – managing a healthy environment [38]. So what is very important from the science of government and environmental education policy for this school is the concept of a policy that has a specific goal, namely to produce educational attributes that are aware of and understand the meaning of caring for the environment, the importance of using technology [39]. However, it is not the essence of the need for a healthy environment that the impact of technology is growing day by day. At least the younger generation, as actors who have received environmental education, can understand and apply the balance between technological developments and protecting the environment to maintain a healthy environment for the future [40]. The framework for evaluating the implementation of environmental education at the school level is that every detail of environmental education regulations in schools must provide meaning for educational subjects to have a healthy ecological perspective. Management starts from the school by focusing on the curriculum and managing educational resources in schools toward healthy environmental governance [41].

Table 1 shows the school for education environment policy framework consisting of collective consciousness, planning, knowledge and skills, application, and participation. Knowledge and skills about the environment given in schools are an effort that has

Table 1. Framework education environment policy.

Steps	School Plans	Curriculum Content	Resources	School Application
Collective consciousness	Have a balanced education management master plan	It contains environmental education content that teachers can easily apply to students. The spirit of loving and appreciating the environment	Schools have sensitive plans and resources to understand the importance of a healthy, clean environment, and so on. Awareness of the environment supported by adequate infrastructure	Environmental education in schools is run from state policies designed in the curriculum to change attitudes toward the school environment. All elements of the school can create a clean and healthy environment.
Planning	Focus on environmental management in educational institutions. A book that contributes to improving the quality of education in Indonesia through proper and sustainable management of the school environment	The content of environmental education must be able to change students' views and behavior towards the environment to be taught to students so that later they become parties who care about their environment.	As the curriculum-based approach mentions, the schools plan excellent resources to implement environmental education.	The school has a master plan to support the school curriculum to succeed in environmental education curriculum that is carefully planned.
Knowledge and Skills	School has enough resource to implement pendidikan lingkungan sehat. The school has a schoolyard management master plan to support the success of measurable and programmed environmental education, explore environmental issues, engage in problem-solving, and take action to improve the environment.	The school has substantial knowledge and skill in teaching and learning information protection content to students that will be implemented accordingly.	Schools have good teacher resources, funds, management, commitment, and infrastructure for the success of environmental education in the school environment.	Knowledge and skills are applied in every school, followed by management and planning skills that involve all components of the school and are supported by adequate leadership.
Application	The school has an excellent plan to implement the message and policy of healthy environmental education in a measurably programmed manner and evaluate its level of success	In carrying out the government's mission, efforts to save the environment, the school is expected to be able to implement it following what is mandated in the curriculum in a measured and evaluated manner	schools have adequate resources to enforce government policies in terms of environmental education in schools so that the results can be seen clearly	schools have insufficient resources to implement government policies in terms of environmental education in schools so that the results can be seen clearly
Participation	All elements of education in schools must be involved with Planning and achieving environmental education goals.	All content mandated by the government through the curriculum is still being applied with a fully measurable and programmed approach to school community participation.	School resources must be optimized based on the participation of all parties so that environmental education can be successfully carried out with careful preparation.	For the goals of healthy environmental education in schools to be implemented, the participatory approach will support schools in achieving the goals of environmental education.

Source: Processing data, 2022

excellent prospects for the future of environmental health [42]. The pattern of school work aims to provide understanding and awareness of a particular environment by systematically and measurably involving many school communities in a participatory and collaborative manner. All of which seek to preserve the environment for a better life. From the past until now, the existence of schools has been one of the most effective ways to train students to think and act wisely in their individual lives, including the environment wherever they are, with a teaching system that involves various stakeholders, how the preparation steps and support for a comprehensive curriculum as well as the availability of school resources are fundamental actions that can collaborate with all of these potentials. It is a systematic work toward learning productivity, especially in education and environmental awareness [42]. That will be implemented through a comprehensive planning and governance system that involves educators, curriculum design that includes all the knowledge and skills to be achieved, and monitoring activities [43].

The existence of a school is a forum in charge of implementing a program of human resource change based on environmental policies such as the Kyoto agreement, an effort to promote and commit to the continuation of ecological education that rests on the shoulders of every state leader in directing this concept to be elaborated at the school level [44]. Thus, students will gain knowledge and expertise in managing environmental management, impacting attitudes and participation in everyday life. Such a work pattern is certainly very relevant to the goals of environmental education, with planned and measurable goals developed by many countries participating in the Kyoto agreement conference. Every citizen of the earth commits to the ecological knowledge obtained by a school, positively impacting life globally. It must be supported by the innovation and creativity of state leadership in determining the future direction of managing existing resources for sustainable development that positively impacts the environment [45].

Table 2 reported the baseline of stakeholders' commitment to protecting the environment for sustainability. Awareness and the importance of a healthy living environment is a shared need. The industry is one component that is very influential on environmental sustainability. The discussion above is a concrete form of how the company and its employees increase their commitment to protecting the environment. The table above is a framework to inform how environmental protection policies in companies can be promoted [46]. As a company, we must guide how ecological approaches must be understood and applied collectively to create awareness, starting with how the company implements a plan by following the rules. At least the company's environmental protection policies and work programs provide adequate infrastructure so that all procedures can be applied maximum [47]. Of course, with the support of knowledge and skills possessed

by each industry, the policies they have prepared must have an understanding and implementation procedures that lead to optimal achievement. All policies that are applied must, of course, have adequate resources for Planning, application, control, and assessment of how the policy has been achieved. It is believed that the company's ability, skill, and skill will produce real work [48].

At the application level, of course, existing procedures, policies, and resources must be deployed so that the objectives of the environmental policy in the company can be carried out optimally by looking at how the application of policy procedures is to the company's ability to evaluate so that the objectives are achieved as required. ISO 14001 and the Kyoto treaty proclaimed [49].

Green Mindset of Environmental Protection

The industry is a stakeholder that plays a significant role in the sustainability of the green environment [50]. Initiative determines the development of human civilization in all fields. Role in the area of production and consumption of citizens of the earth. The sector has now shaped life's patterns, changing all human life behaviors [51]. The part of industry has changed the management of environmental space. The sector has also exploited the environment, changed production patterns, and included consumption patterns to control and regulate the impact of all that on the environment is the effect of the industry's existence [52]. So the presence of environmental education in schools will undoubtedly be able to determine the mindset of the industry, where the driving force of the industry is the generation that has received ecological education in schools, in society, culture, and even the role of religious teaching which requires participation in maintaining environmental safety from distress and harm-destruction [53].

Likewise, the role of the community in environmental management has been regulated in state regulations through article 70, paragraph 2, where the part of every community in the law on environmental protection and management includes social supervision, submitting suggestions, opinions, proposals, and objections to every act of destroying the surrounding nature [54]. The public has the right to file a complaint if an industry or any party ignores sound environmental protection laws and actions that threaten the safety of debt and people [55]. For this reason, so that the community can play a role, the government, as the responsibility holder, must provide education and training so that the community has the ability, awareness, and knowledge to manage waste and waste in their communities [56]. The behavior in the community can apply rules and sanctions when parties try to carry out illegal logging and dispose of garbage so that community contributions can help the government after the district has received education in schools and the community itself.

Table 2. The framework of Environment Policy of Stakeholders Commitment.

Phases	Procedure	Policy	Resources	Application
Collective awareness	Have an ISO 14001:2005 environmental management master plan and collective awareness	It contains environmental policy content that is easy to apply by companies with the spirit of loving and appreciating the environment.	The company has good resources to understand the importance of a healthy, clean environment, and so on. Awareness of the environment supported by adequate infrastructure	Environmental policy is run from state policies designed in excellent policy to change the organization's environment. All elements of the company can create a clean and healthy environment.
Planning	Plan on environmental management in business to improve the quality through proper and sustainable management of the industrial environment	The content of environmental policy must change the views and behavior of all staff towards the environment to be planned so that later they become parties who care about their environment.	The company plans good resources to implement environmental policy as mentioned in the government policy document.	The company has a master plan to support the company policy to succeed in the carefully planned environmental issue.
Knowledge and skills	The company has sufficient resources to implement sound environmental policies in managing industrial areas to support the success of measurable and programmed environmental policies that explore ecological issues and engage in problem-solving.	The company has substantial knowledge and skill in learning information protection content to students that will be implemented accordingly.	The company has adequate resources, commitment, and good infrastructure for the success of environmental policies in the industrial environment.	Knowledge and expertise are applied in every company, followed by management and planning skills that involve all components and are supported by adequate leadership.
Application	Have a good plan to implement messages and policies for healthy environmental education in a measurably programmed manner and evaluate the level of success	In carrying out the government's mission to save the environment, the company is expected to be able to implement what is mandated in the agreement in a measurable and evaluative way.	Having adequate resources to implement government policies in terms of environmental policies in the work environment so that the results can be seen clearly	There must be a potential place for implementing environmental policies considering that future staff is easy to prepare in the work environment.
Participation	All policy elements must be involved in a planned and measurable manner so that the objectives of environmental policies are achieved.	All policies mandated by the government through policies are applied with a fully measured and programmed citizen participation approach.	Organizational resources must be optimized based on the participation of all parties so that environmental education can be successfully carried out with careful preparation.	For the objectives of a healthy environmental policy in the company to be implemented, a participatory approach will support achieving a healthy ecological goal.

Source: Processing data, 2022

In addition to community involvement, individual behavior in preserving a healthy environment also plays a role; as an example of littering behavior, this includes behavior that does not support maintaining a healthy environment [57]. Often found a lot of river pollution due to individuals who need environmental awareness. Burning garbage indiscriminately is also a behavior that goes against wisdom, wastes energy, and does not want to use recycled products. On the other hand, reforestation and prohibiting illegal hunting are behaviors under healthy environmental policies. All roles and models of support from individuals will undoubtedly occur if the community, collectively and individually, has received education and training in schools [58].

The government and the community carry out the most popular environmental conservation efforts [59]. Governments with the given mandate can make policies and ecological governance laws with the laws and sanctions they create for the success of environmental protection in each country. Through a strategic role through education in the community, a clear and firm role of government in environmental protection will determine the direction and safety of the environment [60], confirming that the government's role is enormous with the mechanism of legislation and resources so that environmental agreements and agreements Kyoto agreement can be realized as desired.

As a large country, Indonesia has additional rules and customary law sanctions, which have positively impacted the government's efforts to protect a healthy environment [61]. For environmental protection to become a shared task, the government has empowered indigenous peoples to help preserve the environment. By involving indigenous peoples in decisions related to various environmental programs, the government will be the party that can solve all environmental problems. Because the indigenous community component has helped manage all resources to continue a healthy environmental protection policy [62]. It is in line with international environmental law, which also provides legitimacy for the protection of customary law, such as the U.N. declaration on the rights of indigenous peoples [63].

This role will undoubtedly contribute to environmental sustainability and protection by involving indigenous peoples related to customary land rights, which often become conflicts between communities and certain industry parties. So Indonesia, as a country that has many tribes, customs, and laws of natural wisdom, will certainly help protect the environment. Customary law also has a strategic position in positive national law to resolve and monitor actions that harm forests and environmental protection [64].

We reiterate that this study aims to understand the relevance of environmental education policies (from now on, abbreviated as P.L.H.) in schools with the attitudes and behavior of industry, individuals, and communities in environmental planning efforts. This study will

get input from generations of students to change their views and preserve the environment. For the younger generation who previously felt ignorant of the environment, it is hoped that they will switch to caring about their habitat [65]. To prove our assumption on the relevance of the two variables, environmental education policy in schools with the impact of percussion on both individuals and industry, we conducted a discussion with the support of evidence from previous findings from various publication databases and websites that actively discuss issues of environmental preservation through education policy approach in schools.

In this section, we presented a discussion of the results of this study. Based on the environmental education policy framework in schools above, the approach to implementing ecological education policies is under the concept desired by the government as a trustee and national goal [66]. Our findings prove that the development and introduction of environmental education programs in Indonesia are closely related to the framework model at the school level as the object of application [67]. We have designed the framework approach in which the educational implementation activities are believed to create awareness among the school community to preserve a healthy living environment. It starts with school-centered activities, which have implemented a policy framework starting with school planning steps linked to curriculum content, backed up by school resources [68]. So that the application of the policy is oriented towards Planning and then understanding the environment and application by involving the participation of the school community, starting from students, teachers, staff, and school leadership, when viewed from the goals to be achieved on the target of awareness of the importance of the environment, every school should have a good plan balanced between the implementation of the school's ability and the marks and what is desired by the government [69].

Indeed, in carrying out teaching programs related to environmental education, the first thing that is very urgent to think about is the effort to formulate a focused, planned program that has clear goals which are all related to the readiness of teachers to implement environmental teaching values as stated in the curriculum. By relying on school resources, the application can produce how it is measured and evaluated systematically [70]. Of course, the success in implementing environmental education policies is undoubtedly very dependent on the skills and knowledge possessed by teachers and schools where, from the planning stages of implementation and involvement of all parties based on the understanding and ability to develop teaching and evaluation programs that are oriented towards the output that can be achieved with the teacher's ability to become a model both in terms of the realm of knowledge and skills [71].

The next important thing is that efforts to implement environmental policy-based learning at the school level should first have a plan that is easy to apply, have a vision

and mission that follows curriculum guidelines, and the implementation stages are supported by the existing infrastructure so that all policies and approaches that taken can be easily implemented at the school level [72] which of course involves many components such as students, teachers, school committees, supportive leadership and all school communities who have roles and models that must be applied [73]. In the sense that collective participation will give color to the achievement of results following the desires of both government schools and international units, where the obligation to protect a healthy environment must be carried out collaboratively involving numerous primary components of the school community, there will be a color to the achievement of results [72].

Efforts to synchronize education policies and environmental awareness and conservation are things that have never been completed to be studied [74]. However, at least some variables we have learned in the study. Environmental protection education policies must have a framework that combines all the variables involved. How is the commitment from the Kyoto agreement that binds every country leader to continue to be highly committed to making policy enforcement efforts to all components of a country both in industry, education, and the general public so that they commit to collective awareness and participation to preserve the environment [75]?

For example, how schools apply government policies on environmental protection that have been standardized through the education curriculum. Likewise, the industry and companies must always be in high synergy

in using environmental conservation policies that aim to generate awareness for industrial components to protect the environment by applying various persuasive but binding approaches in the company environment where employees work [76]. Likewise, communities as citizens of the earth must have collective awareness to participate in genuine efforts to increase the government's commitment to continue preserving a healthy, beautiful environment by implementing various measures that can positively impact the continuity of protection. Of course, it can be done by the government with various promotional programs to reduce waste in daily life [77]. How can the government promote energy conservation that can work together with businesspeople and industry by collaborating with communities that are members of various organizations and projects where the commitment to preserving a healthy environment can continue?

Fig. 2 describes the role of stakeholders in saving and ensuring environmental sustainability. International protocols, government policies, and local wisdom are the foundation for developing ecological education for several stakeholders (industry, community, individuals, and school administrators). This commitment is essential as a guarantee to create synergy in developing natural resources, agricultural resources, human resources, and water resources. In addition, this commitment generally prevents or reduces global warming, threatening the earth's population. International protocols (such as the Kyoto protocol) have become a reference for all institutions to maintain and care for the environment, then adopted by the government to become derivative

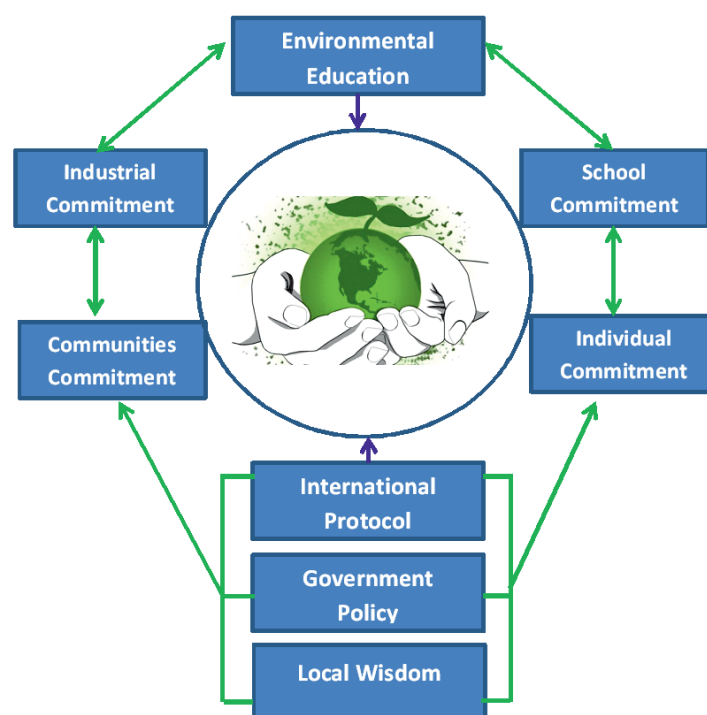


Fig. 2. Role of environmental Stakeholders in Protecting the Environmental Sustainability.

Table 3. Sample Introduction to the Caring and Cultured Environment Movement in Schools in Cirebon, West Java-Indonesia.

No.	School Level	Status	Total Schools
1	Primary	Public	876
2	Primary	Private	54
3	Secondary	Public	80
4	Secondary	Private	120
5	High School	Public	21
6	High School	Private	26
7	Vocational	Public	8
8	Vocational	Private	100
9	Islamic primary	public	9
10	Islamic Primary	privat	167
11	Islamic Secondary	Public	12
12	Islamic Secondary	Private	119
13	Islamic High School	Public	5
14	Islamic High School	Private	63
15	Pesantren	Private	35
Total			1695

Source: Cirebon District Environment Dept, West Java, Indonesia, 2022

regulations. However, the community has practiced local wisdom in maintaining environmental sustainability for generations. Anyone can practice the conceptual framework from Fig. 2 based on togetherness to save the environment. The study from this review can be used by interested parties to synergize actions or policies in managing stakeholders to protect and care for the environment.

In simple terms, school environmental education activities support extracurricular activities such as assigning assignments to students on activities to develop students' talents and interests in the environment [78]. Within the framework of environmental education, it can be linked to other components, such as environmental protocols. For example, in an extracurricular program, the teacher can involve students in campaign activities to combat ecological damage [79], in addition to students learning about the subject matter and indirectly learning how to overcome environmental damage in academic programs used as learning resources for teachers [80]. Meanwhile, the teacher can assign students to look for or record forms of ecological damage around their homes for co-curricular activities. In addition, the government that has the authority can also control the industry and the community to maintain environmental sustainability in the school environment [81]. The role of the parties in the environmental protection activities referred to

above is classified as the type implemented in many developed countries. School becomes to strengthens the character of a good environment. Schools are guided by the Regulation of the Indonesia Minister of Education and Culture Number 8 of 2016 concerning the Environmental Education Unit program. With the illustrative framework above, the relevance of environmental education to the parties' behavior can work together with one determination to preserve the environment for highly synergistic work on protecting ecological functions. Thus, an understanding of the relevance of environmental conservation will be formed [82]. Environmental education in schools is also provided by granting access to ecological participation for school residents, the community, industry, individuals, and the government to preserve the environment jointly.

Efforts to preserve the environment are interrelated with maintaining environmental sustainability as a state policy [83]. From the illustration above, it is clear that the framework for environmental conservation and the interrelationships of the parties involved in supporting environmental protection is evident. The environment's carrying capacity starts from international protocols, government policies, and local wisdom [84]. So that the cultivation of understanding and character is strategic, school involvement is very supportive. Through schools, environmental education can be transferred to school residents. Likewise, industries with commitments and regulations will control the parties to pay more attention to a healthy environment [72]. The last is that the role of the wider community is also significant, where community involvement participates in protecting and maintaining the environment because the benefits of a healthy environment do return to the community and individuals with their independence and self-discipline in efforts to maintain a healthy environment. So from here, there is a relevance between environmental education and industrial behavior; society and individuals play a vital role in preserving the environment [85].

Application of Environmentally Friendly Behavior (PRLH) for school/madrasah residents to behave environmentally friendly, including maintaining cleanliness, sanitation, and drainage, sorting and disposing of waste in its place, managing waste with 3R (Reuse, Reduce, Recycle), planting and maintaining trees/ plants, water conservation namely the management of clean water through technology or social behavior, convenience and productivity. Energy conservation, namely actions to reduce the amount of energy use without reducing security, innovations related to the implementation of other PRLH. The Planning for the Caring and Cultured Environment Movement in Schools (PBLHS) movement includes planning activities for the PBLHS movement, implementing the PBLHS movement, and monitoring and evaluating the performance of the PBLHS movement, guided by the Adiwiyata School Criteria

as follows: PBLHS Movement Planning, weight 20%, Implementation of the PBLHS Movement, 60% weight, Monitoring and evaluating the implementation of the PBLHS Movement, weight 20% so that the maximum total fulfillment of the Adiwiyata school criteria is 100% which is located in the administrative area of Cirebon Regency, which can be seen in the following Table 3.

Conclusions

Finally, this study has produced main points regarding the relevance of government policies regarding environmental education policies and behavior and environmental protection awareness in the industry, individuals, and the general public. We prove the results of this study that there is relevance to some of the variables above by using a literature exploration approach as evidence of published data and field data collection which convinces that these findings have answered the research problems. As for the essential points, we describe how the implementation of environmental policies at the school level in a global context is adjusted to the Kyoto international agreement. How the industry and community are committed to protecting a healthy environment? So, one of the concrete evidence that has been implemented is the protection policy in the environmental education curriculum through application in the form of learning and training in the school context.

As explained in Fig. 2, the final report of this study can conclude that the parties and the duties of each partner in protecting the environment, such as individuals, communities, and industry, are in saving and ensuring the maintenance of a healthy natural environment. The involvement of the world community, state policies, approaches, and policy education to awaken individuals have contributed to driving collective awareness of environmental preservation. In addition, this responsibility prevents or reduces environmental dredging, a global population hazard. International community commitments, such as the Kyoto healthy environment convention, have become a reference for all world leaders to protect and care for the environment, which is then adopted by public authorities as guidelines for school communities.

However, a government responsive to the environment has prepared its citizens intelligently to preserve the natural environment. The parties involved in the framework in Fig. 2 are a harmonization effort to save the environment from destruction. This study can be used by multiple parties investing in activities or approaches to oversee each party involved to ensure environmental awareness education policies. In the next point, we also explain that environmental education policy is a critical practice that can have an impact on the behavior of industrial society and individuals so that they remain agents in terms of environmental protection

in an era of growth and technological progress, which is sometimes not balanced between efforts to improve and protect the environment. In another section, we also describe the obligation to organize a sustainable environmental life, not only the government's duty but also the duties and responsibilities of other institutions to complete the constitutional mandate to preserve environmental education. In the end, we also present much evidence of findings from previous studies. Therefore the originality of this research is supported by previous research evidence where environmental education policies are very closely related to the behavior and awareness of industrial society more broadly. These findings will become significant input to prove the importance of the national education and awareness movement at the school level to jointly maintain and create a sustainable and beneficial environment for all parties.

Acknowledgments

This project has been supported financially by the Directorate of Higher Education of the Republic of Indonesia. Therefore, we express our gratitude; at the same time, we extend our thanks to our colleagues and expert editors for their assistance and suggestions, enabling us to execute this project as intended.

Conflict of Interest

The authors declare no conflict of interest.

References

1. NIZARDO N.M., BUDIANTO E., DJUWITA R. Plastic waste management model solution in Ciliwung River Basin. In I.O.P. Conference Series: Earth and Environmental Science. I.O.P. Publishing, **716**, 012037, **2021**.
2. ZIMRING C.A., RATHJE W.L. Encyclopedia of consumption and waste: the social science of garbage. Edition ed. Sage, **1** **2012**.
3. SHERIFF G.I., I.R.O., I.U. From Kyoto protocol to COPENHAGEN: A theoretical approach to international politics of climate change. African Journal of Political Science and International Relations, **7** (3), 142. **2013**.
4. SINGH N., SINGH S. A modified mean gray wolf optimization approach for benchmark and biomedical problems. Evolutionary Bioinformatics, **13**, 1176934317729413. **2017**.
5. KARROW D.D., FAZIO X. Curricular Critique of an Environmental Education Policy: Implications for Practice. Brock Education: A Journal of Educational Research and Practice, **24** (2), 88, **2015**.
6. KIRA E.S., KOMBA S.C. The Status of geography textbooks for teaching and learning the concepts of meteorology and environmental education in Tanzanian secondary schools. **2015**.

7. SETTERSTEN JR R.A., BERNARDI L., HÄRKÖNEN J., ANTONUCCI T.C., DYKSTRA P.A., HECKHAUSEN J., K.U.H., D., MAYER K.U., MOEN P., MORTIMER J.T. Understanding the effects of Covid-19 through a life course lens. *Advances in Life Course Research*, **45**, 100360, **2020**.
8. DE MOYA MARTÍNEZ M.D.V., SYROYID SYROYID B. Music as a Tool for Promoting Environmental Awareness. Experiences of Undergraduate Education Students on the Production of Video Tales in the COVID-19 Pandemic. *Education Sciences*, **11** (10), 582, **2021**.
9. ALASE A. The interpretative phenomenological analysis (I.P.A.): A guide to an excellent qualitative research approach. *International Journal of Education and Literacy Studies*, **5** (2), 9, **2017**.
10. GONCALVES FILHO A.P., WATERSON P. Maturity models and safety culture: A critical review. *Safety Science*, **105**, 192, **2018**.
11. HOLLIDAY C.N., MILLER E., DECKER M.R., BURKE J.G., DOCUMENT P.I., BORRERO S.B., SILVERMAN J.G., TANCREDI D.J., RICCI E., MCCAULEY H.L. Racial differences in pregnancy intention, reproductive coercion, and partner violence among family planning clients: a qualitative exploration. *Women's Health Issues*, **28** (3), 205, **2018**.
12. BIBRI S.E. The IoT for intelligent, sustainable cities of the future: An analytical framework for sensor-based big data applications for environmental sustainability. *Sustainable cities and society*, **38**, 230, **2018**.
13. K.I.M., M. Science, technology, and the environment: the views of urban children and implications for science and environmental education in Korea. *Environmental Education Research*, **17** (2), 261, **2011**.
14. O'BRIEN K. Global environmental change III: Closing the gap between knowledge and action. *Progress in Human Geography*, **37** (4), 587, **2013**.
15. GRUBB M., KOCH M., THOMSON K., SULLIVAN F., MUNSON A. The'Earth Summit'Agreements: A Guide and Assessment: An Analysis of the Rio'92 UN Conference on Environment and Development. Edition ed. Routledge, 9, **9** **2019**.
16. GRUENEWALD D.A., SMITH G.A. Place-based education in the global age: Local diversity. Edition ed. Routledge, **2014**.
17. BODIN Ö., PRELL C. Social networks, and natural resource management: uncovering the social fabric of environmental governance. Edition ed. Cambridge University Press, **2011**.
18. MOCHIZUKI Y., BRYAN A. Climate change education in the context of education for sustainable development: Rationale and principles. *Journal of Education for Sustainable Development*, **9** (1), 4, **2015**.
19. BUCHANAN N.H. What kind of environment do we owe future generations? *Lewis & Clark L. Rev.*, **15**, 339, **2011**.
20. YORK J.G., VENKATARAMAN S. The entrepreneur–environment nexus: Uncertainty, innovation, and allocation. *Journal of Business Venturing*, **25** (5), 449, **2010**.
21. WILSON J. Stardom, sentimental education, and the shaping of global citizens. *Cinema Journal*, **27**, **2014**.
22. SATTERTHWAITE D. The Environment for Children: Understanding and acting on the environmental hazards that threaten children and their parents. Edition ed. Routledge, **2014**.
23. FRANKS D.M., DAVIS R., BEBBINGTON A.J., A.L.I., S.H., KEMP D., SCURRAH M. Conflict translates environmental and social risk into business costs. *Proceedings of the National Academy of Sciences*, **111** (21), 7576, **2014**.
24. AL-NAQBI A.K., ALSHANNAG Q. The Status of education for sustainable development and sustainability knowledge, attitudes, and behaviors of U.A.E. University students. *International Journal of Sustainability in Higher Education*. **2018**.
25. YOKOKAWA N., KIKUCHI-UEHARA E., SUGIYAMA H., HIRAO M. Framework for analyzing the effects of packaging on food loss reduction by considering consumer behavior. *Journal of cleaner production*, **174**, 26, **2018**.
26. WILLIAMS H., WIKSTRÖM F. Environmental impact of packaging and food losses in a life cycle perspective: a comparative analysis of five food items. *Journal of cleaner production*, **19** (1), 43, **2011**.
27. REDCLIFF M. Wasted: counting the costs of global consumption. Edition ed. Routledge, **2020**.
28. TANSZHIL S.W. Model pembinaan pendidikan karakter pada lingkungan pondok pesantren dalam membangun kemandirian dan disiplin santri (Sebuah kajian pengembangan pendidikan kewarganegaraan). *penelitian-pendidikan*, **305**, **2012**.
29. AGNES A.M., NOR A.R.M. Implementation of environmental education: A case study of Malaysian and Nigerian secondary schools. In., p. 28.
30. DARMAWAN M.D., DAGAMAC N.H. The situation of environmental education in senior high school programs in Indonesia: Perspectives from the teachers of Palembang. *Interdisciplinary Journal of Environmental and Science Education*, **17** (3), e2241, **2021**.
31. ZAENURI Z., SUDARMIN S., UTOMO Y., JUUL E. Habituation model of implementing environmental education in elementary school. *Jurnal Pendidikan IPA Indonesia*, **6** (2), 206, **2017**.
32. TSAI W.-T. An investigation of Taiwan's education regulations and policies for pursuing environmental sustainability. *International Journal of Educational Development*, **32** (2), 359, **2012**.
33. JACOBS G.M., RENANDYA W.A. Student-centered cooperative learning: Linking concepts in education to promote student learning. Edition ed. Springer, **2019**.
34. ANDERSON A. Climate change education for mitigation and adaptation. *Journal of Education for Sustainable Development*, **6** (2), 191, **2012**.
35. HUCKLE J., WALS A.E. The U.N. Decade of Education for Sustainable Development: business as usual in the end. *Environmental Education Research*, **21** (3), 491, **2015**.
36. KHAN S.H. Fostering Sustainable Development and Environmental Education Programmes: Role of Teacher Training Institutions and Colleges of Teacher Education. *African Educational Research Journal*, **1** (1), 8, **2013**.
37. PRIHANTORO C.R. The perspective of the curriculum in Indonesia on environmental education. *International Journal of Research Studies in Education*, **4** (1), 77, **2015**.
38. MAPPIASSE S.S., SIHES A.J.B. Evaluation of English as a Foreign Language and Its Curriculum in Indonesia: A Review. *English Language Teaching*, **7** (10), 113, **2014**.
39. LEE J., LEE M. Is "whole child" education obsolete? Public school principals' educational goal priorities in the era of accountability. *Educational Administration Quarterly*, **56** (5), 856, **2020**.
40. HANSEN J., KHARECHA P., SATO M., MASSON-DELMOTTE V., ACKERMAN F., BEERLING D.J., HEARTY P.J., HOEGH-GULDBERG O., H.S.U., S.-L., PARMESAN C. Assessing "dangerous climate change": Required reduction of carbon emissions to protect young

- people, future generations and nature. *PLoS One*, **8** (12), e81648, **2013**.
41. FRASER B.J. Classroom learning environments: Retrospect, context, and prospect. *Second international handbook of science education*, 1191, **2012**.
 42. BISHAW A., LASSER J. Education in Ethiopia: Past, Present, and Future Prospects. *African Nebula*, (5), **2012**.
 43. MACDONALD D. Business and environmental politics in Canada. In *Business and Environmental Politics in Canada*. University of Toronto Press. **2019**.
 44. SACHS J.D. From millennium development goals to sustainable development goals. *The Lancet*, **379** (9832), 2206, **2012**.
 45. RODRÍGUEZ R., SVENSSON G., FERRO C. Assessing the future direction of sustainable development in public hospitals: Time-horizon, path, and action. *Health Policy*, **125** (4), 526, **2021**.
 46. LEE K. The green purchase behavior of Hong Kong young consumers: The role of peer influence, local environmental involvement, and substantial environmental knowledge. *Journal of international consumer marketing*, **23** (1), 21, **2010**.
 47. SORSA M. Team performance, communication, and shared situational awareness - control room resource management in the nuclear industry. In *Human Factors in the Nuclear Industry*. Elsevier, 151, **2021**.
 48. D.U., Y., WANG X., BROMBAL D., MORIGGI A., SHARPLEY A., PANG S. Changes in environmental awareness and its connection to local environmental management in water conservation zones: the case of Beijing, China. *Sustainability*, **10** (6), 2087, **2018**.
 49. SIEW R.Y. A review of corporate sustainability reporting tools (S.R.T.s). *Journal of Environmental Management*, **164**, 180, **2015**.
 50. RAMALEY J.A. Educating for a Changing World: The Importance of an Equity Mindset. *Metropolitan Universities*, **25** (3), 5, **2014**.
 51. POWER K., MONT O. The role of formal and informal forces in shaping consumption and implications for a sustainable society: Part II. *Sustainability*, **2** (8), 2573, **2010**.
 52. LAURANCE W.F., SAYER J., CASSMAN K.G. Agricultural expansion and its impacts on tropical nature. *Trends in Ecology & Evolution*, **29** (2), 107, **2014**.
 53. KAYLOR B.T. No Jack Kennedy: Mitt Romney's "Faith in America" speech and the changing religious-political environment. *Communication Studies*, **62** (5), 491, **2011**.
 54. PONDEVILLE S., SWAEN V., DE RONGÉ Y. Environmental management control systems: The role of contextual and strategic factors. *Management accounting research*, **24** (4), 317, **2013**.
 55. ALBELDA E. The role of management accounting practices as facilitators of the environmental management: Evidence from EMAS organizations. *Sustainability Accounting, Management and Policy Journal*. **2011**.
 56. RAHMAWATI P.I., JIANG M., DELACY T. Framework for stakeholder collaboration in harnessing corporate social responsibility implementation in a tourist destination to build community adaptive capacity to climate change. *Corporate Social Responsibility and Environmental Management*, **26** (6), 1261, **2019**.
 57. HARTLEY B.L., PAHL S., VEIGA J., VLACHOGIANNI T., VASCONCELOS L., MAES T., DOYLE T., METCALFE R.D.A., ÖZTÜRK A.A., DI BERARDO M. Exploring public views on marine litter in Europe: Perceived causes, consequences, and pathways to change. *Marine Pollution Bulletin*, **133**, 945, **2018**.
 58. DRISSNER J., HAASE H.-M., HILLE K. Short-term environmental education-does it work?-An evaluation of the 'green classroom.' *Journal of Biological Education*, **44** (4), 149, **2010**.
 59. CONRAD C.C., HILCHEY K.G. A review of citizen science and community-based environmental monitoring: issues and opportunities. *Environmental Monitoring and Assessment*, **176** (1), 273, **2011**.
 60. HOEL M., DE ZEEUW A. Can a focus on breakthrough technologies improve the performance of international environmental agreements? *Environmental and Resource Economics*, **47** (3), 395, **2010**.
 61. WEEKS S.M. Beyond the Traditional Courts Bill: Regulating customary courts in line with living customary law and the Constitution. *S.A. Crime Quarterly*, **2011** (35), 31, **2011**.
 62. BELLEFONTAINE E. Customary Law and Chieftainship: Judicial Aspects of 2 Samuel 14.4-21. *Journal for the Study of the Old Testament*, **12** (38), 47, **1987**.
 63. BARELLI M. Free, prior and informed consent in the aftermath of the U.N. Declaration on the Rights of Indigenous Peoples: developments and challenges ahead. *The International Journal of Human Rights*, **16** (1), 1, **2012**.
 64. TOUWE S. Local Wisdom Values of Maritime Community in Preserving Marine Resources in Indonesia. *Journal of Maritime Studies and National Integration*, **4** (2), 84, **2020**.
 65. WILLOW A.J. The new politics of environmental degradation: un/expected landscapes of disempowerment and vulnerability. *Journal of Political Ecology*, **21** (1), 237, **2014**.
 66. GALANG A.P. Environmental education for sustainability in higher education institutions in the Philippines. *International Journal of Sustainability in Higher Education*. **2010**.
 67. STERN M.J., POWELL R.B., HILL D. Environmental education program evaluation in the new millennium: What do we measure and what have we learned? *Environmental Education Research*, **20** (5), 581, **2014**.
 68. ENGLE J. Stories of tragedy, trust, and transformation? A case study of education-centered community development in post-earthquake Haiti. *Progress in Planning*, **124**, 1, **2018**.
 69. BLANDFORD S. Managing professional development in schools. Edition ed. Routledge, **2012**.
 70. SÁEZ-LÓPEZ J.-M., ROMÁN-GONZÁLEZ M., VÁZQUEZ-CANO E. Visual programming languages integrated across the curriculum in elementary school: A two-year case study using "Scratch" in five schools. *Computers & Education*, **97**, 129, **2016**.
 71. JULIE G.-N. A model of teacher professional knowledge and skill including P.C.K.: Results of the thinking from the P.C.K. Summit. In *Re-examining pedagogical content knowledge in science education*. Routledge, 28, **2015**.
 72. HART R.A. Children's participation: The theory and practice of involving young citizens in community development and environmental care. Edition ed. Routledge, **2013**.
 73. DERRY S.J., P.E.A., R.D., BARRON B., ENGLE R.A., ERICKSON F., GOLDMAN R., HALL R., KOSCHMANN T., LEMKE J.L., SHERIN M.G. Conducting video research in the learning sciences: Guidance on selection, analysis, technology, and ethics. *The journal of the learning sciences*, **19** (1), 3, **2010**.

74. BEXELL S.M., JARRETT O.S., PING X. The effects of a summer camp program in China on children's knowledge, attitudes, and behaviors toward animals: A model for conservation education. *Visitor Studies*, **16** (1), 59, **2013**.
75. ZELLNER M.L., LYONS L.B., HOCH C.J., WEIZEORICK J., KUNDA C., MILZ D.C. Modeling, Learning, and Planning Together: An Application of Participatory Agent-based Modeling to Environmental Planning. *Journal of the Urban & Regional Information Systems Association*, **24** (1), **2012**.
76. BOUBONARI T., MARKOS A., KEVREKIDIS T. Greek pre-service teachers' knowledge, attitudes, and environmental behavior toward marine pollution. *The Journal of Environmental Education*, **44** (4), 232, **2013**.
77. BARATA R., CASTRO P., MARTINS-LOUÇÃO M.A. How to promote conservation behaviors: the combined role of environmental education and commitment. *Environmental Education Research*, **23** (9), 1322, **2017**.
78. BRIDGES D., DAVIDSON R.A., SOULE ODEGARD P., MAKI I.V., TOMKOWIAK J. Interprofessional collaboration: three best practice models of interprofessional education. *Medical Education Online*, **16** (1), 6035, **2011**.
79. YOU S., LEE J., LEE Y., K.I.M., E.K. The effects of middle school art class with an empathy-based learning model. *Current Psychology*, **39** (5), 1819, **2020**.
80. NAVARRO-PEREZ M., TIDBALL K. Challenges of biodiversity education: A review of education strategies for biodiversity education. *International Electronic Journal of Environmental Education*, **2** (1), **2012**.
81. WATSON R.T., BOUDREAU M.-C., CHEN A.J. Information systems, and environmentally sustainable development: energy informatics and new directions for the I.S. community. *M.I.S. quarterly*, **23**, **2010**.
82. TURNHOUT, E. The politics of environmental knowledge. *Conservation and Society*, **16** (3), 363, **2018**.
83. HAWKINS C.A. Sustainability, human rights, and environmental justice: Critical connections for contemporary social work. *Critical Social Work*, **11** (3), **2010**.
84. MOLDAN B., JANOUŠKOVÁ S., HÁK T. How to understand and measure environmental sustainability: Indicators and targets. *Ecological Indicators*, **17**, 4, **2012**.
85. MUHAMMAD M.A. Relevance of Geographic Information Systems (G.I.S.) and Remote Sensing (R.S.) to Environmental Education: A Panacea for Sustainable Development in Nigeria. *Academic Journal of Interdisciplinary Studies*, **2** (10), 75, **2013**.