



Environmental education for the isolated tribe (*Anak Dalam*) community in Jambi Province on conservation and environmental sanitation

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ABSTRACT

Background: *Suku Anak Dalam* or commonly called *Suku Anak Dalam* are a community group who still adheres the traditions. Their life that depends on the forest makes them need to protect and preserve the forest where they live. This research aims to examine the environmental education of *Suku Anak Dalam* related to their environmental conservation and sanitation. **Methods:** This study used a qualitative-descriptive approach, with an ethnographic research design. The research informants were 10 people consisting of the *Suku Anak Dalam* and the outer community. Then the questionnaire distributed to 15 students who are of *Suku Anak Dalam* ethnic. Data analysis techniques are generally used in qualitative research, and added purposive sampling to analyze the samples that have been determined. **Findings:** The results show that *Suku Anak Dalam* in Nagasari Village use Traditional Law, namely the Seleko Adat, which presents local wisdom values to preserving the environment by referring to traditional law that obtained from generation to generation. The typical way of *Suku Anak Dalam* community in preserving the environment is variety. First, they have to plant 2 trees when the child born. Second, taking care of the environment, because Gods will be angry, example they would not use soap and they not defecate in the river. Third, enforcing Traditional law, because stricter than religious and state law. environmental conservation and sanitation knowledge is carried out from daily activities. **Conclusion:** Daily necessities such as bathing using bidaro leaves and urang aring leaves, washing in the river but not using detergent soap. They do not defecate into the river, but they have a toilet that located about 10 metres from the river. **Novelty/Originality of this article:** The novelty of this research lies in exploring how the *Suku Anak Dalam* community integrates traditional laws and daily practices into environmental conservation and sanitation, offering unique insights into their sustainable lifestyle.

KEYWORDS: conservation; sanitation; *Anak Dalam*.

1. Introduction

Humans are not only individual beings but are also considered social beings who interact with and depend on one another. Through this interaction, foundations are established in the form of methods, behaviors, and lifestyles that become habits over time, eventually evolving into a culture. The dynamics within social interactions indirectly influence society in long-term social and cultural processes, potentially forming new social and cultural orders (Ruotsalainen et al., 2017).

As social beings, humans need to adapt to their surroundings, a process referred to as adaptation. This adaptation influences the cultural elements produced. It reflects how societal dynamics can transform or construct a cultural environment, where mutual

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influence occurs between humans and their culture (Croucher & Kramer, 2016). This indicates that culture and humanity are inseparable entities. Environmental science serves as a process that guides individuals or groups toward a culture, including preserving original cultural values and maintaining the environment. Environmental science leads to practical stages in shaping interdisciplinary character (Surtikanti et al., 2017). Consequently, a strong sense of environmental concern arises, motivating individuals to remain active in preserving and advancing environmental development (Stapp, 1969).

Indonesia presents a rich cultural diversity, creating an environment that varies greatly from one region to another. Indigenous communities in Indonesia often reside in remote areas, relying on their natural surroundings for their livelihood. For these communities, daily life is deeply intertwined with interactions with the natural environment, which indirectly forms a culturally ingrained knowledge of how humans should harmonize with nature (Lynch, 2017). This synergy between humans and nature arises because humans possess intellect and the ability to think critically in responding to natural phenomena, enabling them to develop culture through the process of adaptation. The relationship between humans, nature, and culture is interconnected, forming a relation. Bruce (2007) states that culture is created by humans by observing natural phenomena that foster a sense of ownership toward nature. Thus, human culture will be shaped by all the activities humans do, adjusting to the natural conditions and the surrounding environment (geoculture).

Several studies demonstrate the relationship between humans and their natural environment, such as the Dayak Tanjung Tribe in East Kalimantan (Ngabekti et al., 2007), the Moronene Tribe in Southeast Sulawesi (Setiawan & Qiptiyah, 2014), the *Anak Dalam* Tribe in Jambi (Andhika et al., 2015), Dukuh Village in West Java (Hidayat et al., 2010), Naga Village in West Java (Pertiwi, 2016), the Ammatoa Kajang Tribe in South Sulawesi (Surtikanti et al., 2017), and the Aga Tenganan Pegeringsingan Tribe in Bali (Surtikanti et al., 2019). These studies highlight that many local communities continue to adhere to their ethnic environmental traditions, upholding the ancestral customs that emphasize the preservation and improvement of their surroundings (Ardan, 2016 in Surtikanti et al., 2017).

The presence of various ethnic groups across the Indonesian archipelago reflects the complexity of Indonesia's culture (Meliono, 2011). One example is the *Anak Dalam* Tribe (SAD), an indigenous ethnic group in Jambi Province, Indonesia. The *Anak Dalam* Tribe is known for maintaining its traditional customs, including a nomadic lifestyle. The population of the *Anak Dalam* Tribe is estimated to be 3,198 individuals (Ibrahim, 2013).

The social wisdom possessed by the *Suku Anak Dalam*, passed down through generations, serves as a foundation for preserving the forest, which they consider their home, thus requiring environmental care. For the *Suku Anak Dalam*, there is a belief that their ancestors would become angry and wrathful if the forest were damaged or destroyed. This would lead to disasters, as the loss of the forest is equated to the loss of life itself, leaving nothing to be inherited by future generations. Moreover, the current problem is the increasingly shrinking forest areas due to the construction of palm oil factories and other developments. The reduction of forest areas has resulted in inadequate food and water availability, causing the *Suku Anak Dalam* community to feel threatened. The various environmental issues outlined above highlight the need for conservation efforts. Developing an environmentally conscious character can be implemented through conservation education by fostering community awareness to preserve the environment (Lestari, 2019).

Community involvement in sanitation and environmental conservation is crucial to minimizing environmental damage. As stated by Berkes et al. (2000), humans need to be actively involved in environmental preservation. This effort should draw from various sources, not solely relying on scientific studies but also incorporating other sources of information.

Environmental education is an effort to change attitudes and behaviors among various stakeholders or community elements. Its purpose is to enhance knowledge, skills, and social awareness regarding the values associated with the environment and environmental issues.

This education aims to mobilize individuals to actively play their roles in environmental conservation (Dewi, 2014). As stated by Yusuf, there are three main steps in addressing environmental issues. First is raising awareness about the problem. Second is conducting an analysis to identify the root causes. Third is developing strategies for problem correction and prevention to ensure it does not recur (Yusuf, 2016).

Conservation is a human effort to preserve and protect nature. As stated in the Law No. 32 of 2009 on Environmental Protection and Management, "conservation is the process of managing, maintaining, and protecting a place to ensure that its cultural significance is well preserved." The objectives of environmental conservation include maintaining ecological processes that support life, preserving and showcasing genetic diversity, and sustaining the utilization of species and ecosystems. Thus, the principles of environmental ethics encompass two key aspects. First, the community is not only perceived as a social concept but also as a moral and ecological one. Second, humans are fundamentally not only social beings but also entities responsible for ecological life. These two principles should serve as the foundation for policies that prioritize the interests of both humanity and the environment, tailored to address the existing issues.

In efforts to maintain environmental sanitation, it is essential to provide clean water, ensure proper disposal of human waste and wastewater, and manage waste effectively. These efforts, which can be carried out in both promotive and preventive ways, include adopting healthy and clean living habits (Purwandari et al., 2013). Entjang (2000) emphasizes the importance of maintaining hygiene and environmental sanitation, which involves providing clean water for households, regulating the disposal of waste, wastewater, and trash, and ensuring that homes are kept clean to foster a healthy environment. Based on the background above, the author aims to explore in greater depth how the unique implementation processes of the *Anak Dalam* Tribe in Nagasari Village are carried out regarding environmental conservation and sanitation.

2. Methods

Environmental knowledge education is an effort to enable individuals to maintain the sustainability of their environment by providing explanations and motivation about the importance of adopting an environmentally conscious attitude, both within and outside of formal education, as the environment significantly influences human behavior (Ahmadi, 2018). Conservation is an effort made by humans to preserve or protect nature. According to Lestari & Sumarto (2019), conservation is defined as an effort to maintain, preserve, and wisely utilize the natural environment. The efforts made by the local community of the *Suku Anak Dalam* to preserve their inherited culture involve safeguarding their surrounding environment. Conservation data is measured using guidelines/questionnaires and interviews with members of the *Suku Anak Dalam*, including village chiefs, customary leaders, overseers, and several members of the *Suku Anak Dalam*, with questions related to environmental conservation.

According to Nursalim et al. (2020), environmental sanitation is defined as an effort to create a healthy environment through a way of life that controls the physical environment to prevent harm to human health and survival. Sanitation data is measured using guidelines/questionnaires and interviews with members of the *Suku Anak Dalam*, including village chiefs, customary leaders, overseers, and several members of the *Suku Anak Dalam*, with questions related to environmental sanitation.

The design of this research employs a qualitative approach. Bogdan and Tylor (Moleong, 2004) state that the qualitative approach is a research procedure in which data is described descriptively based on observed phenomena. The type of research design used is ethnographic design; according to Creswell, ethnographic design is a form of research that investigates a group within a natural environment (Creswell, 2012).

This research is conducted in Nagasari Village, Mestong District, Muaro Jambi Regency. Several reasons underlie the selection of this location, including the presence of a forest in

Nagasari Village, Mestong District, Muaro Jambi Regency, which is highly protected and preserved.

The subjects of this research are the *Suku Anak Dalam* community in Nagasari Village, Mestong District, Muaro Jambi Regency. The research participants consist of 18 informants, including 15 members of the *Suku Anak Dalam* (Temenggung, customary leaders, and others), a biology teacher from SMAN 3 Muaro Jambi, government officials from Nagasari Village, and the Head of the Environmental Agency of Muaro Jambi Regency, along with 15 supporting informants, who are students from SMAN 3 Muaro Jambi. The students were selected as participants because they interact with the *Suku Anak Dalam* community, based on their geographical location and social activities, directly engaging with the *Suku Anak Dalam* community, and have gained knowledge about conservation and sanitation through their educational institution. This is used to assess the alignment of their knowledge with the practices of the *Suku Anak Dalam*, which are based on traditional customs. The questions asked to the teacher focused on the importance of environmental conservation within the *Suku Anak Dalam* community. The teacher was interviewed about SAD's rules regarding conservation, the benefits of conservation practices by SAD, and the benefits of SAD's rules for the outside community.

The research instruments in this study reveal that the researcher serves as the key instrument for data collection. Data collection in this study involves several instruments. The primary data sources are obtained directly from the research process by meeting with the informants who are considered capable of answering the research questions. The total number of informants is 33, consisting of 18 individuals who agreed to participate in unstructured interviews and 15 students who agreed to fill out the research questionnaire. The researcher will analyze and explain the responses regarding the environmental knowledge held by the *Anak Dalam* Tribe and the ways in which they acquire knowledge about environmental conservation and sanitation.

Secondary data consists of data that can support the research findings. This data is generally obtained from various sources relevant to the ongoing research, or it can be defined as data gathered from external parties, not directly from the research subjects. In this study, the type of data pertains to the process of implementing sanitation and conservation practices within the local SAD (*Suku Anak Dalam*) community. The data collection technique employed is a non-test method, using instruments such as questionnaires and interviews to gather information regarding the implementation of sanitation and conservation practices.

The data obtained from observations, field notes, interviews, and questionnaires via Google Forms are analyzed using data analysis techniques in qualitative research. The percentage results from the questionnaires are analyzed descriptively and confirmed or strengthened by findings from the field during in-depth interviews.

Data analysis processing is the process of systematically organizing the research results from various data collection techniques used, so that they become a cohesive set of research findings. The data analysis process was previously formulated, and when the researcher went to the field, it served to confirm each description that had been formulated before and then could be analyzed (Neuman, 2013; Sugiyono, 2013). Miles & Huberman (in Sugiyono, 2013) define that in a qualitative approach, data analysis is done interactively and directly until the data becomes saturated, so that the truth of the data can be obtained and conclusions can be drawn.

Data analysis in ethnographic research is part of a step-by-step forward research process. The step-by-step forward research process is a procedure that starts with selecting informants and ends with writing an ethnography. This analysis process begins in the field, with the creation of field notes.

3. Results and Discussion

The process of implementing knowledge related to environmental sanitation and

conservation becomes an effort of inheritance carried out to ensure that the *Suku Anak Dalam* generation in Nagasari Village can balance and maintain harmony with nature. The instilling of values to balance and maintain harmony with nature within the *Suku Anak Dalam* community in Nagasari Village transforms local wisdom into a form of local knowledge.

Each piece of local wisdom regarding knowledge of sanitation and environmental conservation within the *Suku Anak Dalam* in Nagasari Village serves as a means to teach how humans must act wisely, based on philosophies, values, ethics, methods, and behaviors that have been passed down through generations. The Tummenggung (leader) of the *Suku Anak Dalam* in Nagasari Village, expressed the implementation of conservation practices, such as when protecting the forest. He stated:

"It is very important because for us, the forest is the essence of life. Every forest, with its various trees, holds its own spiritual significance for our daily lives. We have different types of land, as mentioned earlier. For example, the fields are places to grow staple foods like tubers and rice. Then there's the benuaron, where we grow vegetables and fruits. Since ancient times, the Rimbo people have been taught by our ancestors to preserve the forest and not cut down trees carelessly, especially the tengeris tree. According to our belief, the tengeris tree is sacred because it is a symbol of the community's birth. When a child is born, we use the sap of the tengeris tree, which is applied to the baby's forehead as a form of protection. If someone cuts down a tengeris tree, it is considered the same as killing a person, and there is a fine of 500 pieces of cloth." – The Tummenggung (leader) of the Suku Anak Dalam

What is meant here is that the knowledge of environmental conservation and sanitation is reconstructed as an educational concept based on what they do and implement in the field, based on observations and interviews related to all elements of the SAD's efforts to protect their environment.

A similar statement was made by a member of the *Suku Anak Dalam* community in Nagasari Village, who expressed:

"Since ancient times, our ancestors have taught us that the forest must be protected from damage, so we have a restricted area called halom where no one is allowed to live or plant anything. We also protect natural resources like rubber trees while safeguarding the forest, because we benefit from both." – Member of the Suku Anak Dalam community

It can be concluded that, for the *Suku Anak Dalam*, the way they maintain the forest is a form of implementing conservation based on customary rules and principles of sustainability. The forest consists of a variety of flora that certainly has benefits for the daily lives of the community. Therefore, they try to use it as effectively as possible and in accordance with the needs to meet the community's food requirements.

Furthermore, as a form of conservation implementation, the *Suku Anak Dalam* community in Nagasari Village also conserves the environment through reforestation of their forest areas. This was expressed by the Tumenggung (leader) of the *Suku Anak Dalam* in Nagasari Village, who stated:

"It's not called reforestation, but rather land use rotation. This has been a tradition passed down from our ancestors, the people of the forest. For example, the first is the forest, which is the actual forest. The second is used for planting food crops. The third is 'sesap', which is land left fallow but still producing food. The fourth is 'belukor', an area that does not produce staple food but can be used for fruit trees like durian or rattan. The fifth is 'benuaron', which serves as a source of fruit and timber and is protected land that can eventually return to being forest." – The Tummenggung (leader) of the Suku Anak Dalam

A member of the *Suku Anak Dalam* community in Nagasari Village, also expressed:

"Typically, we always consider the right time for farming, checking the land's color and characteristics, and adjusting according to the current weather. We also do not use chemical fertilizers for reforestation but use the remains of unused land that has been burned." – Member of the *Suku Anak Dalam* community

Both statements indicate that for the *Suku Anak Dalam* community in Nagasari Village, maintaining harmony with nature is a fundamental principle. Nature not only provides food sources but also offers benefits for preservation and harmonious balance. In addition to examining the conservation of flora, the researcher also explored how the *Suku Anak Dalam* community in Nagasari Village conserves the fauna found in their forest. Since ancient times, they have engaged in hunting as a food source. This was expressed by a member of the *Suku Anak Dalam* community, who stated:

"Since ancient times, our ancestors taught us to be close to and dependent on nature, as our saying goes: we are born and multiply in the forest, eat betel, hunt, and gather medicinal plants from the forest. This is why we do not know or understand the way of life of village people." – Member of the *Suku Anak Dalam* community

A similar statement was made by the Tumenggung (leader) of the *Suku Anak Dalam* in Nagasari Village, who said:

"As the people of the forest, we have always been dependent on nature, one of which is hunting. There is a saying that goes, 'berkerbau tenu, berkambing kijang, bersapi ruso,' which means our food is not domesticated animals, but wild chicken, deer, and rusa." – The Tumenggung (leader) of the *Suku Anak Dalam* community

Therefore, it can be concluded that the *Suku Anak Dalam* community in Nagasari Village also has their own customary rules regarding hunting animals for food. They are very protective of certain species, particularly those that are considered rare, and do not allow them to be consumed.

In addition to interviews and observations regarding the implementation of conservation and sanitation within the *Suku Anak Dalam* community, the researcher also distributed questionnaires to the students of the *Suku Anak Dalam* at SMAN 3 Muaro Jambi. The research results are summarized in Table 1.

Table 1. Conservation implementation process

No	Statement	Response	
		Agree (%)	Disagree (%)
1	Forests need to be preserved for sustainability	100	0
2	The utilization of forest resources is carried out wisely without damaging the available biodiversity	86.7	13.3
3	Tree cutting is done as needed and not on a large scale	93.3	6.7
4	Tree planting is done after tree cutting	100	0
5	Hunting is minimized to maintain sustainable wildlife resources	66.7	33.3
6	The schedule for hunting and tree cutting is regulated by the customary rules of the <i>Suku Anak Dalam</i>	66.7	33.3

Based on Table 1, it can be observed that most students of SMAN 3 Muaro Jambi agree with the implementation process of conservation knowledge among the *Suku Anak Dalam* community. As expressed by a student of SMAN 3 Muaro Jambi:

"Yes, we respect what nature provides and use it wisely, but we also understand the importance of preserving it through mutual cooperation to maintain the local knowledge"

of the Suku Anak Dalam, which is embodied in customary rules." – Student of SMAN 3 Muaro Jambi

The conservation implementation process, based on various statements about the utilization of natural resources, illustrates that the understanding and implementation of conservation are well-practiced. Therefore, conservation practices are well understood by both the community and the younger generation in the *Suku Anak Dalam* community in Nagasari Village.

The next aspect concerns the implementation of sanitation processes in the *Suku Anak Dalam* community in Nagasari Village. The Tummenggung (leader) of the *Suku Anak Dalam* in Nagasari Village, explained:

"We do not have unique practices regarding sanitation compared to other communities. The Suku Anak Dalam do not defecate in the river and instead do so far from it, a practice we call betong peminggong. For us, the river is used for sanitation activities like bathing and washing. Even so, we do not use store-bought soap but rather bidara leaves or orang-arang, as soap would pollute the river and poison the fish. For defecation, we have latrines located 10 meters away from the river. However, some Suku Anak Dalam houses have their own latrines." – The Tummenggung (leader) of the Suku Anak Dalam community

In addition to interviews and observations on the sanitation implementation process in the *Suku Anak Dalam* community, the researcher also distributed questionnaires to *Suku Anak Dalam* students at SMAN 3 Muaro Jambi. The research findings are described in Table 2.

Table 2. Sanitation implementation process

No	Statement	Response	
		Agree (%)	Disagree (%)
1	Not disposing of waste in the river	93.3	6.7
2	Not defecating in the river	100	0
3	Constructing bathing, washing, and toilet facilities away from residential areas or water sources	86.7	13.3
4	Regularly cleaning bathing, washing, and toilet facilities at home	86.7	13.3
5	Disposing of waste in designated places at school is considered good behavior	93.3	6.7
6	Regularly cleaning bathing, washing, and toilet facilities at school	86.7	13.3
7	Education about the importance of sanitation and conservation is conducted at school	100	0
8	Education about the importance of sanitation and conservation is conducted at home/community	100	0

Based on Table 2, it can be observed that most students of SMAN 3 Muaro Jambi agree with the implementation process of sanitation knowledge among the *Suku Anak Dalam* community. As expressed by a student of SMAN 3 Muaro Jambi:

"I am aware that it will pollute the environment. At school, trash bins are provided, and there are signs that say 'dispose of waste in the proper place.' We also have a classroom duty system, not just for maintaining the cleanliness of sanitation facilities but also for keeping the school environment clean. This becomes a valuable experience for our daily lives." – Student of SMAN 3 Muaro Jambi

The sanitation implementation process, based on various statements about maintaining cleanliness and comfort, illustrates that the understanding and implementation of sanitation practices are well-established. Therefore, sanitation practices are well-understood by both the community and the younger generation in the *Suku Anak Dalam* community in Nagasari Village.

The social wisdom possessed by the *Suku Anak Dalam* of Nagasari Village has been passed down through generations as a foundation for protecting their forest habitat and maintaining the balance of all biotic and abiotic life within it. The *Suku Anak Dalam* deeply fear that the destruction and loss of the forest would anger the deities they believe in, bringing disasters. Consequently, the loss and destruction of the forest are equated with the loss of life itself, leaving nothing to be inherited by future generations.

For the *Suku Anak Dalam* of Nagasari Village, protecting the forest represents the implementation of conservation practices based on customary laws and principles of sustainability. The forest comprises diverse flora that undeniably benefits the daily lives of the community. Therefore, they utilize it according to the community's food needs. The *Suku Anak Dalam* of Nagasari Village use fields to produce staple foods such as tubers and rice. Additionally, they cultivate benuaron, which yields vegetables and fruits. There are also specific prohibitions, such as exploiting sialang and kedungdung trees, as they serve as habitats for bees, and tenggeris trees, considered sacred as they symbolize the community's birth.

Findings also indicate that for the *Suku Anak Dalam* of Nagasari Village, nature should be cared for based on principles of harmony. Nature not only provides food sources but also ensures sustainability and harmonious balance. The *Suku Anak Dalam* of Nagasari Village employ a rotational land-use system, a legacy from their ancestors, the Orang Rimbo. This system includes several stages: starting with rimbo (forest), then transitioning to fields for producing staple foods, followed by sesap (fields left fallow but still yielding some food), and then belukor (areas no longer producing staple foods but still suitable for planting fruits like durian or cultivating rattan). Lastly, benuaron serves as a source of fruits and wood, eventually leading back to rimbo. Environmental balance is reflected in how local wisdom considers the selection of plants as food sources, such as combining plants with deep and shallow root structures. Furthermore, local beliefs regarding the use of certain trees indirectly foster biological stability and preserve land resource sustainability (Sinaga & Rustaman, 2015).

The above principle aligns with Sinaga's research, which concludes that indigenous communities, including the *Suku Anak Dalam*, who firmly adhere to such values, can serve as a source of learning for environmental conservation (Sinaga, 2015). This also reinforces that the *Suku Anak Dalam* strongly uphold environmental protection based on customary laws.

Another interesting finding is that the *Suku Anak Dalam* of Nagasari Village always consider the timing for farming, examining the soil, its color, and characteristics in accordance with the prevailing weather. They never practice reforestation using chemical fertilizers but rather utilize unused remnants of burned land. According to Sinaga and Rustaman (2015), the environmental conservation value is reflected in using the remnants of burned land mixed into the soil for farming, which replaces the function of chemical fertilizers. This approach aims to substitute chemical fertilizers that could deplete soil nutrients.

Explicitly, the *Suku Anak Dalam* have already practiced the rules or knowledge they possess regarding environmental conservation and sanitation. For instance, they strictly adhere to their firmly established customary laws passed down from generation to generation. The social strength of these customary laws within the community ensures compliance in every action and word, as they believe in the consequences or calamities brought by deities who disapprove of human actions that damage the environment.

The formalistic implementation of the *Suku Anak Dalam*'s conservation and sanitation practices may not be systematically described. However, field notes can observe and capture their environmental protection practices in daily activities. According to researchers, this presents an intriguing and significant challenge in documenting the journey or implementation of the *Suku Anak Dalam*'s environmental conservation efforts.

Interestingly, they continue these practices without interruption, despite various influences from globalization. Their reverence for their ancestors remains strong and deeply rooted in the younger generations of the *Suku Anak Dalam*. For them, nature is life.

This philosophy is applicable to societies everywhere and is highly relevant to both the *Suku Anak Dalam* and outsiders.

This process of adaptation will influence the cultural elements produced. Adaptation refers to the dynamic processes within a community that can alter or build cultural environments that mutually influence humans and culture (Croucher & Kramer, 2016). This demonstrates that culture and humans are inseparable entities. It is closely related to environmental science, which directs individuals or groups towards a culture. One aspect is preserving indigenous culture, where culture plays a role in maintaining and caring for the environment. Environmental science addresses practical issues in developing interdisciplinary character formation (Surtikanti et al., 2017).

They also strictly calculate the timing when interacting with or utilizing nature. For example, when they want to cultivate crops, they adhere to their own standards and rules that have been practiced for generations. It is no wonder that the *Suku Anak Dalam* remain steadfast in maintaining the traditions or customary laws that they uphold in their lives.

This finding is evident in how the *Suku Anak Dalam* of Nagasari Village practice hunting according to their customary system. Since ancient times, the *Suku Anak Dalam* have been highly dependent on nature, including hunting. A proverb among them states, "berkerbau tenu, berkambang kijang, bersapi rusu," meaning their food comes not from livestock but from wild chickens, deer, and rusa (a type of deer). This reflects that the *Suku Anak Dalam* of Nagasari Village have their own customary rules governing hunting as a food source. They are particularly mindful of preserving certain animals considered rare, ensuring these species are not consumed.

Similarly, certain trees are believed to possess mystical powers or are associated with deities. The *Suku Anak Dalam* hold the belief that the jernang rattan is a sacred place where deities reside. They believe that the spirits of ancestors and plant guardians inhabit the areas where the jernang rattan grows. As a result, the jernang rattan is considered sacred, and its growing site is deemed hallowed ground. Before entering or harvesting the fruits of the jernang rattan, they must first seek permission from the deities, ancestral spirits, and guardians by reciting specific mantras.

Around the jernang rattan trees, individuals must maintain pure thoughts, respectful actions, and appropriate words. Any evil thoughts, inappropriate speech, or harm to the jernang rattan is believed to bring misfortune or calamity, not only to the individual but also to their descendants, relatives, and community. Therefore, the *Suku Anak Dalam* strictly adhere to their customary laws. Beyond these laws, their spiritual beliefs significantly influence their attitudes and behavior toward the jernang rattan. These deeply rooted beliefs play a vital role in preserving the jernang rattan to this day (Harnov et al., 2016).

The life of the *Suku Anak Dalam* has received positive responses and serves as a model for humans in interacting with nature and the environment. Analysis from studies highlights that the success of the *Suku Anak Dalam* in living harmoniously with nature offers hope that forest conservation is achievable. Future forest management should prioritize the socio-cultural values of traditional and local communities surrounding forest areas. Learning from the values and traditions of the *Suku Anak Dalam* in relation to the jernang rattan, it is evident that simple living and solidarity are key to forest conservation. Capitalism, materialism, and economic competition pose threats to forest preservation. Governments, academics, non-governmental organizations (NGOs), and community leaders are encouraged to establish synergistic relationships to promote various conservation activities for the environment in general and forests in particular (Harnov et al., 2016). This policy insight is crucial for environmental preservation around human settlements. The activities of the *Suku Anak Dalam* can provide a specific example for parties interested in conducting conservation efforts in the future.

The behavior of the community that adheres to customary laws, which regulate ethics in forest management, environmental protection, forest utilization, and the cleanliness of the environment and rivers, is based on the thoughts, perceptions, and attitudes passed down from generation to generation. It is believed that humans are tasked with maintaining harmony with nature through care and responsibility toward animals and plants

(biospheric). This belief is firmly held by the community in their daily lives. Therefore, it is not surprising that they strongly preserve customary laws that regulate human activities, whether in social, legal, or political fields (such as the selection of customary leaders or *temenggung*), which have been publicly tested through social community activities.

This means that the *Suku Anak Dalam* (SAD) always adjusts the balance of subsistence in response to ecological demands. The knowledge of SAD in farming has been passed down for generations. Many from SAD have even had experience working as laborers on the plantations of the Malay people. Although the farming system they use appears much simpler than that of people outside their community, it is still effective.

Currently, almost all SAD people plant rubber when farming. Although very few SAD members live solely from rubber tapping, they are well aware that rubber is an economic guarantee for the future. SAD would not intensify their rubber tapping efforts unless there were other more profitable economic choices that better suited their forest-based lifestyle.

Historically, rubber plants were introduced in the early 20th century by the Dutch colonial government in the Jambi region. The plant was quickly accepted by the local population, especially the Malay people, because the method of planting rubber was very similar to the farming practices that had been followed for thousands of years. Besides young plants, older plants such as fruits were always planted as well. This means that the presence of rubber trees did not significantly alter the traditional farming methods and only required a small additional effort to integrate it into their farms. Rubber also competes well with shrubs, growing to maturity with minimal care. Another advantage is its flexibility, as it can withstand long periods, be washed away by rivers, and maintain demand in a competitive market. Today, rubber has become a symbol of land ownership. If a plot of land is used for farming, its ownership rights are strengthened if rubber trees are planted, as the community's appreciation for the crop has grown. These advantages are what have made rubber quickly accepted by the farming community.

SAD is currently facing a very serious dilemma. The local knowledge they have inherited and maintained rigorously is increasingly threatened by global knowledge. The foundation of all SAD's local knowledge and identity is the forest. However, the existence of this forest is now greatly threatened by the hegemony of globalized knowledge. SAD views this destruction as a catastrophe or an apocalypse, whereas the outside world sees the depletion of the forest as a means of enhancing prosperity and welfare.

4. Conclusions

The implementation of knowledge, regulations, and experiences related to conservation and sanitation processes is uniquely carried out through practices grounded in customary laws. This is evident in activities such as *tanoh peranokon*, *rimbo*, *ading*, *sesap*, and *belukor* and *benuaron*. This study highlights that environmental education based on local cultural wisdom plays a significant role in imparting value-based cultural understanding in the context of cultural activities or local wisdom.

The implications for ethnopedagogical environmental education suggest that the traditional knowledge of indigenous communities serves as a foundation for environmental preservation, particularly in aspects of sanitation and conservation. In the context of biology education, this approach offers a vital framework for exploring the interactions between humans and their environment through the lens of local indigenous wisdom. Future research is expected to delve deeper into the management of environmental conservation and sanitation, focusing on natural resource management. Such studies should not be limited to the *Suku Anak Dalam* but also extend to other ethnic groups in Indonesia.

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Author Contribution

The author conceptualized and designed the study, conducted fieldwork, analyzed the data, and wrote the manuscript. The research was carried out independently, with the author providing comprehensive insights into the *Suku Anak Dalam* community's environmental practices.

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