Indonesian Journal of Science & Technology

Journal homepage: http://ejournal.upi.edu/index.php/ijost/

# Assessment of Student Awareness and Application of Eco-Friendly Curriculum and Technologies in Indonesian Higher Education for Supporting Sustainable Development Goals (SDGs): A Case Study on Environmental Challenges

*Agussalim Djirong[1,*], Karta Jayadi[1], Amirullah Abduh[1], Abdul Mutolib[2], Romy Faisal Mustofa[2], Ali Rahmat[3]*

[1]Universitas Negeri Makassar, Indonesia
[2]Universitas Siliwangi, Indonesia
[3]Badan Riset dan Inovasi Nasional, Indonesia
*Correspondence: E-mail: agussalim_djirong@yahoo.co.id

## ABSTRACT

Over recent decades, environmental degradation has escalated, negatively impacting both the planet and humanity. Numerous studies have shown that this degradation is largely driven by human activities. A key strategy to address climate change and environmental damage is to promote changes in human behavior toward more sustainable environmental management practices. One effective approach, particularly in higher education, is the integration of eco-friendly curricula and technologies. This study aims to assess student awareness and the implementation of eco-friendly curriculum and technologies in Indonesian higher education, using a case study on environmental challenges. The findings indicate that while students possess some understanding of environmental issues, such as climate change and waste, their overall awareness and involvement remain low. This is largely due to the insufficient coverage of environmental topics within the university curriculum. Additionally, practices such as waste management and the provision of sustainable technologies, like drinking water systems, are still minimal on campuses. These results underscore the critical need for governments to prioritize the inclusion of environmental concerns and sustainable practices in university curriculum and campus operations. By doing so, a greater emphasis on environmental stewardship can be cultivated, leading to increased awareness and proactive engagement in environmental protection among students.



## ARTICLE INFO

***Article History:***
*Submitted/Received 25 May 2024*
*First Revised 21 Jun 2024*
*Accepted 29 Aug 2024*
*First Available online 30 Aug 2024*
*Publication Date 01 Dec 2024*

***Keyword:***
*Climate change,*
*Eco-friendly curriculum,*
*Environmental,*
*Higher education.*

## 1. INTRODUCTION

Environmental issues and climate change have become serious challenges in achieving sustainable development goals (Shayan et al., 2022; Hsieh and Yeh, 2024; Asif *et al*., 2021; Karmaker & Lemon, 2024; Ibrahim *et al*., 2024; Jakhongir *et al*., 2023; Manullang *et al*., 2021). In recent decades, environmental damage has occurred, negatively impacting the Earth and humanity. Many studies have shown that environmental damage is primarily caused by human activities, such as the use of fossil fuels that are not environmentally friendly (Huo & Peng, 2023), deforestation (Itawan, 2023), industrial activities (Ilham, 2021), air pollution (Manisalidis *et al*., 2020), and other activities that contribute to environmental degradation. The accumulation of these environmentally harmful activities drives global warming, which threatens the quality of the environment and human life on Earth (Stern, 2000; Ahmad *et al*., 2019). This becomes an issue for our support for sustainable development goals (SDGs) (Nurrahmadhani *et al*., 2024).

One strategy to address climate change and environmental damage is to encourage changes in human behavior toward more sustainable environmental management practices (Whitmarsh *et al*., 2021). Global sustainable development efforts have been significantly promoted since the introduction of the Sustainable Development Goals (SDGs) in 2015 (Sorooshian, 2024). The Indonesian government is highly committed to implementing sustainable development directions through more environmentally friendly policies and a focus on national emission reduction (Qalbie and Rahmaniah, 2023). This commitment is evidenced by the issuance of Presidential Regulation Number 59 of 2017, which outlines the implementation of the Sustainable Development Goals. The implementation of sustainable development policies is further detailed in the national action plan and regional action plan aimed at achieving the Sustainable Development Goals by 2030.

The extensive efforts to promote sustainable development formulated by the Indonesian government have encountered many challenges and obstacles (Zahroh & Najicha, 2022). One of the main challenges is the difficulty in building community awareness and fostering environmentally friendly behavior to support sustainable development (Javanmardi *et al*., 2023). Sustainable development policies are often implemented partially and in a top-down manner, lacking a holistic, integrated approach; as a result, these policies do not function optimally (Sugandi *et al*., 2022). Therefore, there is a need for participation from multiple parties, including the government, private sector, community, and non-governmental organizations, to realize the vision of sustainable development in Indonesia.

One strategy to increase public awareness of the importance of sustainable knowledge and practices is to incorporate these concepts into the formal education system (Bianchi *et al*., 2022; Fiel'ardh *et al*., 2023). In Indonesia, the subject of sustainable development has been included in the formal education curriculum at the elementary, secondary, and higher education levels (Hawa *et al*., 2021). At the higher education level, several universities, both state and private, have incorporated sustainable development as part of the compulsory curriculum (Lubis & Pusparani, 2022). The University of Indonesia has even initiated a university ranking through Greenmetric (https://greenmetric.ui.ac.id/). Greenmetric, or the UI GreenMetric World University Ranking, is a ranking of green campuses and environmental sustainability initiated by Universitas Indonesia in 2010. Through 39 indicators in six criteria—Setting and Infrastructure (SI), Energy and Climate Change (EC), Waste (WS), Water (WR), Transportation (TR), and Education (ED)—Greenmetric provides an overview of how environmentally friendly curricula have become a commitment of universities in Indonesia in supporting sustainable development (Sari *et al*., 2023).

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

Higher education institutions play an important role in increasing awareness and promoting environmentally friendly behavior through eco-friendly education curricula, sustainable management policies, and environmental campaigns in the educational context (Dagiliūtė *et al*., 2018). A study conducted by Fubani *et al*. (2024) explained that a person's mindset and attitude are influenced by the level of education in the community; thus, a higher level of education can enhance concern for the environment. Consequently, the more a sustainable curriculum is implemented, the greater the increase in awareness and behavior that supports sustainable development (Žalėnienė & Pereira, 2021). Gabriella & Sugiarto (2020) noted that while environmentally friendly awareness and behavior among students in higher education institutions exist, there is still a low level of environmentally friendly practices in their everyday lives. This finding warrants further investigation, as a high level of student awareness of climate change and sustainable development does not guarantee that students implement these concepts in their daily lives.

SDGs has increasingly become a critical component of educational implementation in Indonesia. Many reports regarding SDGs have been developed (see **Table 1**). Many universities have established long-term visions and missions centered on becoming green and sustainable campuses (Tarraya *et al*., 2025). The internalization of sustainable development issues within campus curriculum, along with the adoption of environmentally friendly policies in higher education, is believed to enhance student awareness and promote sustainable practices during their education and beyond. This study aims to assess the level of student awareness regarding sustainable development issues, climate change, and perceptions of sustainable curriculum content, as well as the implementation of environmentally friendly technologies in higher education. The findings of this study are anticipated to contribute new insights into student awareness of sustainability issues and their responses to sustainable curricula and the integration of environmentally friendly technologies in Indonesian higher education.

**Table 1**. Previous studies relating to SDGs.

| No | Title | Ref |
|---|---|---|
| 1 | Study on economic, sustainable development, and fuel consumption | Maheshvari (2022) |
| 2 | Economic policies for sustainable development: Balancing growth, social equity, and environmental protection. | Ali *et al*. (2024) |
| 3 | Greening the internet of things: A comprehensive review of sustainable IOT solutions from an educational perspective. | Jebur (2023) |
| 4 | Students' critical thinking skills and sustainability awareness in science learning for implementation education for sustainable development. | Ekamilasari and Pursitasari (2021) |
| 5 | Trends and networks in education for sustainable development (ESD): A bibliometric analysis using vosviewer. | Rasuman *et al*. (2024) |
| 6 | Education for sustainable development in science national exam questions of elementary school. | Suryani and Hamdu (2021) |
| 7 | Smart learning as transformative impact of technology: A paradigm for accomplishing sustainable development goals (SDGs) in education. | Makinde *et al*. (2024) |
| 8 | The relationship of vocational education skills in agribusiness processing agricultural products in achieving sustainable development goals (SDGs). | Gemil *et al*. (2024) |
| 9 | The influence of environmentally friendly packaging on consumer interest in implementing zero waste in the food industry to meet sustainable development goals (SDGs) needs. | Haq *et al*. (2024) |
| 10 | Sustainable packaging: Bioplastics as a low-carbon future step for the sustainable development goals (SDGs). | Basnur *et al*. (2024) |

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

**Table 1 (Continue)**. Previous studies relating to SDGs.

| No | Title | Ref |
|---|---|---|
| 11 | Implementation of sustainable development goals (SDGs) no. 12: Responsible production and consumption by optimizing lemon commodities and community empowerment to reduce household waste. | Maulana *et al*. (2023) |
| 12 | Analysis of the application of mediterranean diet patterns on sustainability to support the achievement of sustainable development goals (SDGs): Zero hunger, good health and well beings, responsible consumption, and production. | Nurnabila *et al*. (2023) |
| 13 | Efforts to improve sustainable development goals (SDGs) through education on diversification of food using infographic: Animal and vegetable protein. | Awalussillmi *et al*. (2023) |
| 14 | Safe food treatment technology: The key to realizing the sustainable development goals (SDGs) zero hunger and optimal health. | Rahmah *et al*. (2024) |
| 15 | Analysis of student's awareness of sustainable diet in reducing carbon footprint to support sustainable development goals (SDGs) 2030. | Keisyafa *et al*. (2024) |
| 16 | Sustainable development goals (SDGs) in science education: Definition, literature review, and bibliometric analysis. | Maryanti *et al*. (2022) |

## 2. LITERATURE REVIEW

### 2.1. Student Awareness of Eco-Friendly Practices

Students' awareness of environmentally friendly practices is fundamental for cultivating a culture of sustainability within educational institutions. According to Chan (2019), awareness significantly influences students' attitudes and behaviors toward environmental protection, increasing their likelihood of participating in and supporting sustainability initiatives. Research by Kollmuss & Agyeman (2002) indicates that awareness is a critical first step toward behavioral change, as it equips students with the knowledge necessary to make informed decisions regarding their actions and their environmental impacts.

Several factors contribute to the level of students' awareness of environmentally friendly practices, including family background, socioeconomic status, and prior education. Research by Olsson & Gericke (2016) suggests that students from families with higher socioeconomic status tend to exhibit greater awareness of environmental issues, likely due to improved access to information and resources. Furthermore, students with formal environmental education backgrounds are more likely to possess higher levels of awareness and engagement in sustainability practices.

Peer influence also plays a critical role in shaping students' environmental awareness. Thapa (1999) found that students are significantly influenced by their peers' attitudes and behaviors toward the environment. When students observe their peers participating in environmentally friendly activities, they are more inclined to adopt similar behaviors. This peer effect is reinforced by social norms within educational institutions, which can either promote or hinder the adoption of sustainable practices (Gifford & Nilsson, 2014). Therefore, encouraging student involvement in organizations focused on environmental development is essential for enhancing awareness of sustainable practices.

Educational institutions are central to increasing students' awareness of environmentally friendly practices. Integrating sustainability into the curriculum serves as an effective method for raising awareness. Research by McKeown & Hopkins (2003) emphasizes that sustainability education should be interdisciplinary, allowing students to grasp the interconnectedness of environmental, social, and economic systems. For instance, courses that merge

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

environmental science, ethics, and economics can provide a comprehensive understanding of sustainability issues (Cotton *et al*., 2007).

Extracurricular activities also play a significant role in enhancing awareness. Participation in environmentally focused organizations influences students' knowledge and practical application of environmental sustainability concepts (Torsdottir *et al*., 2024). Activities such as recycling programs, environmental clean-ups, and workshops or seminars on sustainability can encourage proactive behavior (Duvall & Zint, 2007).

Advancements in digital technology have created new avenues for raising students' awareness of environmentally friendly practices. E-learning platforms and online resources offer accessible information on environmental issues, enabling students to learn at their own pace. Research by Zahra *et al*. (2024) found that integrating technology into environmental education enhances student engagement and facilitates interactive learning experiences. Additionally, social media platforms can be leveraged to spread awareness and mobilize student participation in sustainability initiatives.

### 2.2. Eco-Friendly Curriculum in Indonesian Higher Education

The development of an environmentally friendly curriculum in Indonesia is influenced by various national and international policies and initiatives. According to Wibowo & Syarif (2018), the Indonesian government, through the Ministry of Education and Culture, has actively promoted the integration of environmental education into school and university curricula. This initiative aligns with the Sustainable Development Goals (SDGs) established by the United Nations, particularly Goal 4 on quality education and Goal 13 on climate action.

Research by Purwanti (2020) indicates that numerous universities in Indonesia have developed specialized study programs focusing on sustainability and environmental issues. Additionally, several institutions have integrated environmental topics into existing courses across diverse disciplines, including social sciences, economics, and engineering. This multidisciplinary approach enables students to acquire a comprehensive understanding of environmental challenges.

Despite these advancements, the implementation of an environmentally friendly curriculum in Indonesian higher education faces several challenges. Sutanto & Nisa (2019) identify a significant barrier: the lack of resources and institutional support. Many universities still lack the necessary capacity to develop and implement a comprehensive sustainability curriculum. However, some institutions have successfully navigated these challenges by fostering collaboration with non-governmental organizations, the private sector, and international entities. For instance, Universitas Gadjah Mada has established partnerships with various international institutions to develop study programs focused on climate change and sustainability. Such collaborations enable universities to access vital resources and expertise essential for implementing an environmentally friendly curriculum.

The impact of these curricula on Indonesian higher education is evidenced by increased student awareness and engagement in environmental issues. Research by Widodo (2020) demonstrates that students participating in sustainability programs possess a better understanding of environmental challenges and are more likely to engage in eco-friendly activities. Furthermore, an environmentally friendly curriculum has stimulated research and innovation in sustainability. According to Pratama & Kusumawardani (2019), many students have conducted research that contributes to addressing environmental problems in Indonesia. This underscores the critical role higher education can play in tackling environmental challenges through research and innovation.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

### 2.3. Sustainable Environmental Management Practices in Higher Education in Indonesia

Sustainable environmental management in higher education is crucial for addressing global challenges associated with climate change and environmental degradation. Higher education institutions in Indonesia are increasingly recognizing the importance of integrating sustainable practices into their operational frameworks. In recent years, there has been a notable increase in the adoption of sustainable environmental management practices among Indonesian higher education institutions. Research by Wibowo & Syarif (2018) indicates that many universities have begun to develop green policies focused on carbon emission reduction, energy efficiency, and waste management. The implementation of these sustainable practices encompasses various aspects, including energy management, waste management, and environmental education.

According to Sutanto & Nisa (2019), the primary challenges in implementing sustainable environmental management include a lack of resources and insufficient financial support. Nevertheless, some universities have successfully addressed these challenges through partnerships with non-governmental organizations and the private sector. Energy management is a key focus within sustainable environmental management practices in higher education. Many universities in Indonesia have adopted energy-saving technologies, such as LED lighting and efficient air conditioning systems. Additionally, several institutions have begun utilizing renewable energy sources, including solar panels and wind turbines, to decrease reliance on fossil fuels. For instance, Universitas Brawijaya (UB) has installed solar panels on several campus buildings, generating 15% of the total energy needed for the campus. This initiative not only reduces the university's carbon footprint but also results in long-term operational cost savings.

Waste management is another critical aspect of sustainable environmental management. Many Indonesian universities face significant challenges in managing the large volumes of solid waste generated daily. To address this issue, several universities have implemented recycling and composting programs. For example, Universitas Padjadjaran (Unpad) has successfully established an organic waste management system that converts food waste from its canteen into compost for campus agriculture (Sukmawati, 2020).

Integrating environmental education into the curriculum is a fundamental component of sustainable environmental management efforts (McGibbon & Van Belle, 2025). Purwanti (2020) emphasize that environmental education raises students' awareness of sustainability issues and encourages their engagement in eco-friendly practices. The implementation of sustainable environmental management practices in Indonesian higher education has demonstrated significant positive impacts. Research by Widodo (2020) indicates that universities adopting these practices report reductions in carbon emissions and waste, along with operational cost savings. Additionally, there has been an increase in student awareness and participation in environmentally friendly initiatives. At the University of Indonesia, the Green Campus initiative has successfully reduced campus carbon emissions by 25% over the past decade. These positive outcomes highlight that sustainable environmental management benefits not only the environment but also the economic viability of educational institutions.

## 3. METHOD

The research was conducted from September to December 2023. The study employed a qualitative descriptive research method, which examines the status of a group of people, an object, a set of conditions, a system of thought, or a class of events at a specific point in time (Siedlecki, 2020; Priya, 2021). A non-probability sampling technique was utilized due to the

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

unknown nature of the population. Specifically, convenience sampling was implemented, allowing for data collection from individuals who were readily available and willing to provide accurate information when they encountered the researcher.

The sampling criteria included active students at state universities with curricula and visions related to sustainable development. The identities of the universities were anonymized as part of the informed consent process. A feasible sample size for research ranges from 30 to 500 participants. Additionally, a minimum sample size of 100 for research studies. Based on this guidance, the research aimed for at least 100 respondents and ultimately collected data from 193 participants, thus meeting the minimum sample size requirements.

The variables observed in this study included knowledge of climate change, student involvement in climate change initiatives, the incorporation of climate change issues in the college curriculum, and university policies on sustainable environmental management practices. Data was collected through a questionnaire distributed via social media, which active students were invited to complete. To ensure that respondents were indeed active students, they were required to provide their Student Identification Number, which was subsequently validated through the Ministry of Education, Culture, Research, and Technology's website (https://pddikti.kemdikbud.go.id/).

The research variables were measured using a Likert scale to assess the level of student awareness and application of eco-friendly curricula and technologies in Indonesian higher education. The questionnaire included items rated on a scale of 1 to 4, as well as binary "Yes" and "No" response options. Data analysis employed descriptive statistics to evaluate the levels of student awareness and the application of eco-friendly curricula and technologies. The analysis followed an interactive model which comprises three components: (1) data reduction, (2) data presentation, and (3) drawing conclusions/verification. These components are essential for qualitative data analysis, as they enable a systematic comparison to elucidate the relationships among the data, ultimately guiding the conclusions drawn from the study.

## 4. RESULT AND DISCUSSION

### 4.1. Knowledge and Awareness of Students to Climate Change

Student awareness regarding environmental issues is heightened when they comprehend the context of these issues. Climate change, a significant environmental concern, is currently a major topic of discussion. Climate change refers to long-term alterations in the average weather patterns defining Earth's local, regional, and global climates (Rahmat & Mutolib, 2016).

According to the survey results depicted in **Figure 1**, the understanding of climate change among 193 student respondents is varied. While 99.48% of students are aware of climate change, only 65.49% have a solid conceptual understanding. This conceptual gap is attributed to the limited detailed information available, as 65.69% of students rely on social media for information, and 61.65% feel their community is affected by climate change. Furthermore, only 60.93% report that their families have an understanding of climate change. Despite their limited grasp of the basic concepts (below 65%), students show a higher concern for factors contributing to climate change, with 67.77% expressing this concern. The survey also indicates a significant understanding among students that greenhouse gases and deforestation are major contributors to climate change, with awareness levels at 75.75% and 80.51%, respectively. Additionally, students recognize increasing air temperatures and drought as consequences of climate change. However, only 67.04% of students understand that flooding is also an impact of climate change.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

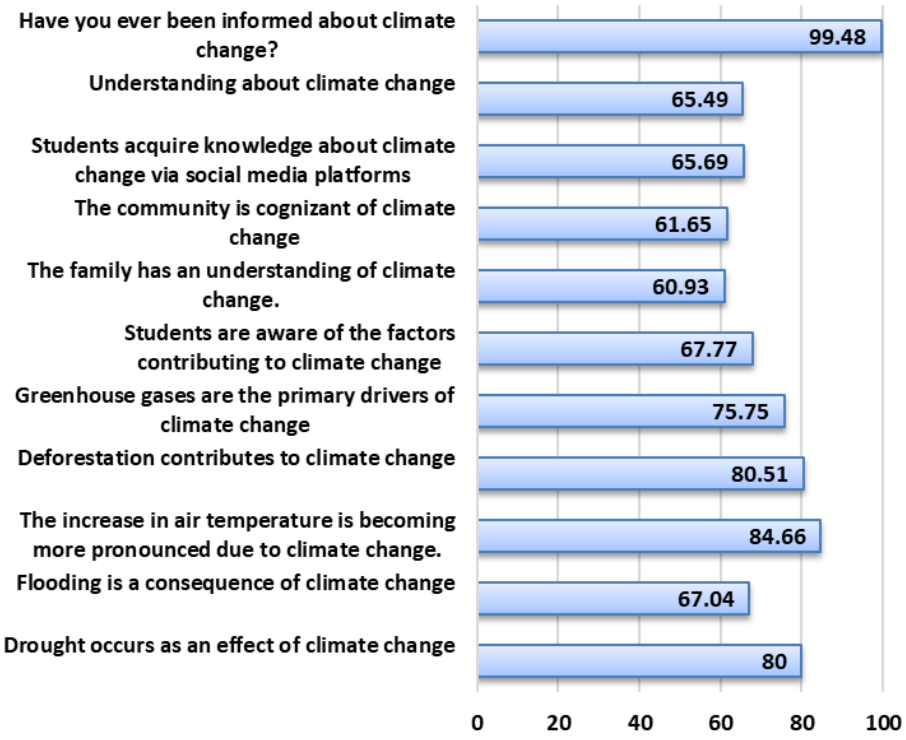


**Figure 1.** Student Knowledge level of climate change.

### 4.2. Student Involvement in Climate Change

**Table 2** outlines student experiences or involvement in events attributed to climate change. According to the data, only 42.27% of students have encountered flooding as a result of climate change. Despite understanding that drought is a consequence of climate change, only 65.49% of students have personally experienced drought due to climate change. A significant 86.83% of students report experiencing temperature increases attributable to climate change. Furthermore, over 80% of students perceive or experience negative impacts of climate change on agricultural productivity, clean water availability, and public health. Additionally, 72.02% of students recognize the negative impact of climate change on cultural activities.

**Table 2.** Student experiences and involvement in climate change.

| Question | % |
|---|---|
| Experienced flood events as a consequence of climate change | 42.27 |
| Endured severe droughts as a result of climate change | 65.49 |
| Observed an increase in air temperatures due to climate change | 86.83 |
| Climate change adversely affects agricultural productivity | 87.87 |
| Climate change negatively impacts clean water resources | 81.96 |
| Climate change poses a threat to life on Earth | 81.55 |
| Climate change disrupts traditional cultural practices | 72.02 |
| Climate change has detrimental effects on public health | 84.45 |
| Engaged in climate change mitigation efforts | 50.56 |
| Advocated for climate change prevention | 43.00 |
| Committed to reducing and mitigating climate change | 77.92 |
| My university has a program on climate change | 56.89 |
| The issue of climate change has been discussed in lectures regularly. | 63.21 |

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

Conversely, student participation in efforts to prevent and mitigate climate change remains below 50%, despite 77.92% expressing a commitment to these initiatives. This disparity suggests that, although students are aware of and have experienced the impacts of climate change, their engagement in proactive measures remains insufficient. A high level of commitment does not necessarily translate into tangible actions, underscoring the need for continued advocacy and education on climate change issues. One effective approach to enhance engagement is to incorporate environmental topics into the university curriculum. However, current conditions indicate that only 63% of students believe that their university has programs addressing climate change, and the same percentage applies to discussions about climate change. This situation contributes to the low level of student awareness regarding environmental issues, particularly those related to climate change. Students' understanding and attitudes regarding climate change are shaped by their educational programs and awareness of environmental protection.

Another study revealed that university students in Vietnam hold diverse views on climate change. Some students are optimistic, believing that climate change can be addressed in the future, while others are more pessimistic, feeling that it is unlikely to be resolved. These perceptions are influenced by their comprehension of climate change and are shaped by various communication channels, including social media and educational initiatives (Nguyen, 2023). Numerous studies have examined students' awareness and understanding of climate change. For instance, research conducted at the ESSU Salcedo campus assessed students' levels of awareness and knowledge, offering insights into potential improvements through educational interventions and climate change management initiatives (Calvo & Apilado, 2015). Enhancing educational programs and fostering environmental protection awareness is essential for increasing students' understanding of climate change. This is vital for creating a sustainable future, as young people are the next generation of knowledge holders who will shape national environmental development (Nguyen, 2023).

### 4.3. Implementation of Environmental Friendliness and Sustainability Curriculum

The implementation of the curriculum addressing "environmental friendliness and sustainability" can be assessed through classroom activities. **Figure 2** indicates that approximately 48% of students report that learning about environmental friendliness and sustainability occurs infrequently, while 38% indicate that such learning occurs relatively often. Additionally, **Figure 3** reveals that 41% of students perceive the integration of environmental topics into the curriculum as rare, whereas 44% feel that it occurs quite frequently. This trend is further illustrated in **Figure 4**, which highlights that 44% of students believe their instructors rarely discuss environmental issues in class, while 45% feel that such discussions occur with moderate frequency.

The data from **Figures 2, 3**, and **4** exhibit a consistent pattern, suggesting a significant interconnection among them. The absence of a strong mandate within the curriculum to address environmental issues may result in lecturers not providing relevant material, leading to students feeling inadequately informed about these critical topics. Furthermore, **Figure 5** demonstrates that a majority of students recognize the substantial role of the government, particularly the Ministry of Education, in addressing environmental issues. This recognition underscores the need for a mandatory curriculum across universities that incorporates environmental topics into courses within each academic department.

The level of student awareness regarding environmentally friendly practices and environmental sustainability remains insufficient, with 64% of students demonstrating low

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

awareness. Among the respondents, 37% are categorized as having moderate awareness, while only 4% exhibit high awareness (**Figures 6** and **7**). These findings underscore the necessity of enhancing student awareness related to environmentally friendly issues and sustainability. The low levels of awareness among students hinder their engagement in environmental protection, particularly within the campus environment.

Interest in learning about environmentally friendly practices and sustainability is predominantly moderate, with 71% of students expressing this level of interest. Conversely, only 18% of students show a strong interest in these topics. This low awareness and interest present significant barriers to achieving sustainable development goals in higher education. Thus, it is crucial to promote greater awareness and interest in environmentally friendly practices among students through educational curricula, policies, and sustainable environmental management practices within higher education institutions.

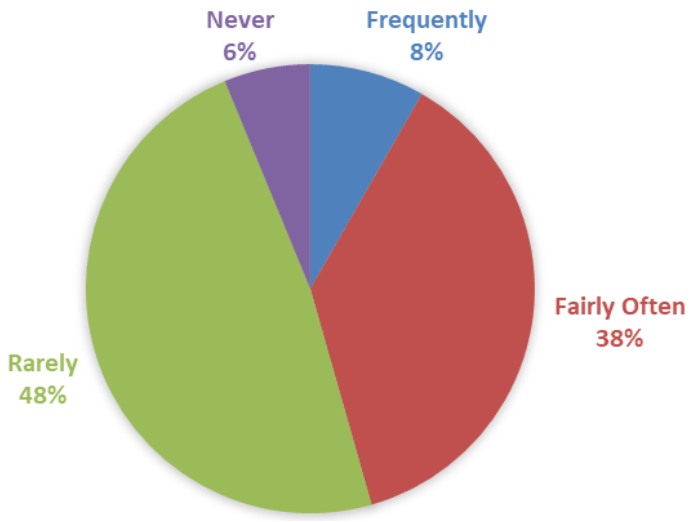


**Figure 2.** Have you ever studied the issue of "environmental friendliness/ sustainability" during your time at the university.

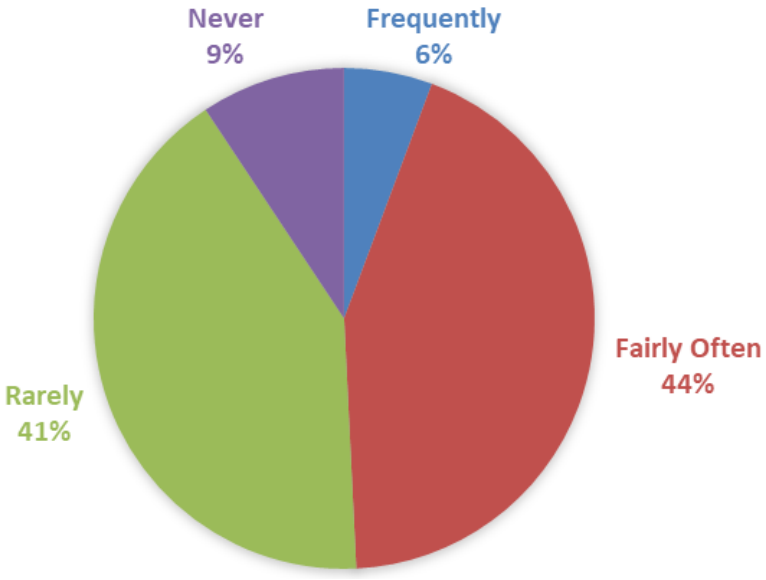


**Figure 3.** Has the curriculum on "environmental friendliness/ sustainability" been taught in your coursework?

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

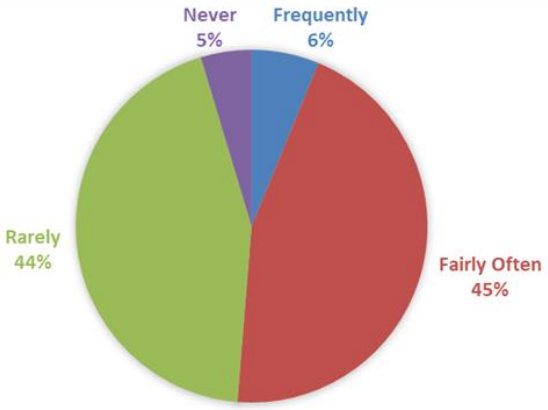


**Figure 4.** Do professors/instructors frequently discuss the theme of "environmental friendliness/sustainability" in class?

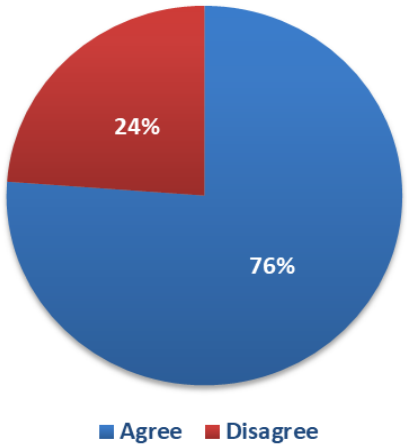


**Figure 5.** The government plays a key role in climate change mitigation.

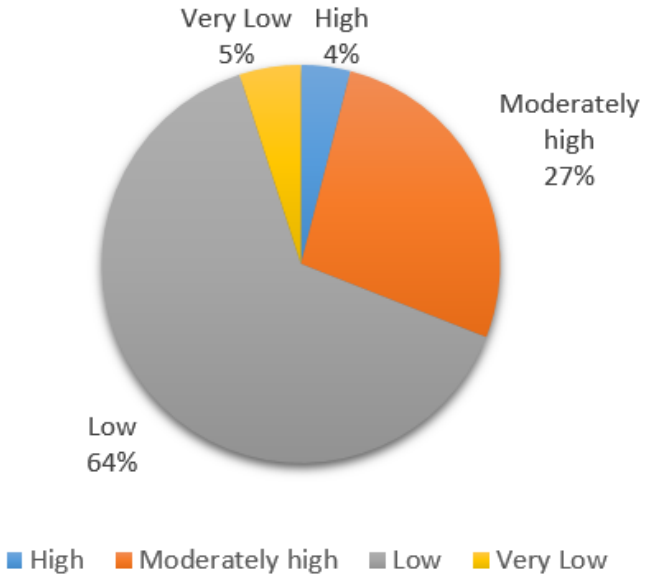


**Figure 6.** Student awareness of environmental issues and environmental sustainability.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

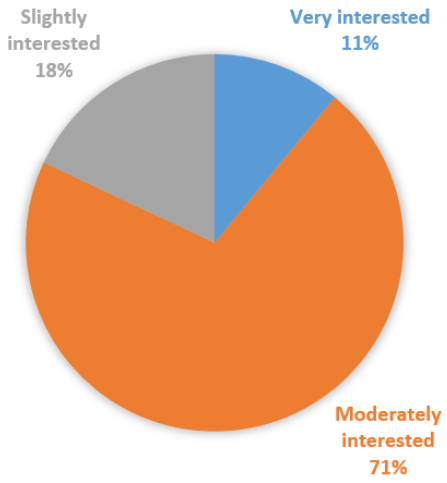


**Figure 7.** Interest in environmental issues and environmental sustainability.

Schools are essential in promoting environmental education. This involves creating policies that ensure clean and healthy school environments, providing training for educators, and incorporating environmental education into the curriculum to cultivate a culture of environmental awareness (Astuti *et al*., 2021; Tong, 2024). Moreover, the curriculum should be structured to incorporate activities that encourage students to utilize their knowledge and skills in addressing environmental challenges. This may include service-learning projects, eco-friendly events, and campaigns aimed at raising awareness and prompting action on environmental issues (Denan *et al*., 2017; Susanto *et al*., 2024) and educational awareness (Cardoso *et al*., 2023). After the curriculum is suitable, the educators should exemplify and advocate for sustainable practices within the educational setting. This involves utilizing digital or recycled materials, reducing printing, switching off lights and devices when not in use, and promoting responsible resource consumption (Collins & Garrity 2023).

### 4.4. Implementation of Environmentally Friendly Policies and Sustainable Technology in Higher Education

The implementation of environmentally friendly policies and sustainable technologies encompasses various initiatives, including the provision of waste bins that separate different types of waste (organic, plastic, glass, and paper), campus policies enforcing sanctions on environmentally harmful activities, measures to reduce plastic waste and non-recyclable materials, and encouragement for students to use refillable drinking water bottles to minimize plastic waste. Additionally, policies should promote the provision of refillable water stations to foster an environmentally friendly culture and facilitate sustainable waste management on campus.

Survey results depicted in **Figure 8** indicate that the campus has not sufficiently provided waste bins for separating different types of waste. While 46% of respondents noted that the campus does offer trash bins, the number remains inadequate. The campus needs to increase the availability of waste bins to ensure accessibility throughout the campus. One significant challenge in sustainable environmental management in Indonesia is the low culture of proper waste disposal. In contrast to developed countries, where throwing trash in bins is a common practice, many individuals in developing countries, including Indonesia, still struggle with this behavior. Consequently, there is a need for campus policies that encourage students to utilize the designated waste disposal options.

As shown in **Figure 9**, 59% of respondents indicated that the campus has implemented policies and appeals for routine waste disposal. However, 41% of respondents reported that

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

these appeals are still limited and not widespread enough. Furthermore, **Figure 10** highlights the campus policy regarding sanctions for students and residents who fail to maintain campus cleanliness. The survey results reveal that most respondents are unaware of any sanctions for students who neglect environmental cleanliness. This lack of clarity regarding consequences may discourage students from actively participating in maintaining a clean campus environment.

**Figure 11** illustrates the campus policy promoting the use of refillable drinking bottles to reduce plastic waste. The findings indicate that 76% of respondents are unaware of this policy, leading many students to prefer purchasing bottled water in single-use packaging. This preference contributes to the increasing amount of plastic waste generated by the use of disposable bottles. Furthermore, policymakers have not implemented policies mandating the use of refillable bottles among faculty and staff, resulting in continued reliance on disposable bottles and the associated waste generation. Therefore, it is imperative for policymakers to actively promote the use of environmentally friendly refillable bottles to create a more sustainable campus environment and reduce plastic waste.

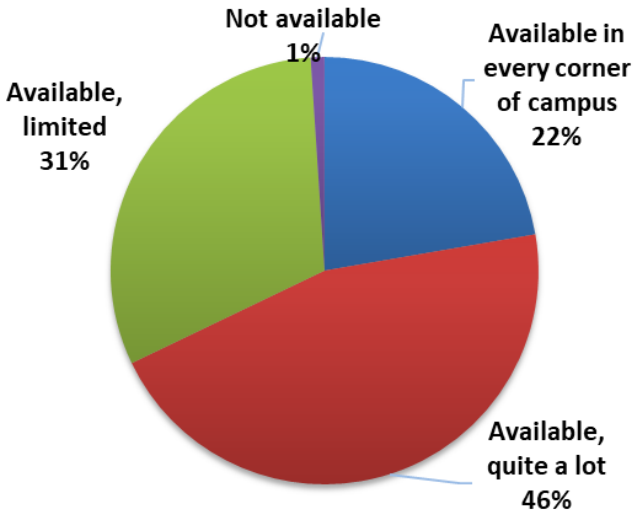


**Figure 8.** The campus provides trash bins based on the type of trash.

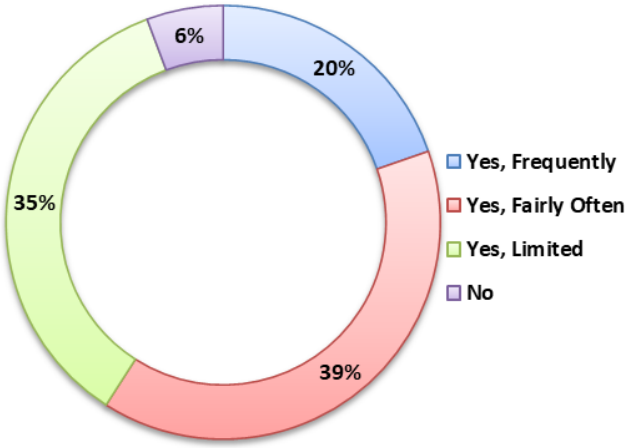


**Figure 9.** Campus policy on disposing of waste in the trash properly.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

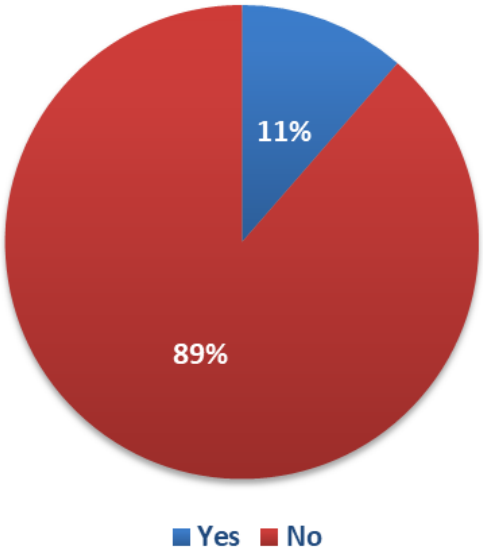


**Figure 10.** Campus policy regarding sanctions for students and campus residents who do not maintain campus cleanliness.

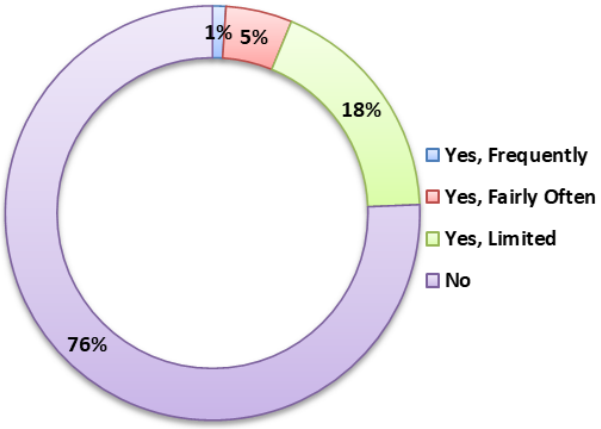


**Figure 11.** Campus policy to campaign refillable drinking bottles to reduce plastic waste.

The implementation of environmentally friendly policies and sustainable technologies in higher education is detailed in **Figures 12, 13, 14,** and **15**, which encompass: 1) the provision of refillable drinking water, 2) a ban on the use of Styrofoam and plastic materials for food packaging, 3) the availability of waste management facilities on campus, and 4) an organic waste management model. The policy regarding refillable drinking water is categorized as low, with 80% of students indicating that the campus has not made such water available. This lack of access negatively affects students who bring refillable bottles, as they are unable to refill them, leading to a preference for purchasing bottled water in single-use packaging. Consequently, this behavior contributes to an increase in plastic waste generated from disposable water bottles.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

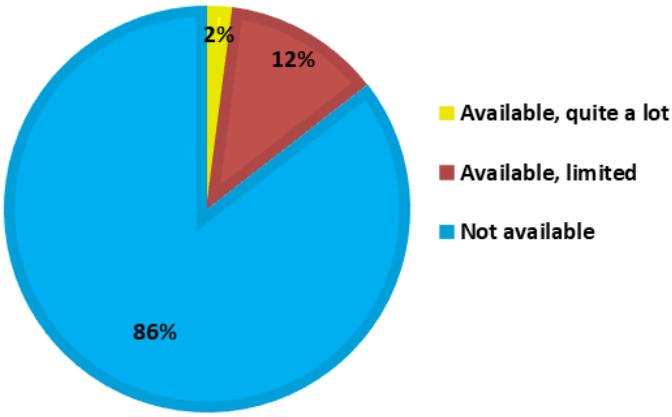


**Figure 12.** The campus provides refillable drinking water for students and campus residents.

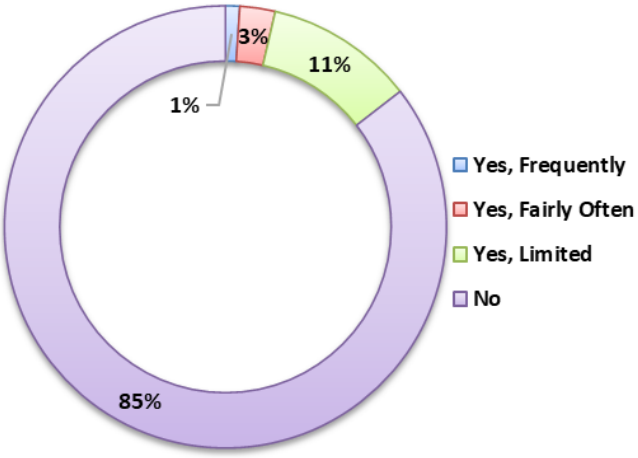


**Figure 13.** Ban on the use of styrofoam and plastic materials for wrapping food.

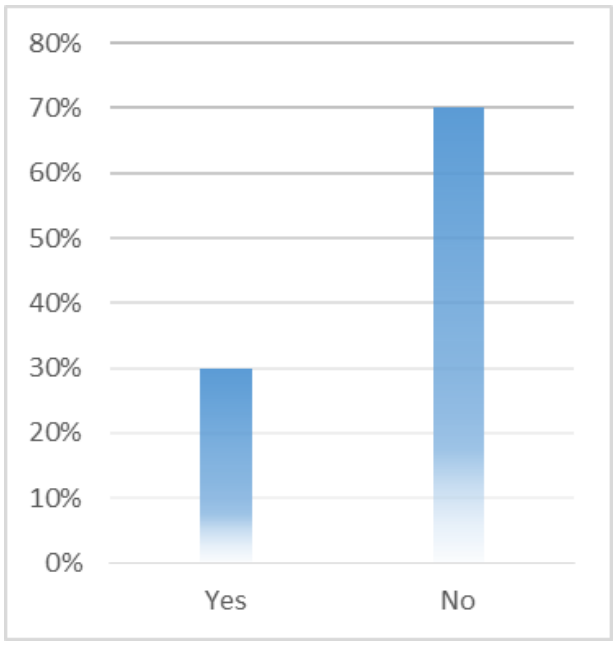


**Figure 14.** Availability of waste and garbage management installations on campus.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

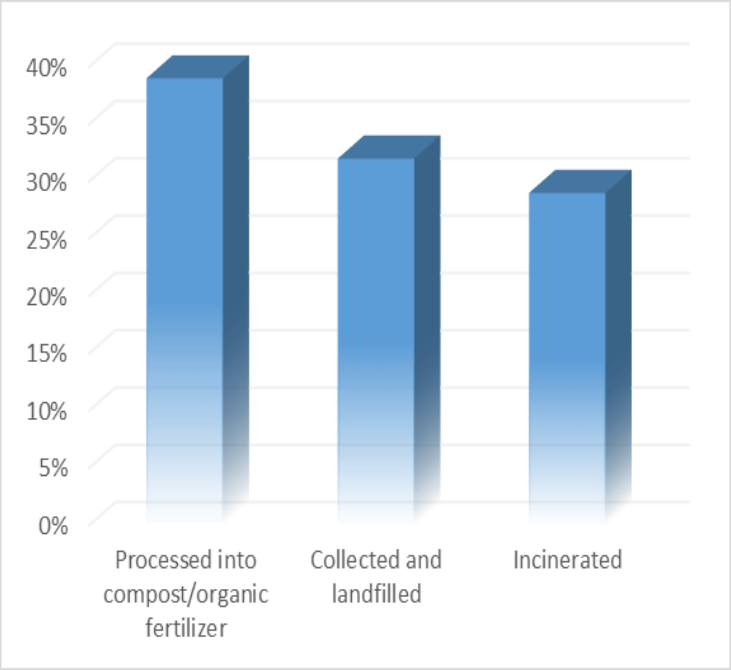


**Figure 15.** Organic waste management model implemented on campus.

Additionally, the campus continues to permit the use of Styrofoam and plastic materials for food packaging during campus activities. The absence of a formal ban allows students to continue using these materials, resulting in an escalation of waste within the campus environment. Currently, the campus has not implemented effective measures to reduce plastic and Styrofoam usage, which undermines efforts to create an environmentally friendly and sustainable campus.

In terms of waste management, the campus still employs conventional methods for handling both organic and inorganic waste. Survey results indicate that 70% of respondents believe the campus lacks adequate waste management facilities. Waste is predominantly managed using traditional methods, with 39% of students reporting that organic waste is processed into compost through basic techniques (such as piling and allowing it to decompose). Furthermore, 32% of respondents indicated that waste is collected and taken to a final disposal site, while 29% stated that waste is incinerated to reduce its volume.

Overall, the waste management policies at the universities involved in this study have not been aligned with environmentally friendly practices or sustainable technologies. There is a lack of directed efforts to promote and develop an environmentally conscious campus. This conclusion is supported by the limited availability of advanced waste management technologies. The campus continues to process waste using conventional methods, such as piling and burning, without considering the associated emissions. The findings suggest that the campus's vision and mission, which emphasize green development and sustainability, have not been effectively integrated into campus management policies and practices. The sustainability-oriented vision appears to serve primarily as a branding strategy to project an environmentally friendly image rather than as a guiding principle for substantive action in support of sustainable development goals.

In the future, the campus needs to establish robust policies and dedicate itself to realizing a sustainable vision through eco-friendly and sustainable management practices. This includes implementing strategies for sustainable campus development, such as water reuse, effective waste management, and energy conservation initiatives (Sugiarto *et al*., 2022).

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

## 5. CONCLUSION

Students' understanding and concern regarding environmental issues, particularly climate change and eco-friendly practices are notably insufficient. Students' low understanding and concern regarding environmental issues is due to the lack of massive implementation of Environmental-based Curriculum and Environmentally Friendly Technology practices in Indonesian Higher Education. Therefore, it is essential to implement comprehensive environmental curricula and eco-friendly education in universities, supported by government initiatives. Currently, the efforts made by universities to promote sustainability remain minimal. As such, there is a critical need to enhance environmental management practices within higher education institutions by improving infrastructure and resources that facilitate sustainable management practices.

## 6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

## 7. REFERENCES

Ahmad, F., Draz, M. U., Su, L., and Rauf, A. (2019). Taking the bad with the good: The nexus between tourism and environmental degradation in the lower middle-income southeast asian economies. *Journal of Cleaner Production*, *233*, 1240-1249.

Ali, M.A., Kamraju, M., and Sonaji, D.B. (2024). Economic policies for sustainable development: Balancing growth, social equity, and environmental protection. *ASEAN Journal of Economic and Economic Education*, *3*(1), 23-28.

Asif, M., Saleem, S., Tariq, A., Usman, M., and Haq, R.A.U. (2021). Pollutant emissions from brick kilns and their effects on climate change and agriculture. *ASEAN Journal of Science and Engineering*, *1*(2), 135-140.

Astuti, E., Haryanti, H., and Andayani, M. (2021). The concept and implementation of environment-based curriculum management in elementary school. *Istawa : Jurnal Pendidikan Islam*, *6*(1), 46-62.

Awalussillmi, I., Febriyana, K.R., Padilah, N., and Saadah, N.A. (2023). Efforts to improve sustainable development goals (SDGs) through education on diversification of food using infographic: Animal and vegetable protein. *ASEAN Journal of Agricultural and Food Engineering*, *2*(2), 113-120.

Basnur, J., Putra, M.F.F., Jayusman, S.V.A., and Zulhilmi, Z. (2024). Sustainable packaging: Bioplastics as a low-carbon future step for the sustainable development goals (SDGs). *ASEAN Journal for Science and Engineering in Materials*, *3*(1), 51-58.

Bianchi, G., Testa, F., Boiral, O., and Iraldo, F. (2022). Organizational learning for environmental sustainability: Internalizing lifecycle management. *Organization and Environment*, *35*(1), 103-129.

Calvo, E.D. and Apilado, M.S. (2015). Awareness, knowledge and attitude on climate change of students: Input for the development of ICM on climate change. *International Journal of Current Research*, *7*(5), 15857-15859.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

Cardoso, L. M., Aeni, N. and Muthmainnah, M. (2023). Mobilizing metacognitive strategies through zoom for EFL classrooms: An innovative practice amidst covid 19. *Journal of Language Learning and Assessment*, *1*(1), 19–25.

Chan, K. (2019). Environmental awareness and behavior in students. *Journal of Environmental Education*, *50*(3), 213-225.

Collins, S., and Garrity, S. (2023). Early childhood educators' understanding of education for sustainable development. *Irish Educational Studies*, *2023*, 1-19.

Cotton, D., Warren, M., Maiboroda, O., and Bailey, I. (2007). Sustainable development, higher education and pedagogy: A study of lecturers' beliefs and attitudes. *Environmental Education Research*, *13*(5), 579-597.

Dagiliūtė, R., Liobikienė, G. and Minelgaitė, A. (2018). Sustainability at universities: Students' perceptions from Green and Non-Green universities. *Journal of Cleaner Production*, *181,* 473-482.

Denan, Z., Awang A. H., Mazlan, MAH., Majid, N.H.A., Rahim, Z. A., and Sanusi, N. A. Z. (2017). The implementation of environmental education and green programs in schools to achieve sustainability. *Advanced Science Letters*, *23*(7), 6261-6265

Duvall, J., and Zint, M. (2007). A review of research on the effectiveness of environmental education in promoting intergenerational learning. *Journal of Environmental Education*, *38*(4), 14-24.

Ekamilasari, E., and Pursitasari, I.D. (2021). Students' critical thinking skills and sustainability awareness in science learning for implementation education for sustainable development. *Indonesian Journal of Multidiciplinary Research, 1*(1), 121-124.

Fiel'ardh, K., Fardhani, I., and Fujii, H. (2023). Integrating perspectives from education for sustainable development to foster plant awareness among trainee science teachers: A mixed methods study. *Sustainability*, *15*(9), 7395.

Fubani, A., Diheim, M., Makhya, N., and Velasufah, W. (2024). Pengetahuan dan perilaku ramah lingkungan mahasiswa. *Journal of Character and Environment*, *1*(2), 138-160.

Gabriella, D.A. and Sugiarto, A. (2020). Kesadaran dan perilaku ramah lingkungan mahasiswa di kampus. *Jurnal Ilmu Sosial dan Humaniora*, *9*(2), 260-275.

Gemil, K.W., Na'ila, D.S., Ardila, N.Z., and Sarahah, Z.U. (2024). The relationship of vocational education skills in agribusiness processing agricultural products in achieving sustainable development goals (SDGs). *ASEAN Journal of Science and Engineering Education*, *4*(2), 181-192.

Gifford, R., and Nilsson, A. (2014). Personal and social factors that influence pro-environmental concern and behaviour: A review. *International Journal of Psychology*, *49*(3), 141-157.

Haq, M.R.I., Nurhaliza, D.V., Rahmat, L.N., and Ruchiat, R.N.A. (2024). The influence of environmentally friendly packaging on consumer interest in implementing zero waste in the food industry to meet sustainable development goals (SDGs) needs. *ASEAN Journal of Economic and Economic Education*, *3*(2), 111-116.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

Hawa, N. N., Zakaria, S. Z. S., Razman, M. R., and Majid, N. A. (2021). Geography education for promoting sustainability in Indonesia. *Sustainability*, *13*(8), 4340.

Hsieh, Y. L. and Yeh, S. C. (2024). The trends of major issues connecting climate change and the sustainable development goals. *Discover Sustainaibility*, *5*, 31.

Huo, J., and Peng, C. (2023). Depletion of natural resources and environmental quality: Prospects of energy use, energy imports, and economic growth hindrances. *Resources Policy*, *86*, 104049.

Ibrahim, I.M., Suryadi, K., Darmawan, C., and Nurbayani, S. (2024). Examining climate change issues for improving cross-generation awareness in 21st century agenda: A bibliometric approach. *ASEAN Journal for Science Education*, *3*(2), 173-182.

Ilham, M. I. (2021). Economic development and environmental degradation in indonesia: panel data analysis. *Jurnal Ekonomi and Studi Pembangunan*, *22*(2), 185-200.

Itawan, D. (2023). Colonialism and climate crisis: The root of environmental changes and the rise of environmental awareness in Indonesia. *Indonesian Historial Studies*, *6*(2), 192-205.

Jakhongir, S., Kurbonov, K., Muhabbat, H., Salim, K., Shavkat, M., Khulkar, K., and Doniyor, K. (2023). Analyzing climate policy utilizing financial and energy industry models. *ASEAN Journal of Economic and Economic Education*, *2*(2), 125-138.

Javanmardi, E., Liu, S., and Xie, N. (2023). Exploring the challenges to sustainable development from the perspective of grey systems theory. *Systems*, *11*(2), 70.

Jebur, T.K. (2023). Greening the internet of things: A comprehensive review of sustainable IOT solutions from an educational perspective. *Indonesian Journal of Educational Research and Technology*, *3*(3), 247-256.

Karmaker, R., and Lemon, M.H.A. (2024). Is climate change a curse? Causing huge effect on various fields: An educational perspective. *Indonesian Journal of Teaching in Science*, *4*(1), 85-96

Keisyafa, A., Sunarya, D.N., Aghniya, S.M., and Maula, S.P. (2024). Analysis of student's awareness of sustainable diet in reducing carbon footprint to support sustainable development goals (SDGs) 2030. *ASEAN Journal of Agricultural and Food Engineering*, *3*(1), 67-74.

Kollmuss, A., and Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, *8*(3), 239-260.

Lubis, R.L. and Pusparani, A. (2022). What do university students know about sdg4 quality education? A case study of business management education at Telkom University Indonesia. *Jurnal Manajemen Indonesia*, *22*(1), 103-113.

Maheshvari, R. (2022). Study on economic, sustainable development, and fuel consumption. *ASEAN Journal of Economic and Economic Education*, *1*(1), 41-46.

Makinde, S.O., Ajani, Y.A., and Abdulrahman, M.R. (2024). Smart learning as transformative impact of technology: A paradigm for accomplishing sustainable development goals

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

(SDGs) in education. *Indonesian Journal of Educational Research and Technology*, *4*(3), 213-224.

Manisalidis, I., Stavropoulou, E., Stavropoulos, A., and Bezirtzoglou, E. (2020). Environmental and health impacts of air pollution: A review. *Frontiers in Public Health*, *8*, 14.

Manullang, T.I.B., Nandiyanto, A.B.D., Suryadi, A., Rochyadi, E., Haerudin, D. Muspita, R.Sumiroh, E., Manullang, L.S. (2021). Improving students with intellectual disabilities science process skills through photosynthesis experiment in enhancing climate change awareness. *Journal of Engineering, Science and Technology*, 16(3), 2368-2377.

Maryanti, R., Rahayu, N.I., Muktiarni, M., Al Husaeni, D.F., Hufad, A., Sunardi, S., and Nandiyanto, A.B.D. (2022). Sustainable development goals (SDGs) in science education: Definition, literature review, and bibliometric analysis. *Journal of Engineering, Science and Technology*, 17(Special issue of ICMScE), 161-181.

Maulana, I., Asran, M.A., and Ash-Habi, R.M. (2023). Implementation of sustainable development goals (SDGs) no. 12: Responsible production and consumption by optimizing lemon commodities and community empowerment to reduce household waste. *ASEAN Journal of Community Service and Education*, *2*(2), 141-146.

McGibbon, C. and Van Belle, JP. (2015). Integrating environmental sustainability issues into the curriculum through problem-based and project-based learning: A case study at the University of Cape Town. *Current Opinion in Environmental Sustainability*, *16*, 81-88.

McKeown, R., and Hopkins, C. (2003). EE ≠ ESD: Defusing the worry. *Environmental Education Research*, *9*(1), 117-128.

Nguyen, T. L. (2023). Awareness of climate change among university students: A case study at FPT university. *KnE Social Sciences*, *8*(20), 165–185.

Nurnabila, A.T., Basnur, J., Rismayani, R., Ramadhani, S., and Zulhilmi, Z. (2023). Analysis of the application of mediterranean diet patterns on sustainability to support the achievement of sustainable development goals (SDGs): Zero hunger, good health and well beings, responsible consumption, and production. *ASEAN Journal of Agricultural and Food Engineering*, *2*(2), 105-112.

Nurramadhani, A., Riandi, R., Permanasari, A., and Suwarma, I.R. (2024). Low-carbon food consumption for solving climate change mitigation: Literature review with bibliometric and simple calculation application for cultivating sustainability consciousness in facing sustainable development goals (SDGs). *Indonesian Journal of Science and Technology*, *9*(2), 261-286.

Olsson, D., and Gericke, N. (2016). The adolescent dip in students' sustainability consciousness—Implications for education for sustainable development. *Journal of Environmental Education*, *47*(1), 35-51.

Pratama, A., and Kusumawardani, T. (2019). The role of higher education in promoting sustainability: Evidence from Indonesia. *Journal of Cleaner Production*, *230*, 218-227.

Priya, A. (2021). Case study methodology of qualitative research: Key attributes and navigating the conundrums in its application. *Sociological Bulletin*, *70*(1), 94-110.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

Purwanti, Y. (2020). Integrating environmental education into the curriculum: A study of Indonesian universities. *International Journal of Environmental Education and Information*, *39*(2), 215-228.

Qalbie, A.S.S. and Rahmaniah, R. (2023). The opportunity to achieve net zero emissions in indonesia through the implementation of a green economy to address climate change. *Global South Review*, *5*(1), 80-102.

Rahmah, F.A., Nurlaela, N., Anugrah, R., and Putri, Y.A.R. (2024). Safe food treatment technology: The key to realizing the sustainable development goals (SDGs) zero hunger and optimal health. *ASEAN Journal of Agricultural and Food Engineering*, *3*(1), 57-66.

Rahmat, A and Mutolib, A. (2016). Comparison of air temperature under global climate change issue in Gifu city and Ogaki city, Japan. *Indonesian Journal of Science and Technology*, *1*(1), 37-46.

Rasuman, M.A., Nandi, N., Astari, A.J., and Ashie, A.B. (2024). Trends and networks in education for sustainable development (ESD): A bibliometric analysis using vosviewer. *Indonesian Journal of Multidiciplinary Research*, *4*(1), 109-126.

Sari, R. F., Suwartha, N., Setiani, H., and Sidiyanto, Y. A. (2023). The impact of UI greenmetric involvement on universities' performance in shaping a sustainable campus. *Journal of Sustainability Perspectives*, 2023, 399-414.

Shayan, F.N., Mohabbati-Kalejahi, N., Alavi, S. and Zahed, M.A. (2022). Sustainable development goals (SDGs) as a framework for corporate social responsibility (CSR). *Sustainability*, *14*, 1222.

Siedlecki, S.L. (2020). Understanding descriptive research designs and methods. *Clinical Nurse Specialist CNS*, *34*(1), 8-12.

Sorooshian, S. (2024). The sustainable development goals of the United Nations: A comparative midterm research review. *Journal of Cleaner Production*, *453*, 142272.

Stern, P.C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, *56*(3), 407-424.

Sugandi, I., Abdoellah, O., and Gunawan, B. (2022). Analysis of the sustainable development policies of local communities in Indonesia. *TRANSFORMASI: Jurnal Manajemen Pemerintahan*, *14*(2), 101-118.

Sugiarto, A., and Lee C-W, Huruta, A. D. (2022). A systematic review of the sustainable campus concept. *Behavioral Sciences, 12*(5), 130.

Sukmawati, N. (2020). Water resource management at Universitas Padjadjaran: A model for sustainability. *Water Resources Management*, *34*(12), 3771-3785.

Suryani, L., and Hamdu, G. (2021). Education for sustainable development in science national exam questions of elementary school. *ASEAN Journal of Science and Engineering Education, 1*(1), 1-6.

Susanto, T.T.D., Zahrah, S., Pratama, M. Z., Aisyah, J., Kurniawan, A. (2024). Improving the quality of education through environmentally based learning. *Perspektif Ilmu Pendidikan, 38*(1), 47-56.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045

Sutanto, A., and Nisa, A. (2019). Barriers to the implementation of sustainable curriculum in Indonesian higher education. *Journal of Sustainability Education*, *24*(3), 289-306.

Tarraya, H.O., Camposano, C.E., Rojo, S.G., Dolorica, M.C.C., Polon, J.H., and Digo, G.S (2025). Emerging technologies for sustainable universities and colleges: A meta-synthesis. *ASEAN Journal of Educational Research and Technology*, *4*(1), 11-22.

Thapa, B. (1999). Environmentalism: The relation of environmental attitudes and environmentally responsible behaviors among undergraduate students. *Bulletin of Science, Technology and Society*, *19*(5), 426-438

Tong, W. (2024). A validation study of a self-assessment questionnaire for middle school students' self-presentation skills. *Journal of Language Learning and Assessment*, *2*(1), 20–23.

Torsdottir, A. E., Sinnes, A. T., Olsson, D., and Wals, A. (2023). Do students have anything to say? Student participation in a whole school approach to sustainability. *Environmental Education Research*, *30*(4), 519–543.

Whitmarsh, L., Poortinga, W. and Capstick, S. (2021). Behaviour change to address climate change. *Current Opinion in Psychology*. *42*, 76-81.

Wibowo, R., and Syarif, A. (2018). National policies and frameworks for environmental education in Indonesia. *Environmental Education and Policy*, *17*(4), 329-343.

Widodo, A. (2020). The impact of sustainability education on student behavior and awareness: A case study from Indonesia. *Environmental Education Research*, *26*(6), 835-852.

Zahra, A., Waheed, Z., Fatima, T., and Khong, K. W. (2024). Leveraging technology for environmental awareness: Insights from experimental research with middle school students in Malaysia. *RMLE Online*, *47*(4), 1–16.

Zahroh, U.A. and Najicha, F.U. (2022). Problems and challenges on environmental law enforcement in Indonesia: AMDAL in the context of administrative law. *Indonesian State Law Review*, *5*(2), 53-66.

Žalėnienė, I. and Pereira, P. (2021). Higher education for sustainability: A global perspective. *Geography and Sustainability*, *2*(2), 99-106.

DOI: https://doi.org/10.17509/ijost.v9i3.74385
p- ISSN 2528-1410 e- ISSN 2527-8045