

# Examining Young Citizen's Engagement in Ecological Citizenship for SDGs: A Systematic Literature Review

Maryatun Kabatia<sup>a</sup>, Arief Wahyudi<sup>b</sup> and Surya Dharm<sup>b</sup>

*Pancasila and Civic Education Department, Universitas Negeri Medan, Medan, North Sumatera, Indonesia*

**Keywords:** Young Citizen Engagement, Ecological Citizenship, Sustainable Development Goals.

**Abstract:** The type of citizenship known as ecological citizenship invites people, groups, and institutions to consider their responsibilities to the environment as global citizens and their rights. All contemporary citizenship models must include the rhetoric of ecological citizenship because, in addition to the demands of humans and the environment, nature must be protected for human survival and civic values to be upheld. Reviewing the literature on youth participation in ecological citizenship education for sustainable development is the goal of this paper. Addressing societal challenges, including environmental ones, requires civic engagement. This study will employ a multidisciplinary methodology and incorporate theoretical, qualitative, and quantitative research. Even though there are conflicting views, empirical studies on the SDGs theme continue to emerge. Through a comprehensive literature analysis, we investigate youth engagement in ecological citizenship and how it relates to the SDGs in this study. This paper will focus on how to engage young citizens who most emphasize the dimensions of ecological citizenship. The following is an integrated community engagement model built based on the knowledge gained from this review. Following a review of the definition and procedures for civic involvement in ecological citizenship education towards sustainable development, the findings, gaps in the literature, and the general state of young citizens' engagement in ecological citizenship education towards sustainable development in literature.

## 1 INTRODUCTION

To enhance human welfare globally, several countries have set one of the key agenda items the Sustainable Development Goals (SDGs). There are 169 quantifiable milestones and 17 sustainable development goals on the agenda. Among the 193 nations that have accepted and adopted the SDGs is Indonesia (Pradan et. al, 2017). The following are the 17 goals or pillars of SDGs: (a) The absence of poverty; (b) hunger; (c) health and happiness; (d) top-notch education; (e) gender equality; (f) Clean energy and water; (g) Economic development and respectable employment; (h) Infrastructure, industry, and innovation; (i) Infrastructure, industry, and innovation; (j) Decrease inequality; (k) Sustainable cities and communities; (l) Conscientious production and consumption; (m) Climate actions; (n) aquatic life; (o) terrestrial life; (p) justice, peace, and

robust institutions; and (q) collaboration towards the objectives (Dalampira et al., 2020).

To ensure that no one is left behind, the current discussion surrounding sustainability and equally affluent and developing countries, the 2030 Agenda of Sustainable Development Goals (SDGs) seeks to strike a balance between social fairness, economic advancement, and protecting the environment. According to the SDG framework, education is essential for bringing about revolutionary change (Unicef, 2016). The advancement of education and the chance to pursue education up to higher education are among the priorities that will become more and more significant in the future. As centers of higher education Universities have been important engines of innovation, economic expansion, and social well-being on local, national, and international levels (Alisjahbana, A.S et.al, 2018). Universities are crucial to accomplishing the SDGs. To promote global citizenship and introduce knowledge and innovation to society, universities can help develop new approaches. Through research, organizational governance, culture and operations, teaching and

<sup>a</sup> <https://orcid.org/0000-0003-4685-4768>

<sup>b</sup> <https://orcid.org/0000-0003-4649-2197>

<sup>c</sup> <https://orcid.org/0000-0002-6773-2156>

learning initiatives, and external leadership, universities may advance the SDGs. Universities are supposed to play a significant role in this process, particularly in educating the next generation of people.

The young citizens in concern are members of the current generation that is growing and has a significant effect on the development of a nation. The younger generation is currently consuming a wide range of knowledge from several sources, such as the Internet, official and informal education, and ever more advanced data and technology of communication (ICT). Therefore, the younger generation must be prepared with a set of information and learn to be an intelligent and good young citizen if a country has the character of smart and good citizenship. Good citizens mean citizens who can be standardized by civic education institutions (Abror et al., 2019). The concept of "good citizen" concerning the state and government, as well as between people and the natural world, is continuously comprehended and illustrated graphically following the framework of civic education. As a result, good citizens are individuals or organizations that have the expertise and methodical understanding required to take proactive measures to uphold humanity, live in harmony with one another and the environment, and be open, honest, and tolerant. Each of these attributes of knowing and abilities is the domain of citizen engagement.

The field of citizen engagement comprises all of these knowledge and skill attributes. The compulsion to uphold humanity, empathy, transparency, ethics, and a broad sense of duty, including to the environment, are markers of civic engagement (Karliani, E., et al., 2019). Global and ecological citizenship serve as the foundation for the Sustainable Development Goals (SDGs) agenda's emphasis on citizen engagement, which aims to increase awareness and highlight rights as well as responsibilities to the environment and nature. Ecological citizenship in the interim phase In the meantime, ecological citizenship necessitates active environmental participation since it is an endeavor to preserve and enhance a connection with nature, including community empowerment and engagement to accomplish significant conservation behaviors and results (Soga, M., & Gaston, K.J., 2016). Including civic engagement and empowerment to achieve meaningful conservation behaviors and outcomes. The increasing rate of urbanization that has an impact is among the several justifications for the significance of citizen engagement.

The article aims to examine young citizen's engagement in ecological citizenship education toward Sustainable Development Goals (SDGs). This will review the literature regarding educating youth about ecological citizenship to promote sustainable development. Civic engagement is recognized as an important process for addressing environmental and other social issues. Education for ecological citizenship must reconnect modern human societies to all other spheres of the living planet and close the significant cognitive and emotional gap that currently exists between humans and their environment so that people will respect and value our planetary life support system instead of seeing it as a "resource" to be exploited (Steffen, 2019). Teachers, mentors, and scientists must encourage environmental citizenship and engage with other aspects of society to transform society into one that is more sustainable through higher education (Hadjichambis, A. Ch, et.al, 2020). To encourage policymakers to make the right choices and proceed from calls to action, civil society and the state must have an open dialogue (Seed, 2019). Ecological citizenship education ought to equip people with the skills they need to accomplish this. Therefore, environmental citizens need political and communication skills in addition to information, attitudes, and values focused on sustainability and the environment to inspire them to take action. Young citizens must embrace a new environmental perspective in light of this dire ecological situation. Above all, this ecological emergency calls on people to act to address or at least lessen environmental issues, which are especially bad in many big cities across the world. The creation and effective execution of green policies in their cities can be facilitated by actively involved residents; certain green policies, for instance, focus on social and environmental change.

Even while the idea of ecological citizenship has a lot of potential to inspire people to protect the environment, several issues need to be resolved. First, environmental consciousness alone won't motivate tangible action. In this instance, some people are well-informed about environmental issues but find it difficult to apply that information to sustainable conduct (Asilsoy, B., and Oktay, D., 2018). An obstacle to adopting a sustainable lifestyle may be the absence of infrastructure or assistance, such as easy access to public transit or eco-friendly product availability (Bourban, M., 2022). Secondly, disparities exist in the capacity to implement long-term solutions. Adopting more ecologically friendly lifestyles is challenging for many community groups due to social or economic barriers. This leads to disparities in ecological engagement and highlights

the necessity of a just and inclusive strategy for advancing ecological citizenship.

The terms "ecological citizenship", "citizens' engagement", "young citizen engagement" and Sustainable Development Goals (SDGs)" appear to have interesting linkages given the theoretical framework that underpins this study. However, a thorough analysis of these connections has not yet taken place because these research topics are still in their infancy and fragmented state. The current review study's objective is to systematically examine how young engage in ecological citizenship education. More precisely, we are interested in the following question.

RQ 1: What is the ecological Citizenship?

RQ 2: How is Civic Engagement in Ecological Citizenship Important for Sustainable Development Development Goals (SDGs)?

RQ 3: How Does Young Citizen Engagement in Ecological Citizenship for Sustainable Development Goals (SDGs)?

## 2 METHOD

The examination of empirical research in the fields of "young citizen," "citizens' engagement," and "ecological citizenship education" which was published in peer-reviewed scholarly journals between 2018 and 2024 is the main objective of this Systematic Literature Review (SLR). This study was defined using the widely accepted Preferred Reporting Items for Systematic Reviews and Metaanalyses (PRISMA) 2020 technique for systematic literature reviews (Page MJ, et al., 2021). The data is then examined using the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) 2020 criteria. These recommendations are applied methodically by adhering to appropriate research protocols and incorporating pertinent findings for additional meta-synthesis. The routine audit processes are methodically organized and successfully carried out, leading to different questions about the effectiveness of this strategy in contrast to those that concern scientific reasoning.

Based on the PRISMA standards, three steps were taken: (a) Identification, (b) Screening, and (c) Eligibility. This study's primary source is a variety of books about 21st-century teacher pedagogical competency classes. To include materials in the current study, the researcher established certain criteria. For example, between 2017 and 2024, articles should be published in journals and written in

English. By using national and international databases, books, book chapters, conference proceedings, editorial materials, and corrections were not included in the analysis. The item was then included for more debate using the process architecture depicted in Figure 1

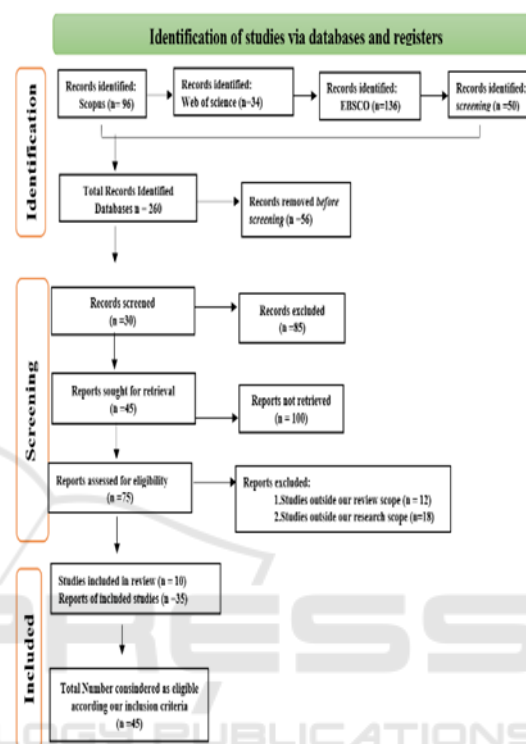


Figure 1: Initial Findings Using PRISMA Diagram

Initially, these papers were grouped according to their titles and keywords. This made it possible for us to pinpoint research areas that have gained popularity recently. In the process, we also examined the similarities across the categories and contrasted the approaches and findings of each research. We then examined the trends in each category and contrasted the context in which the term "civic engagement" appears in each publication. We focused especially on how "information" is handled for young citizens in this analysis. We looked at how SDGs received information as well as how young citizens involved in ecological citizenship understood it.

The articles were screened by researchers through the process of reading records screened and reports sought for retrieval. The articles were screened by researchers through the process of reading their abstracts. The primary objective of this phase is to gather pertinent research findings about Young Citizen's Engagement in ecological citizenship toward Sustainable Development Goals (SDGs). This

will be accomplished through an analysis of the criteria associated with the research scope. The subsequent section provides a summary of the chosen research publications.

### 3 FINDINGS

#### 3.1 Ecological Citizenship

Before elaborating on how young citizens engage in Ecological Citizenship for Sustainable Development Goals (SDG). It is important to explain the concept of ecological citizenship. Different terms for ecological citizenship are mentioned in different literature; some define it as ecological citizenship, while others refer to it as environmental citizenship. Both, however, share the same fundamental meaning, which has to do with citizens' strategic role in solving environmental issues. The idea of ecological citizenship is still up for dispute. This idea consists of numerous components. Environmental literacy, environmental attitudes, and personal knowledge are necessary but insufficient for ecological citizenship.

To help humanity deal with global environmental issues like ozone depletion, climate change, and anthropogenic mass extinction, ecological citizenship emerged in the mid-1990s as a revised and broadened concept of citizenship (Dobson, A., and Sáiz, A. V. 2005). (Hayward 2006). Examining the literature reveals that four aspects of ecological citizenship are most frequently highlighted. These include accountability, sustainability, rights, fairness, and involvement. An ecological citizen is essentially one who is accountable for all of the people and things that he has shared and will continue to share with the ecosystem.

The idea of ecological citizenship broadens the range of a citizen's duties to the environment beyond only following the law; it also includes proactive measures that promote ecosystem sustainability (Spannring, 2019). This idea urges everyone to fulfill their responsibilities as citizens by doing more to preserve and safeguard the environment. In an attempt to improve ecological citizenship, a green constitution also referred to as a "sustainable" was drafted as a piece of legislation that seeks to promote environmental behavior changes (Pudjiastuti, S.R., 2021); (da Silva., 2022). Additionally, Dobson (2003) makes it abundantly evident that, within specific bounds, ecological citizenship is linked to both environmental rights and citizen obligations. According to Dobson, every development strategy put into place in a given area ought to allow for

political participation from the populace and be informed by environmental preservation.

Therefore, ecological citizenship is an objective that all societies may support together. Sustainable environmental development is made possible by the ecological citizenship movement's dedication. To establish future environmental care practices, young citizens must be introduced to the idea of ecological citizenship through environmental ethics from a young age. Education is one method to put it into practice. The most crucial element in developing moral character is education. Humans also become more concentrated in their conduct, character, and thought processes as a result of schooling. Therefore, education is an ongoing process that will never stop to develop sustainable quality, founded in the principles of the nation's culture and Pancasila, and aimed at realizing the figure of a future human being.

#### 3.2 Civic Engagement in Ecological Citizenship Important for Sustainable Development Goals (SDGs)

Maintaining the environment's carrying capacity for life requires a closer ecological connection between people and the environment. The community needs to encourage awareness of environmental issues and respect for the values inherent in nature (Nathania et al., 2021). Because the natural environment and human life are closely related and because humans rely on ecosystems that maintain sustainability, environmental awareness is crucial. (Niman, 2019). As the world's population grows and human activity causes environmental damage, ecological issues have become more pressing (Chen, R., et al., 2023); (Wang, H., et al., 2023). Today's sustainability is threatened by major issues such as pollution, climate change, and biodiversity loss (Dhital, S., and Rupakheti, D., 2019); (Malik, I., et al., 2021)

People around the world are affected by complicated sustainability issues such as biodiversity loss, climate change, high wealth disparity, and environmental degradation. Because of these difficulties, ecosystems' ability to operate. With human welfare at risk, solutions that strike a balance between human activity, The carrying capacity of supporting ecosystems and the actions of non-human species are urgently needed (IPCC, 2022); (Rockström et al., 2021). To produce such solutions, scientists and practitioners are increasingly emphasizing the need for greater connectivity between research and society (Schneider et al., 2019). They promote collaboration among stakeholders from many industries and fields to create responses



that are both scientifically sound and pertinent to society and to link learning, practical experience, and knowledge advancement (Pohl et al., 2017), (Caniglia et al., 2021). Controlling environmental degradation requires wide engagement in developing environmental insight. Protecting the environment against fast economic expansion is known as sustainable development. In this discourse, environmental challenges are framed as an effort to strike the correct balance between social justice, economic progress, and environmental protection throughout time and geography (Hysing & Olsson 2018).

Entities and social groups entrusted with striking a balance between the environmental, social, and economic facets of development might be influenced by the concept of sustainable development in their policies and efforts (Serafini, P.G., et al., 2022); (Zwolinska, K., et al., 2022). The idea of sustainable development gained further traction in 2015 with the introduction of the 2030 Agenda for Sustainable Development, which includes the Sustainable Development Goals (SDGs) (Leal Filho, W., et al., 2021); (United Nations, 2015). The Sustainable Development Goals (SDGs) agenda's emphasis on citizen participation, which seeks to raise awareness and highlight rights as well as duties to the environment and nature, is based on global and ecological citizenship. Environmental responsibility during the period of transition Given that ecological citizenship is an endeavor to preserve and improve one's interaction with the natural world, it requires active environmental participation in the interim. This includes community empowerment and engagement to achieve important conservation behaviors and outcomes.

Ecological citizenship needs to be developed collaboratively; it won't happen on its own. The goal of developing suitable technology is to ensure optimal resource utilization by minimizing or preventing harm to the environment and nature, as well as to improve the socioeconomic circumstances of society. Maintaining a good and healthy environment is a duty and responsibility of every citizen. Ecological citizenship is a form of citizenship that encourages people, groups, and institutions to think about their rights and obligations to the environment as global citizens. To develop the character of concerned, environmentally conscious citizens, ecological citizenship necessitates a strong commitment to upholding high moral standards and awareness. As a prerequisite for putting ecological citizenship into practice, developing environmental ethics is the first step in encouraging citizens to actively participate in environmental protection (Karatekin, 2018); (Aulia

et.al., 2018). The goal of ecological citizenship is to raise awareness of environmental challenges in the community. The objective is to shift the community's perspective so that it actively contributes to the accomplishment of the environmental protection program's objectives. Sustainable development requires a shift in how people, institutions, and organizations behave.

Civic engagement is the voluntary activity and attitude of involvement associated with civic responsibility. Active participation in dedicated, educational, and constructive communal life, with an emphasis on the common good, is known as civic engagement. Many fields often use the term "civic engagement" to describe a variety of topics, but definitions vary widely. Researchers often discuss how they operationalize civic engagement without justifying their choice or mentioning how it can be related to an underlying civic engagement theory or framework, assuming that the reader is already familiar with the concept. Although there is a perception that civic engagement is a broad concept, Given the breadth of the concept, it should be more important to emphasize how one interprets it and how that view differs from other interpretations found in the literature. This issue is mentioned in several kinds of literature (Phan, V., et al, 2023); (Serrat, R.T, et.al, 2021).

The development of ecological policies and regulations has always been influenced by the engagement of civic engagement preservation (Akerboom, S., and Craig, R. K, 2022). Because of this connection, it is crucial to recognize how sustainability and social engagement are interdependent and reinforce one another (Boyle, 2020). The SDGs place a strong emphasis on the value of multi-stakeholder procedures, especially when it comes to encouraging civic engagement. Put another way, in light of the lessons learned from the Millennium Development Goals, it is imperative to encourage greater citizen engagement in decision-making to guarantee the legitimacy and efficacy of governance: (Ozaki, et al, 2022).

The fundamental right to take part in the creation of the environment should be granted to all citizens. Long-term, this contributes to the creation of an ecosystem for environmental management, equity, and ownership, which leads to sustainable development. When implemented, sustainable development results in the built environment's social, economic, and environmental sustainability. A key element of sustainable development is civic engagement, which makes sure that community members' needs and viewpoints are considered during

the planning and execution of sustainable development initiatives. At every stage of development, civic engagement in ecological citizenship is a powerful tool for Sustainable Development Goals (SDGs).

The community has the chance to participate at every level of development initiatives that are centered on ecology or the environment. The planning stage gives the community a chance to offer concepts, ideas, or opinions on the development program that will be carried out. If the program is related to environmental development, the community can offer suggestions so that the development is carried out with the environmental protection principle in mind. Involving the community in the implementation stage gives them the chance to contribute labor, resources, and even ideas or concepts for technical implementation, all of which are necessary to ensure the development implementation process runs well.

Basically, in Indonesia, various programs that support the achievement of SDGs (Sustainable Development Goals) in the ecological environment sector have a strong legal basis, both in the form of laws and government regulations. Where the community can actively participate in implementing it through 1) laws Number 7 of 2004 concerning Water Resources: This rule governs the distribution and management of water resources in Indonesia, including ways in which the community participates in water conservation. 2) Government law Number 6 of 2007 on Social Forestry: This law gives communities the ability to manage forests sustainably through social forestry management, which includes community empowerment in reforestation and the green village program. 3) Law Number 6 of 2014 about Villages: This law gives villages the ability to manage their natural potential and take part in environmental conservation by employing community-based natural resource management and the green village program. 3) The Management of Household Waste and Household-Like Waste Regulation Number 81 of 2012 The waste management provisions outlined in this regulation include community involvement in residential waste reduction and management.

### **3.3 The Young Citizen's Engagement in Ecological Citizenship Education for Sustainable Development Goals (SDGs)**

The most crucial element for a human to live, work, and engage in other activities is their surroundings.

With the intricate and frequently nonlinear connections between humans and the environment, humanity faces numerous sustainability difficulties. Our comprehension of them is frequently lacking and partially obscured by significant ambiguities (Voulvoulis et.al., 2019). The only way to address today's societal and environmental issues is to match individual values and actions with political goals and policies through collaborative efforts. By transforming society, this will increase our ability as humans to accomplish sustainable development goals (Weiland, S., 2021). The preservation of the environment, human well-being, and sustained community wellness are essential to the quality of life both today and in the future. To guarantee the objectives set to achieve a sustainable development citizen and become a developed nation by 2030, the government or local authorities should not be the only ones responsible for addressing the issues mentioned. Sustainable youth knowledge and sustainable environmental knowledge are also necessary. Given the numerous environmental concerns, such as water pollution, climate change, and depleting fuel resources environmental education is critical for individuals, especially youth who can drive change.

There is compelling evidence from recent studies that climate change has a major effect on people's emotional health worldwide. Young citizens bear a disproportionate amount of the psychological and emotional costs associated with climate change, and they are increasingly seen as a particularly vulnerable demographic in this regard, as well as being among the most impacted by climate anxiety (Coffey et al. 2021). Researchers have been studying young citizens' experiences with climate change and their different climate-related emotions in recent years (Marczak et al. 2023; Ágoston et al. 2022).

Given the scale and impact of these environmental issues, we now need more empowered and active young citizens who can contribute to mitigating these extreme socio-environmental issues (Georgiou, Y, 2021). However, there is still a long way to go before reaching an adequate level of interest in sustainability. Young citizens must be able to balance development and environmental management. Integrating environmentally friendly values into development implementation will have a positive impact on human life in the future. This concept of development is called the concept of sustainable development. Sustainable development describes environmental protection from rapid economic growth. This discourse frames environmental issues as an effort to find the right balance between environmental protection, economic growth, and social justice across space and time (Hysing, E., and Olsson, J., 2018).

Education has the potential to significantly address the sustainability issues confronting humanity and is arguably the most significant instrument for changing attitudes and beliefs (Kioupi, V., & Voulvoulis, N. 2019). Environmental citizenship education is regarded as a form of ongoing education that ought to begin at a young age to instill environmentally friendly behaviors in daily life and promote global sustainable development (Cincera, J, et.al, 2020). Education's involvement in promoting sustainability in the future is necessary following sustainable development. The goals of sustainable development are in line with the four environmental sustainability dimensions: life below water, life on land, sanitation and water quality, and climate action. The strategy should be aware of environmental issues to safeguard the well-being of current and future generations. (Wendling, J. et al, 2020); (Kartika, N. et. al, 2021).

In the middle of the twenty-first century, civic engagement has emerged as a key area of study (Laitinen, H., 2018). Research on young citizen involvement in environmental management as citizens with rights and responsibilities is still lacking, nevertheless. One of the pillars for achieving sustainable development is young citizen's understanding of the value of conserving and protecting the environment. Young citizen engagement in environmental management holds a significant place (Tindangen, L.S., 2017). Young citizen engagement can take part in the development of ecological citizenship as individuals, members of society, or members of environmental groups. Protecting the environment is the primary responsibility of young citizens as persons in the ecological citizenship movement. Supporting pro-environmental initiatives is another responsibility of young citizens as individuals. Young citizens can volunteer for environmental projects. To train and accustom society to adopting environmentally friendly attitudes, the young citizen can impact society through their ideas and excitement by educating others through pro-environmental activities (Silfiana et al., 2019). Young citizens can join environmental communities as a first step to bolster the ecological citizenship movement, in addition to volunteering for environmental projects. Their ability to make environmentally friendly decisions will improve as a result of their involvement in environmental community programs. To enhance, decrease waste, and lessen environmental harm, the young citizen who participates in environmental communities will develop their environmental care character (Gusmadi, S., 2018). Young citizens are strategically important to the environmental movement. They are regarded as environmental protectors against the harsh effects of economic

growth and development. Environmental sustainability will be significantly impacted by their participation in the environmental movement. Young citizens can be introduced to the effectiveness of ecologically friendly development can be demonstrated to people through the movement for ecological citizenship. The societal movement known as "ecological citizenship" seeks to shield the environment from human selfishness.

Pro-environmental conduct results from environmental awareness, which includes emotional and cognitive aspects as well as effects on individuals and society. As a result, having people who actively engage in society and possess environmental knowledge, values, attitudes, and skills is crucial. In ecological citizenship, young citizens are crucial in encouraging and supporting behavioral changes that will lead to a better future. To encourage adherence to environmental citizenship values, people should be given the authority to accept responsibility for their actions and the effects they have on the environment and society (Iversen, E., & Jónsdóttir, G, 2019); (Sinakou, E., et.al, 2019); (Gal & Gan, 2020); (Telessiene, A., et. al, 2021).

The Sustainable Development Goals (SDGs) must be accomplished, Young Citizen Engagement in Ecological Citizenship Education implements two key elements. The first is sustainability knowledge, which is crucial for comprehending pro-environmental behavior because it entails awareness and vigilance of sustainability principles and practices, which can motivate people to take action to protect the environment and make environmentally friendly decisions. Understanding and applying information concerning sustainable development is known as sustainability knowledge. Knowledge of local cultures that might add to the discussion of sustainability is known as sustainability knowledge, (Marcos Merino J.M., et.al, 2020); (Mazzocchi. F., 2020). Regarding young citizens' engagement to pursue sustainable livelihoods, support democratic communities, and eventually lead more sustainable lives, they need to be led and inspired through the acquisition of information and skills (Blessinger, P., et.al, 2021). Young citizen is more inclined to consider contemporary concerns, ask questions, and evaluate data to discover answers when they are continuously aware, conscious, and concerned about their environment. As time passes, the younger generation's concern for the environment grows, maybe as a result of the impact of their parents and other seniors who understand the value of creating a sustainable community (Naderi & Steenburg, 2018). Getting young citizens involved in sustainable community initiatives is An essential first step in accomplishing sustainability objectives. This is because the acquisition of sustainable knowledge

requires the observation of favorable alterations in the emotive and cognitive domains of citizens who care about the environment. A thorough grasp of sustainability is ultimately necessary for the formation of sustainable environmental citizens, and this can be improved by fostering environmental consciousness, awareness, and a strong feeling of duty.

The second is an attitude of sustainability. The core of a sustainable mindset is a person's thoughts and actions about sustainable concepts and practices. It entails considering how one's actions will affect the environment, society, and economy and making decisions that support sustainability over the long run. Additionally, it was corrected by Pedikayil, J.V., et al. (2023) that adopting a sustainable mindset is essential to reaching sustainability objectives. On the other side, youth sustainable attitude describes the attitudes and convictions of young citizens toward sustainable development, because young citizens are essential in promoting change in the direction of sustainability. Fostering biospheric values and environmental self-identity in adolescents can promote their pro-environmental behavior by helping establish personal standards to act in an environmentally friendly way (Balunde, A., et al., 2020); (Lediana, E., et al., 2023). Most young citizens exhibit a conviction in the necessity for humans to adjust to and respect the constraints placed by nature (Kovari, E., et al., 2023). Furthermore, there has been a rise in youth activism on sustainability concerns, suggesting that young sustainability activists can effect change (Wildemeersch, D., et al., 2022). The government's numerous programs can significantly contribute to promoting youth involvement in environmental initiatives. The government can encourage young citizens to get involved in environmental causes by offering incentives, fostering contact, developing capacity, and enacting supportive policies. Additionally, by following influencers of ecology on social media who provide content about sustainability, young citizens can be motivated to take environmental action. When combined with environmental awareness and education, this works especially well (Aden, K., 2023); (Knupfer, H., et al., 2023). Young citizen's attitudes have always played a big role in determining the future of the economy, society, and politics. Young influencers have a significant effect on their peers, and the opinions they express influence young citizen's perspectives. Even if sustainability and green practices are widely acknowledged, fresh, creative, and inventive solutions are still required. A person's values about sustainability and the environment have an impact on their attitudes toward sustainability (Torkar, G., & Bogner, F.X., 2019). By outlining not only the duty of governments and international

organizations but also changes in corporate policies and individual behavior to embrace more sustainable lifestyles, this emphasizes the need for collective awareness to achieve the ecological balance necessary for survival (Ahmad, M., and Satrovic, E. 2024); (Paphitis, K., et al., 2023)

Furthermore, they argue that acquiring knowledge and developing attitudes are essential to a holistic approach to developing ecological citizenship. Gaining knowledge about ecological issues involves gathering information, but understanding requires interpreting and analyzing that information to gain a deeper understanding of the complex relationships that exist between humans and the environment. For people to become responsible and informed citizens who can make informed judgments about environmental issues, they must have both knowledge and attitudes. To achieve equitable environmental governance, young civic engagement is essential. It increases different voices in forming environmental policies and decisions, promotes democratic involvement, and ensures better ecosystems. Environmental solutions may become unsustainable, unfair, and unimaginative in the absence of significant young citizen engagement.

Therefore, it can be said that the young citizens' engagement in the ecological citizenship movement is to save the environment. To prevent environmental harm, the young citizen must first learn self-control to limit their excessive use of natural resources. One way that young citizen can personally participate in the ecological citizenship movement is through their daily lives and the surroundings in which they live. For example, segregating organic and non-organic trash, installing energy- and water-saving devices, and other energy- and water-saving measures. Second, it is the responsibility of the young citizen to promote pro-environmental initiatives on their own. Young citizens can volunteer for environmental projects. Young citizen e can have an impact on society through their ideas and excitement by educating others through pro-environmental activities, which will teach and accustom society to adopting eco-friendly behaviors like using less plastic. Participating in environmental campaigns via social media and other digital platforms, as well as taking part in direct environmental care actions like tree planting and cleaning up together, are the next steps. Young citizens can join environmental groups as a first step to fortify the ecological citizenship movement, in addition to volunteering for environmental projects. The young citizen who joins environmental communities will develop their environmental care character to enhance, minimize waste, and damage the environment. They will also learn how to make better decisions by taking part in activities in environmental communities.



## 4 CONCLUSION

Ecological citizenship is an objective that all societies may support together. Sustainable environmental development is made possible by the ecological citizenship movement's dedication. The fundamental right to take part in the creation of the environment should be granted to all citizens. Long-term, this contributes to the creation of an ecosystem for environmental management, equity, and ownership, which leads to sustainable development. When implemented, sustainable development results in the built environment's social, economic, and environmental sustainability. A key element of sustainable development is civic engagement, which makes sure that community members' needs and viewpoints are considered during the planning and execution of sustainable development initiatives. At every stage of development, civic engagement in ecological citizenship is a powerful tool for Sustainable Development Goals (SDGs).

To achieve the SDGs, Young Citizen Engagement in Ecological Citizenship Education implements two key elements. The first is sustainability knowledge, which is crucial for comprehending pro-environmental behavior because it entails awareness and vigilance of sustainability principles and practices, which can motivate people to take action to protect the environment and make environmentally friendly decisions. Understanding and applying information concerning sustainable development is known as sustainability knowledge. The second is an attitude of sustainability. The core of a sustainable mindset is a person's thoughts and actions about sustainable concepts and practices. It entails considering how one's actions will affect the environment, society, and economy and making decisions that support sustainability over the long run.

Young citizens can join environmental groups as a first step to fortify the ecological citizenship movement, in addition to volunteering for environmental projects. The young citizen who joins environmental communities will develop their environmental care character to enhance, minimize waste, and damage the environment. They will also learn how to make better decisions by taking part in activities in environmental communities.

## ACKNOWLEDGMENTS

We would like to thank Universitas Negeri Medan and all the people involved.

## REFERENCES

- Aden, K. (2023). How Can Governmental Incentives Inspire Youth to Be More Engaged in Environmental Protection? An Analysis of Factors Affecting Djiboutian Young Citizen Engagement Toward the Environment. *Public Governance, Administration and Finances Law Review*, 7(2), 109–137. <https://doi.org/10.53116/pgaftr.2022.2.5>
- Ágoston C. et al. (2022), "Identifying types of eco-anxiety, eco-guilt, eco-grief, and eco-coping in a climate-sensitive population: a qualitative study", *International Journal of Environmental Research and Public Health*, 19(4), p. 2461, <https://doi.org/10.3390/ijerph19042461>.
- Ahmad, M., & Satrovic, E. (2024). Modeling natural resources for ecological sustainability. *Gondwana Research*, 126, 243–266. <https://doi.org/10.1016/j.gr.2023.09.015>
- Akerboom, S., & Craig, R. K. (2022). How law structures public participation in environmental decision making: A comparative law approach. *Environmental Policy and Governance*, 32(3), 232–246. <https://doi.org/10.1002/eet.1986>
- Alisjahbana, A. Salsiah., & Murniningtyas, Endah. (2018). *Tujuan pembangunan berkelanjutan di Indonesia : konsep, target, dan strategi implementasi* (1st ed.). Unpad Press.
- Asilsoy, B., & Oktay, D. (2018). Exploring environmental behavior as the major determinant of ecological citizenship. *Sustainable Cities and Society*, 39, 765–771. <https://doi.org/10.1016/j.scs.2018.02.036>
- Balundė, A., Perlaviciute, G., & Truskauskaitė-Kunevičienė, I. (2020). Sustainability in youth: Environmental considerations in adolescence and their relationship to pro-environmental behavior. *Frontiers in psychology*, 11, 582920. <https://doi.org/10.3389/fpsyg.2020.582920>
- Blessinger, P., Sengupta, E., Makhanya, M.S. (2021). Unlocking the Potential of Higher Education by Serving the Common Good. In: van't Land, H., Corcoran, A., Iancu, DC. (eds) *The Promise of Higher Education*. Springer, Cham. [https://doi.org/10.1007/978-3-030-67245-4\\_51](https://doi.org/10.1007/978-3-030-67245-4_51)
- Boyle, A. (2020). *Climate Change, Sustainable Development, and Human Rights* (pp. 171–189). [https://doi.org/10.1007/978-3-030-30469-0\\_10](https://doi.org/10.1007/978-3-030-30469-0_10)
- Bourban, M. (2022). Ethics, Energy Transition, and Ecological Citizenship. *Comprehensive Renewable Energy*, 2nd ed. pp. 204–220. <https://doi.org/10.1016/B978-0-12-819727-1.00030-3>
- Chen, R., Chen, Y., Lyulyov, O., & Pimonenko, T. (2023). Interplay of Urbanization and Ecological Environment: Coordinated Development and Drivers. *Land*, 12(7), 12071459. <https://doi.org/10.3390/land12071459>
- Činčera, J., Romero-Ariza, M., Zabic, M., Kalaitzidaki, M., & del Consuelo Díez Bedmar, M. (2020). *Environmental Citizenship in Primary Formal Education* (pp. 163–177). [https://doi.org/10.1007/978-3-030-20249-1\\_11](https://doi.org/10.1007/978-3-030-20249-1_11)

- Coffey Y. et al. (2021), "Understanding eco-anxiety: a systematic scoping review of current literature and identified knowledge gaps", *The Journal of Climate Change and Health*, 3, p. 100047, <https://doi.org/10.1016/j.joclim.2021.100047>
- da Silva, V.P. (2022). Green Constitution: The Right to the Environment. In: Cremades, J., Hermida, C. (eds) *Encyclopedia of Contemporary Constitutionalism*. Springer, Cham. [https://doi.org/10.1007/978-3-319-31739-7\\_160-1](https://doi.org/10.1007/978-3-319-31739-7_160-1)
- Dalampira, E., & Nasis, S. A. (2020). Mapping Sustainable Development Goals: A network analysis framework. *Sustainable Development*, 28(1), 46–55. <https://doi.org/10.1002/sd.1964>
- Dhital, S., & Rupakheti, D. (2019). Bibliometric analysis of global research on air pollution and human health: 1998–2017. *Environmental Science and Pollution Research*, 26(13), 13103–13114. <https://doi.org/10.1007/s11356-019-04482-x>
- Dobson, A. 2003. *Citizenship and the Environment*. Oxford: Oxford University Press.
- Dobson, A., & Sáiz, A. V. (2005). *Citizenship, Environment, Economy*. London : Routledge.
- Erna Mena Niman. (2019). Kearifan Lokal Dan Upaya Pelestarian Lingkungan Alam. *Jurnal Pendidikan Dan Kebudayaan Missio*, 11(1), 91–106. <https://doi.org/10.36928/jpkm.v11i1.139>
- Gal, A., & Gan, D. (2020). Transformative sustainability education in higher education: Activating environmental understanding and active citizenship among professional studies learners. *Journal of Transformative Education*, 18(4), 271–292. <https://doi.org/10.1177/1541344620932310>
- Georgiou, Y., Hadjichambis, A. Ch., & Hadjichambi, D. (2021). Teachers' Perceptions on Environmental Citizenship: A Systematic Review of the Literature. *Sustainability*, 13(5), 2622. <https://doi.org/10.3390/su13052622>
- Gusmadi, S. (2018). Keterlibatan Warga Negara (Civic Engagement) dalam Penguatan Karakter Peduli Lingkungan. *JUPIIS: JURNAL PENDIDIKAN ILMU-ILMU SOSIAL*, 10(1), 31. <https://doi.org/10.24114/jupiis.v10i1.8354>
- Hadjichambis, A. Ch., Reis, P., Paraskeva-Hadjichambi, D., Činčera, J., Boeve-de Pauw, J., Gericke, N., & Knippels, M.-C. (2020). *Conceptualizing Environmental Citizenship for 21st Century Education* (A. Ch. Hadjichambis, P. Reis, D. Paraskeva-Hadjichambi, J. Činčera, J. Boeve-de Pauw, N. Gericke, & M.-C. Knippels, Eds.; Vol. 4). Springer International Publishing. <https://doi.org/10.1007/978-3-030-20249-1>
- Hayward, T. (2006). Ecological citizenship: Justice, rights and the virtue of resourcefulness. *Environmental Politics*, 15(3), 435–446. <https://doi.org/10.1080/09644010600627741>
- Hysing, E., & Olsson, J. (2018). *Green Inside Activism for Sustainable Development*. Springer International Publishing. <https://doi.org/10.1007/978-3-319-56723-5>
- Intergovernmental Panel on Climate Change (IPCC). (2023). *Climate Change 2022 – Impacts, Adaptation and Vulnerability*. Cambridge University Press. <https://doi.org/10.1017/9781009325844>
- Iversen, E., & Jónsdóttir, G. (2019). 'We did see the lapwing'—practising environmental citizenship in upper-secondary science education. *Environmental Education Research*, 25(3), 411–421. <https://doi.org/10.1080/13504622.2018.1455075>
- Jenkins, A. (2021). Ecological global citizenship education: a reframing. *International Journal of Development Education and Global Learning*, 13(2). <https://doi.org/10.14324/IJDEGL.13.2.03>
- Karatekin, K., & Uysal, C. (2018). Ecological Citizenship Scale Development Study. *International Electronic Journal of Environmental Education*, 8(2), 82–104. <https://files.eric.ed.gov/fulltext/EJ1180924.pdf>
- Karlani, E., Kartadinata, S., Winataputra, U. S., & Komalasari, K. (2019). Indonesian civic engagement among college students. *Journal of Human Behavior in the Social Environment*, 29(5), 582–592. <https://doi.org/10.1080/10911359.2019.1571980>
- Kioui, V., & Voulvoulis, N. (2019). Education for Sustainable Development: A Systemic Framework for Connecting the SDGs to Educational Outcomes. *Sustainability*, 11(21), 6104. <https://doi.org/10.3390/su11216104>
- Knupfer, H., Neureiter, A., & Matthes, J. (2023). From social media diet to public riot? Engagement with "greenfluencers" and young social media users' environmental activism. *Computers in Human Behavior*, 139, 107527. <https://doi.org/10.1016/j.chb.2022.107527>
- Kővári, E., Formádi, K., & Banász, Z. (2023). The Green Attitude of Four European Capitals of Culture's Youth. *Sustainability*, 15(10), 7866. <https://doi.org/10.3390/su15107866>
- Laitinen, H. (2018). Empowering New Agents of Civil Society or Fostering Good Citizens? Framing Youth Participation in Finnish Youth Organizations. *Journal of Civil Society*, 14(4), 328–345. <https://doi.org/10.1080/17448689.2018.1518770>
- Leal Filho, W., Shiel, C., Paço, A., Mifsud, M., Ávila, L. V., Brandli, L. L., Molthan-Hill, P., Pace, P., Azeiteiro, U. M., Vargas, V. R., & Caeiro, S. (2019). Sustainable Development Goals and sustainability teaching at universities: Falling behind or getting ahead of the pack? *Journal of Cleaner Production*, 232, 285–294. <https://doi.org/10.1016/j.jclepro.2019.05.309>
- Lediana, E., Perdana, T., Deliana, Y., & Sendjaja, T. P. (2023). Sustainable entrepreneurial intention of youth for agriculture start-up: An integrated model. *Sustainability*, 15(3), 2326. <https://doi.org/10.3390/su15032326>
- Malik, I., Prianto, A.L., Abdillah, A., Rusnaedy, Z., Amalia, A.A.: Urban resilience strategy in the climate change governance in Makassar City, Indonesia. *J. Gov. Civ. Soc.* 5, 31 (2021). <https://doi.org/10.31000/jgcs.v5i1.3884>

- Marcos Merino, J. M., Corbacho-Cuello, I., & Hernández-Barco, M. (2020). Analysis of sustainability knowingness, attitudes and behavior of a Spanish pre-service primary teachers sample. *Sustainability*, 12(18), 7445. <https://doi.org/10.3390/su12187445>
- Marczak M. et al. (2023), "Beyond climate anxiety: development and validation of the inventory of climate emotions (ICE): a measure of multiple emotions experienced in relation to climate change", *Global Environmental Change*, 83, p. 102764, <https://doi.org/10.1016/j.gloenvcha.2023.102764>
- Mazzocchi, F. (2020). A deeper meaning of sustainability: Insights from indigenous knowledge. *The Anthropocene Review*, 7(1), 77-9. <https://doi.org/10.1177/205301961989>
- Morgan, T. V. (2018). A creative communication on ecological issues in Nigeria. *Visual Communication*, 17(4), 451-460. <https://doi.org/10.1177/1470357218779105>
- Naderi, I. and Van Steenburg, E. (2018), "Me first, then the environment: young Millennials as green consumers", *Young Consumers*, Vol. 19 No. 3, pp. 280-295. <https://doi.org/10.1108/YC-08-2017-00722>
- Nathania, L., & Hartanto, B. (2021). Konsep Diri: Analisis Kesadaran Lingkungan Kaum Vegan dan Vegetarian di Britania Raya. *Scriptura*, 11(1), 10-17. <https://doi.org/10.9744/scriptura.11.1.10-17>
- Nuringsih, K., & N., N. M. (2021). *The Role of Education in Sustaining Environmental Sustainability at Rural Region in Yogyakarta*. <https://doi.org/10.2991/assehr.k.210805.003>
- Ozaki, Y., & Shaw, R. (2022). Citizens' Social Participation to Implement Sustainable Development Goals (SDGs): A Literature Review. *Sustainability*, 14(21), 14471. <https://doi.org/10.3390/su142114471>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *PLOS Medicine*, 18(3), e1003583. <https://doi.org/10.1371/journal.pmed.1003583>
- Paphitis, K., Pearl, D. L., Berke, O., & Trotz-Williams, L. (2023). Investigating the association between socioeconomic and agricultural risk factors and the incidence of Salmonella Heidelberg and Salmonella Typhimurium in Ontario in 2015: A multi-level ecological approach. *Zoonoses and Public Health*, 70(7), 604-615. <https://doi.org/10.1111/zph.13069>
- Peedikayil, J. V., Vijayan, V., & Kaliappan, T. (2023). Teachers' attitude towards education for sustainable development: A descriptive research. *International Journal of Evaluation and Research in Education (IJERE)*, 12(1), 86-95. <http://doi.org/10.11591/ijere.v12i1.23019>
- Phan, V., & Kloos, B. (2023). Examining civic engagement in ethnic minority youth populations: A literature review and concept analysis. *American Journal of Community Psychology*, 71(1-2), 54-78. <https://doi.org/10.1002/ajcp.12643>
- Plotica, L. P. (2019). Against enlightened inaction: Edification from Thoreau. *The Ecological Citizen*, 2, 163-171.
- Pohl, C., Krütli, P., & Stauffacher, M. (2017). Ten Reflective Steps for Rendering Research Societally Relevant. *GAIA - Ecological Perspectives for Science and Society*, 26(1), 43-51. <https://doi.org/10.14512/gaia.26.1.10>
- Pradhan, P., Costa, L., Rybski, D., Lucht, W., & Kropp, J. P. (2017). A Systematic Study of Sustainable Development Goal (SDG) Interactions. *Earth's Future*, 5(11), 1169-1179. <https://doi.org/10.1002/2017EF000632>
- Pudjiastuti, S. R., Hadi, N., Kurniati, P., Subkhan, M., & Rumiaty, S. (2021). Socio-Ecological Dynamics and Local Wisdom toward Adaptive Capability To Use Agricultural Technology By the Community of Kasepuhan Sinar Resmi. *Jurnal Sosioteknologi*, 20(3), 349-361. <https://doi.org/10.5614/sostek.itbj.2021.20.3.7>
- Rockström, J., Gupta, J., Lenton, T. M., Qin, D., Lade, S. J., Abrams, J. F., Jacobson, L., Rocha, J. C., Zimm, C., Bai, X., Bala, G., Bringezu, S., Broadgate, W., Bunn, S. E., DeClerck, F., Ebi, K. L., Gong, P., Gordon, C., Kanie, N., ... Winkelmann, R. (2021). Identifying a Safe and Just Corridor for People and the Planet. *Earth's Future*, 9(4). <https://doi.org/10.1029/2020EF001866>
- Schneider, F., Kläy, A., Zimmermann, A. B., Buser, T., Ingalls, M., & Messerli, P. (2019). How can science support the 2030 Agenda for Sustainable Development? Four tasks to tackle the normative dimension of sustainability. *Sustainability Science*, 14(6), 1593-1604. <https://doi.org/10.1007/s11625-019-00675-y>
- Serafini, P. G., Moura, J. M. de, Almeida, M. R. de, & Rezende, J. F. D. de. (2022). Sustainable Development Goals in Higher Education Institutions: A systematic literature review. *Journal of Cleaner Production*, 370, 133473. <https://doi.org/10.1016/j.jclepro.2022.133473>
- Serrat, R., Scharf, T., & Villar, F. (2022). Mapping Civic Engagement in Later Life: A Scoping Review of Gerontological Definitions and Typology Proposal. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 33(3), 615-626. <https://doi.org/10.1007/s11266-021-00346-6>
- Silfiana, L., & Samsuri, S. (2019). Keterlibatan Warga Negara Muda dalam Gerakan Kewarganegaraan Ekologis untuk Mewujudkan Pembangunan Berkelanjutan Berwawasan Lingkungan. *Jurnal Studi Pemuda*, 8(2), 127. <https://doi.org/10.22146/studipemudaugm.48180>
- Sinakou, E., Boeve-de Pauw, J., & Van Petegem, P. (2019). Exploring the concept of sustainable development within education for sustainable development: implications for ESD research and practice. *Environment, development and*

- sustainability, 21(1), 1-10  
<https://doi.org/10.1007/s10668-017-0032-8>
- Soga, M., & Gaston, K. J. (2016). Extinction of experience: the loss of human-nature interactions. *Frontiers in Ecology and the Environment*, 14(2), 94–101.  
<https://doi.org/10.1002/fee.1225>
- Spannring, R. (2019). Ecological citizenship education and the consumption of animal subjectivity. *Education Sciences*, 9(1). <https://doi.org/10.3390/educsci9010041>
- Steffen, W. (2019). The Anthropocene: Where on Earth are we going? *The Ecological Citizen*, 2. [www.ecologicalcitizen.net](http://www.ecologicalcitizen.net)
- Tindangen, L. S. (2017). Peran Generasi Muda Dalam Meningkatkan Kesadaran Hukum Masyarakat Tentang Pengelolaan Limbah Domestik Di Kota Manado. *E Journal Fakultas Hukum Unsrat*, 5(8).
- Telešiene, A., Boeve-de Pauw, J. Goldman, D, Hansmann, R. (2021). Evaluating an educational intervention designed to foster environmental citizenship among undergraduate university students. *Sustainability*, 13, 8219. <https://doi.org/10.3390/su13158219>
- Torkar, G., & Bogner, F. X. (2019). Environmental values and environmental concern. *Environmental Education Research*, 25(10), 1570–1581.  
<https://doi.org/10.1080/13504622.2019.1649367>
- UNESCO. (2016). *Incheon Declaration Framework for Action for the implementation of Sustainable Development Goal 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*.
- United Nations. (2015). Transforming Our World: The 2030 Agenda for Sustainable Development. In *A New Era in Global Health*. Springer Publishing Company.  
<https://doi.org/10.1891/9780826190123.ap02>
- Voulvoulis, N., & Burgman, M. A. (2019). The contrasting roles of science and technology in environmental challenges. *Critical Reviews in Environmental Science and Technology*, 49(12), 1079–1106.  
<https://doi.org/10.1080/10643389.2019.1565519>
- Wang, H., Liu, Z., & Zhou, Y. (2023). Assessing urban resilience in China from the perspective of socioeconomic and ecological sustainability. *Environmental Impact Assessment Review*, 102, 107163. <https://doi.org/10.1016/j.eiar.2023.107163>
- Weiland, S., Hickmann, T., Lederer, M., Marquardt, J., & Schwindenhammer, S. (2021). The 2030 Agenda for Sustainable Development: Transformative Change through the Sustainable Development Goals? *Politics and Governance*, 9(1), 90–95.  
<https://doi.org/10.17645/pag.v9i1.4191>
- Wildemeersch, D., Læssøe, J., & Håkansson, M. (2022). Young sustainability activists as public educators: An aesthetic approach. *European Educational Research Journal*, 21(3), 419–434.  
<https://doi.org/10.1177/1474904121990953>
- Zwolińska, K., Lorenc, S., & Pomykała, R. (2022). Sustainable Development in Education from Students' Perspective—Implementation of Sustainable Development in Curricula. *Sustainability*, 14(6), 3398.  
<https://doi.org/10.3390/su14063398>