

IMPLEMENTING WASTE MANAGEMENT AND GREENING PROGRAMS TO FOSTER AN ENVIRONMENTALLY FRIENDLY SCHOOL AT SDN 1 KESUGIHAN

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Abstract.

This community service program aimed to implement waste management and greening initiatives to support the development of an environmentally friendly school at SDN 1 Kesugihan. The program employed the Asset-Based Community Development (ABCD) approach by actively involving school stakeholders, including the principal, teachers, students, and parents. The activities consisted of 3R (Reduce, Reuse, Recycle) socialization, waste sorting practices, recycling activities, tree planting, and school greening programs. Data were collected through observation, documentation, and interviews with teachers and students to evaluate program implementation and its impact. The results showed increased student participation in waste management activities, improved environmental awareness, and the successful establishment of school greening initiatives through the use of recycled materials as planting media. The program also strengthened collaboration among school stakeholders and supported the development of sustainable environmental education practices. Overall, the ABCD-based approach effectively contributed to creating a cleaner, greener, and more environmentally responsible school culture.

Keywords: 3R, Waste Management, Greening, Environmental Education, Elementary School, Community Service

I. INTRODUCTION

Waste management and greening programs are strategic and urgent initiatives designed to create a clean, healthy, and sustainable school environment. If not properly managed, waste problems within the school environment may negatively affect students' health, learning comfort, and the surrounding ecosystem (Kinasih, 2025). Previous studies have shown that consistent implementation of the 3R program (Reduce, Reuse, Recycle) can enhance students' environmental awareness and foster their sense of responsibility toward ecological preservation. Moreover, greening activities such as tree planting and the establishment of school gardens have been proven to improve the microclimate and support educational development (Arisona, 2018).

Several previous studies have explored similar themes. Previous studies have shown that school-based waste management programs improve environmental awareness and student participation in maintaining school cleanliness (Purnami, 2021). Furthermore, greening activities have been proven to strengthen students' environmental responsibility and ecological character (Holilah et al., 2022). However, most of these studies focus only on the implementation of a single environmental program either waste management or greening without integrating both into a holistic framework of sustainable school development. Additionally, limited studies have adopted a community empowerment approach that actively involves all school stakeholders in the planning, implementation, and evaluation processes.

Therefore, this study seeks to fill this gap by combining both waste management and greening initiatives through the Asset-Based Community Development (ABCD) approach, which emphasizes community participation and the utilization of existing local resources. This integrated approach is expected to create a more sustainable and participatory model of environmental education at the elementary school level. The novelty of this community service program lies in the application of the Asset-Based Community Development (ABCD) approach to integrate waste management and greening activities through the utilization of existing school assets and active participation of all stakeholders. Unlike previous school environmental programs that

generally focus on either waste management or greening activities, this program combines both initiatives within a participatory framework that strengthens environmental education, ecological character development, and community ownership toward sustainable school environmental management.

This study aims to explore and describe the implementation process of waste management and greening programs at SDN 1 Kesugihan and how these programs contribute to the realization of an eco-friendly school. It is expected that the findings will provide insight into the effectiveness of these programs in enhancing environmental awareness among students, teachers, and other members of the school community. Furthermore, this study aims to identify both supporting and inhibiting factors in the program's implementation and to present best practices that can serve as a model for other schools in integrating sustainability and character education through practical environmental actions.

II. METHOD

This community service activity employed the Asset-Based Community Development (ABCD) approach, which emphasizes the utilization of existing assets and potentials within the school, along with the active participation of all school members. The program was conducted through several stages, beginning with a needs analysis and asset mapping process that involved observation and discussions with the principal, teachers, and students regarding waste-related issues and the lack of greenery within the school environment.

Based on this analysis, two main programs were developed: (1) a waste management program implemented through socialization activities promoting the 3R concept (Reduce, Reuse, Recycle), and (2) a greening program conducted through planting activities using recycled gallon containers creatively designed by students as planting pots. The implementation of the program involved the active collaboration of the entire school community, including the principal, teachers, and students. Limitations

in facilities were addressed creatively by repurposing recyclable materials as planting media and segregated trash bins. The activities were carried out collaboratively, starting from awareness campaigns, hands-on waste sorting practices, and regular plant maintenance.

The expected outcomes of this activity included creating a clean, green, and comfortable school environment, as well as fostering continuous environmental awareness and care among students. The ABCD approach ensured that the program was not only sustainable but also strengthened the sense of ownership and responsibility of the school community toward maintaining an eco-friendly environment. Data were collected through participatory observation, field documentation, and semi-structured interviews involving the principal, teachers, and students. Observations were conducted before, during, and after program implementation to assess changes in environmental practices and participation levels. Documentation included photographs of activities, waste-sorting practices, and greening initiatives.

The collected data were analyzed using descriptive qualitative analysis. Information obtained from observations, interviews, and documentation was categorized into themes related to environmental awareness, stakeholder participation, program outcomes, supporting factors, and implementation challenges. Data triangulation was applied by comparing findings from different sources to improve the credibility of the results.

III. RESEARCH FINDINGS

3R-Based Environmental Education in Elementary Schools

According to the World Health Organization (WHO), waste is defined as the remnants of human activities that are no longer utilized and eventually disposed of into the surrounding environment (Gusty et al., 2021). Law No. 18 of 2008 defines waste as the residual material resulting from daily human activities or natural processes in a solid form. In terms of its management, waste is categorized into three main types: (1) household waste, generated from daily domestic activities; (2) similar non-household waste, which has characteristics comparable

to household waste and originates from commercial areas (restaurants, shops), industries, or public facilities such as schools and hospitals; and (3) special waste, which includes hazardous and toxic waste, disaster debris, construction waste, or waste that cannot yet be processed with current technology (Purnami, 2021).

Based on its nature, waste can be classified into three categories: (1) organic waste, originating from living organisms and easily decomposed, such as food residues, leaves, and kitchen waste; (2) inorganic waste, which is difficult to decompose, including plastic, bottles, cans, glass, paper, rubber, and cardboard; and (3) toxic and hazardous waste (B3), consisting of materials containing harmful substances, such as medical or industrial waste and used batteries, which require special handling. In terms of form, waste can be divided into solid waste—non-flowing solid materials such as debris or unused items—and liquid waste, including wastewater, urine, and feces. From its source, waste can be categorized into several types, including industrial waste, consumer waste, human biological waste, mining waste, natural waste, and nuclear waste (Siskayanti & Chastanti, 2022).

There are many ways to address waste problems, one of which is through education on waste management. This is particularly effective at the elementary school level, where children are in the stage of developing foundational knowledge and attitudes that will shape their behavior in the future (Widyasari, 2020). Government Regulation No. 81 of 2012 outlines the 3R principle Reduce, Reuse, and Recycle as a fundamental approach to sustainable waste management (Yasa & Laksmi, 2025). The purpose of introducing this concept in schools is to build students' understanding of environmental cleanliness and develop awareness of reducing waste, starting with personal responsibility.

The 3R socialization activities conducted at SDN 1 Kesugihan emphasized the importance of waste management as part of early environmental education. The program was not only designed as a learning activity but also as a means of shaping students' ecological character. The implementation involved hands-on

participation, where students practiced reducing, reusing, and recycling waste in their school environment. For instance, the “reduce” practice encouraged students to bring reusable drinking bottles to school to minimize single-use plastic waste. The “reuse” practice taught them to make use of materials that could still serve a function, such as using old jars or bottles as containers. The “recycle” activity involved processing waste materials into creative and valuable products, such as converting used gallon containers into planting pots.

One of the tangible implementations of the 3R concept at SDN 1 Kesugihan was a greening activity that utilized recycled gallon containers as planting pots. These containers, which were previously considered waste, were transformed into creative plant pots designed by the students. This process not only enhanced their creativity but also cultivated ecological awareness and a sense of responsibility for environmental sustainability. Through planting and plant maintenance activities, students developed cooperation, discipline, and appreciation for nature.

The combination of the 3R waste management and greening programs has proven to be a practical approach to promoting environmental consciousness in schools. It bridges theoretical understanding with practical experience, allowing students to internalize environmental values through direct action. Furthermore, the creative reuse of waste materials reduces dependence on new resources and strengthens students’ innovation and problem-solving skills. The activities also foster collaboration among teachers and students, creating a sense of collective ownership toward maintaining a clean and green school environment.

These findings support the argument that environmental education should be implemented through experiential learning rather than solely classroom based theory. The approach applied at SDN 1 Kesugihan demonstrates that simple yet creative strategies such as recycling waste into planting media can lead to sustainable behavioral changes. Ultimately, the program contributes to the development of an eco-friendly school culture where environmental care becomes an integral part of students’ daily lives. As shown in Figure 1, students actively

participated in waste sorting activities by separating organic and inorganic waste according to the 3R principles.



Figure 1. Students Practicing Organic and Inorganic Waste Sorting During the 3R Socialization Program

Tree Planting and Greening Program

The tree planting and greening program (afforestation and urban greening) is designed as an effort to restore the ecological function of land, improve soil quality, regulate water systems, and increase the availability of oxygen as well as habitat for biodiversity (Holilah et al., 2022). This activity provides not only ecological benefits but also educational value, as students are trained to care for plants in a sustainable manner (Suseno et al., 2020). Such an approach raises community awareness of the importance of environmental preservation and strengthens the sense of ownership toward green spaces in their surroundings (Sarifin & Suyudi, 2025). Moreover, the greening program has demonstrated

significant benefits for the surrounding community by enhancing environmental aesthetics and improving microclimate quality.

The theory of environmental education (green education) reinforces the importance of internalizing sustainability values through greening activities. Integrating green education into the school curriculum is an effective strategy for shaping students' character and promoting environmentally conscious behavior from an early age (Sarifin & Suyudi, 2025). Through constructivist and project-based learning approaches, students can understand the direct relationship between human actions and environmental cleanliness. The school greening program thus functions not only as an educational medium but also as a practical means of fostering ecological awareness. Therefore, the integration of policy, education, and community involvement becomes a key pillar in ensuring the sustainability and effectiveness of greening programs.

Based on the results of socialization at SDN 1 Kesugihan, the implementation of the tree-planting program has had a positive impact on restoring the ecological function of the land, as the school previously had limited vegetation. This activity holds educational value, as students are trained to care for plants sustainably, fostering attitudes of care, responsibility, and environmental stewardship. The integration of environmental education into the school curriculum proves effective in shaping environmentally aware character through project-based learning. The success of this program largely depends on the active participation of students, teachers, and parents in maintaining and sustaining the greening efforts. Figure 2 illustrates the tree-planting activities conducted collaboratively by students and teachers using recycled planting media.



Figure 2. Collaborative Tree Planting and School Greening Activities Using Recycled Materials

Integration of Green Education through Tree Planting Programs in Schools

Following the successful implementation of the 3R-based waste management program, the next phase of environmental education at SDN 1 Kesugihan focused on greening and tree planting initiatives. This program aimed not only to enhance the aesthetic and ecological quality of the school environment but also to serve as a practical extension of green education. Through these activities, students were encouraged to apply the values of sustainability, care, and responsibility toward nature in real-life contexts. The integration of tree planting programs into the school curriculum thus strengthened students' environmental awareness and supported the creation of a clean, green, and sustainable school ecosystem.

The *Adiwiyata School* program is an initiative of the Ministry of Environment and Forestry (KLHK) in collaboration with the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek). The concept of

Adiwiyata represents an ideal learning environment designed to cultivate environmentally conscious individuals who take responsibility for preserving ecological sustainability. This program embodies a cultural movement for environmental awareness that integrates learning activities, school policies, and daily practices within the school community. Through the *Adiwiyata* program, all schools in Indonesia are expected to become pioneers of eco-friendly behavioral change, beginning within the school and extending to families and the wider community. The ultimate goal is to establish schools that are environmentally aware and culturally committed to sustainability (Dasrita et al., 2015).

The program encourages active participation from all school stakeholders students, teachers, principals, and administrative staff in maintaining cleanliness, managing waste, conserving energy, and engaging in activities that support environmental preservation. Thus, schools serve not only as centers for learning but also as institutions that shape environmentally responsible character (Permana & Ulfatin, 2018). The *Adiwiyata* initiative has been proven effective in instilling long-term positive habits related to environmental stewardship (Miarsyah et al., 2019). The main components of this program include: (1) school policies focused on environmental sustainability, (2) curricula that integrate environmental issues, (3) community-based environmental activities involving all school members, and (4) eco-friendly infrastructure management, such as school gardens, waste segregation systems, and proper waste disposal facilities (Purwantoyo et al., 2016). The *Adiwiyata* school initiative serves as a practical form of character education through environmental awareness, resulting in a cleaner and healthier learning environment, enhanced ecological awareness among students, and a positive role model for the surrounding community.

The community service activities conducted at SDN 1 Kesugihan were designed to assess how effectively environmental programs at the elementary school level foster ecological awareness and responsibility among students. SDN 1 Kesugihan was selected because it is one of the elementary schools actively

integrating environmental awareness values into both its curriculum and school culture. Moreover, the school has demonstrated initiative in supporting the *Adiwiyata School* program through sustainable and participatory environmental activities involving teachers, students, and school management. The program emphasizes educational and participatory approaches that encourage students to take an active role in ecological care while strengthening the school's institutional commitment to sustainability.

The Role of Environmental Education in Developing Eco-Friendly Character among Students

Environmental education serves as a strategic medium for shaping students' moral and ecological character from an early age. Within the framework of character education promoted by the Ministry of Education and Culture (Kemendiknas), it not only fosters ethical behavior and responsibility but also instills awareness of environmental sustainability. The implementation of environmental programs at SDN 1 Kesugihan such as waste management, greening, and energy-saving initiatives demonstrates how project-based learning can effectively translate ecological values into daily practice. Through continuous integration of environmental principles into the curriculum, students develop discipline, care, and empathy toward nature. This finding underscores that environmental education is not merely cognitive, but transformative, enabling the cultivation of an eco-friendly character that supports the realization of a sustainable school culture.

Character is often associated with moral values and habitual behavior. It refers to the set of mental and moral qualities that are nurtured within the family. Each student possesses a unique character shaped by the distinct values and upbringing in their family environment. In the educational context, character formation is essential because it aligns with the fundamental goals of learning. According to the Ministry of Education and Culture (Kemendiknas), character

education serves several functions: (1) fostering students' potential to behave positively and ethically, (2) serving as a means to enhance the quality of education, and (3) filtering cultural influences that contradict moral principles. Furthermore, the objectives of character education include: (1) strengthening students' moral values, (2) developing good habits and behavior, (3) instilling enthusiasm and responsibility, (4) enhancing independent and innovative capabilities, and (5) creating a school environment that is honest, safe, creative, and nurturing.

Mirza Desfandi, as cited in Mukani and Sumarsono, emphasizes that environmental education in schools can foster an environmentally conscious society. Through the *Adiwiyata* program, schools are expected to cultivate individuals who are responsible for environmental management and protection. The primary goal of fostering environmental awareness is to make students realize that everyone has a shared responsibility to protect their environment and the capacity to make positive changes especially in maintaining cleanliness. The formation of environmentally friendly character can be achieved through targeted educational programs that train and habituate students to behave responsibly toward their surroundings (Mukani & Sumarsono, 2017).

Findings from the socialization activities at SDN 1 Kesugihan suggest that environmental education has a significant impact on students' character development, particularly in terms of care, responsibility, and discipline. Students became more aware of the importance of environmental preservation through programs such as waste management, school greening, and energy conservation habits. Project-based learning related to waste management not only ensured that students understood the concept theoretically but also applied it in daily life both at school and at home. Teachers are therefore encouraged to integrate environmental awareness principles into their thematic lessons continuously. Additionally, discussions and observations with teachers and students revealed that consistent implementation of ecological education methods has successfully transformed students' behavior, encouraging them to maintain cleanliness, refrain from littering,

and adopt sustainable habits. Moreover, students demonstrated enhanced values of solidarity, social responsibility, and empathy for the environment. These findings underscore that environmental education not only broadens students' knowledge but also plays a crucial role in developing moral and environmental character from an early age.

Program Impact Evaluation

Observations conducted after program implementation indicated positive behavioral changes among students. Students became more accustomed to disposing of waste according to its category and actively participated in maintaining school cleanliness. Teachers reported increased student awareness regarding environmental issues and greater enthusiasm in greening activities. The program also strengthened collaboration among school stakeholders. The involvement of teachers, students, and school management contributed to the sustainability of environmental initiatives implemented during the program. These findings indicate that the ABCD approach not only improved environmental conditions but also enhanced community participation and environmental responsibility within the school.

Supporting and Inhibiting Factors

The success of the program was supported by strong commitment from the principal, active participation of teachers and students, and the availability of recyclable materials that could be utilized as planting media. The ABCD approach also encouraged stakeholders to maximize existing school assets and foster collective responsibility. However, several challenges were identified, including limited environmental facilities, lack of long-term maintenance resources, and varying levels of environmental awareness among students. Continuous monitoring and integration of environmental education into school activities are therefore necessary to ensure program sustainability.

IV. DISCUSSION

The implementation of waste management and greening programs at SDN 1 Kesugihan demonstrated that environmental education can be effectively integrated into school activities through participatory approaches. The program was designed not only to improve the physical condition of the school environment but also to cultivate environmental awareness among students from an early age. Through the Asset-Based Community Development (ABCD) approach, existing school assets such as student participation, teacher support, available land, and recyclable materials were utilized as the foundation for program implementation. This approach encouraged active involvement from all stakeholders rather than relying solely on external assistance. As a result, students became directly involved in environmental conservation activities and developed a stronger sense of responsibility toward maintaining school cleanliness. The findings indicate that community participation is a critical factor in fostering sustainable environmental behavior within educational institutions.

One of the main activities conducted during the program was the socialization and practice of the 3R principles (Reduce, Reuse, and Recycle). Students were introduced to the importance of reducing waste generation, reusing materials whenever possible, and recycling waste into useful products. Observation results showed that students gradually became more aware of proper waste disposal practices and demonstrated greater willingness to separate waste according to its category. This finding supports previous studies suggesting that environmental education is more effective when combined with practical learning experiences. The direct involvement of students in waste management activities allowed them to understand environmental issues not only theoretically but also through real-life practice. Consequently, environmental knowledge was transformed into environmentally responsible behavior that could be applied both at school and at home.

The utilization of used gallon containers as planting pots represented one of the most innovative outcomes of the program. Rather than viewing waste materials as useless objects, students were encouraged to recognize their potential value through creative

reuse activities. The process of transforming discarded containers into planting media stimulated creativity, problem-solving skills, and environmental awareness simultaneously. Students actively participated in designing, decorating, and using the containers for greening activities. This experience provided an opportunity for experiential learning where environmental values were embedded through practical action. Furthermore, the activity demonstrated that environmental education does not necessarily require expensive facilities, as locally available resources can be transformed into educational tools. Such findings illustrate the effectiveness of integrating waste management and greening initiatives within a single environmental education framework.

The greening component of the program also generated positive outcomes for the school environment. Prior to the intervention, several areas of the school lacked adequate vegetation and green space. Through collaborative tree-planting activities involving students and teachers, the school environment became more aesthetically pleasing and environmentally friendly. Students were assigned responsibilities for watering and maintaining plants, which encouraged long-term engagement with environmental conservation efforts. Observations conducted after the activities revealed increased student enthusiasm toward caring for plants and maintaining the cleanliness of surrounding areas. These findings suggest that greening programs contribute not only to environmental improvement but also to character development by fostering responsibility, discipline, and cooperation among students.

Another important finding concerns the role of environmental education in shaping students' eco-friendly character. Teachers reported that students became more conscious about maintaining classroom cleanliness and reducing littering behavior following program implementation. Students also demonstrated improved discipline in disposing of waste in designated bins and showed greater awareness of environmental issues during classroom discussions. Such behavioral changes indicate that environmental education can function as a medium for character formation, particularly in developing

values related to responsibility and care for the environment. These results are consistent with the objectives of environmental education, which seek not only to increase knowledge but also to promote sustainable attitudes and behavior. Therefore, environmental programs should be viewed as integral components of character education within schools.

The success of the program can also be attributed to the participatory nature of the ABCD approach. Unlike conventional environmental programs that often depend on external resources, the ABCD model emphasizes the identification and utilization of local assets and community strengths. At SDN 1 Kesugihan, teachers acted as facilitators, students served as active participants, and school leaders provided institutional support for program implementation. This collaborative arrangement enhanced stakeholder ownership and commitment to sustaining environmental initiatives. The findings suggest that environmental programs are more likely to succeed when stakeholders perceive themselves as contributors rather than passive beneficiaries. Consequently, the ABCD approach offers a practical framework for promoting sustainable environmental management within school settings.

Despite the positive outcomes, several challenges were identified during program implementation. One of the primary obstacles involved limited environmental facilities and infrastructure. Although recycled materials were successfully utilized as planting media, the availability of supporting resources such as waste segregation bins and gardening equipment remained limited. In addition, maintaining student motivation over time requires continuous supervision and reinforcement from teachers. Without regular monitoring, environmentally responsible behavior may gradually decline. These challenges highlight the importance of institutional commitment and ongoing environmental education efforts to ensure long-term program sustainability. Addressing such limitations is crucial for maximizing the effectiveness of future environmental initiatives.

Another challenge relates to the sustainability of environmental programs beyond the duration of community service activities. While students demonstrated enthusiasm

during implementation, maintaining consistent environmental practices requires integration into daily school routines and policies. Teachers emphasized the need for regular environmental campaigns, classroom-based environmental learning, and periodic evaluation of student behavior. The findings indicate that sustainability depends on the extent to which environmental values become embedded within the school culture. Therefore, environmental programs should not be treated as temporary projects but rather as continuous educational processes supported by school leadership, curriculum integration, and stakeholder participation.

The findings of this study contribute both practically and theoretically to the field of environmental education. Practically, the program provides an example of how schools can combine waste management and greening activities through locally available resources and community participation. Theoretically, the study demonstrates that the ABCD approach can serve as an effective framework for integrating environmental education, character development, and community empowerment. Unlike many previous programs that focus on single environmental interventions, this initiative combines multiple activities within a holistic and participatory model. Such integration strengthens the potential for sustainable behavioral change and enhances the overall effectiveness of environmental education programs in elementary schools.

Overall, the implementation of waste management and greening programs at SDN 1 Kesugihan successfully promoted environmental awareness, improved school environmental quality, and fostered eco-friendly behavior among students. The program demonstrated that environmental education becomes more meaningful when students actively participate in practical activities that address real environmental issues. The combination of waste management, greening initiatives, and the ABCD approach created opportunities for experiential learning while strengthening stakeholder collaboration. Although several challenges related to sustainability and resource limitations remain, the program provides valuable lessons for future community service initiatives. Replication of this model in other schools may further contribute to the development of

environmentally responsible school communities and support broader sustainability goals.

V. CONCLUSION

Based on the results of community service activities at SDN 1 Kesugihan, the implementation of waste management and greening programs proved effective in creating an eco-friendly school environment. The program not only focused on maintaining physical cleanliness but also played a crucial role in shaping students' environmental awareness and responsibility. Through the application of the 3R principles (Reduce, Reuse, Recycle), students learned to sort waste, reuse materials, and recycle them into valuable products. Meanwhile, greening activities such as tree planting, using recycled containers as plant pots, and developing a school garden successfully fostered active participation from the entire school community and improved the school's ecological quality.

Beyond environmental improvement, the program had substantial educational and character-building impacts. Students demonstrated increased environmental responsibility, discipline, and ecological awareness through consistent behavioral changes, such as proper waste disposal and plant care. These outcomes highlight that integrating environmental education into the school curriculum effectively nurtures sustainable values from an early age. Overall, the SDN 1 Kesugihan initiative serves as a best practice model for other schools in implementing the Adiwiyata (eco-school) concept, promoting long-term environmental stewardship and sustainable school culture.

This community service program demonstrated that the integration of waste management and greening activities through the ABCD approach can effectively support the development of an environmentally friendly school environment. The program improved environmental awareness, student participation, and ecological responsibility while strengthening collaboration among school stakeholders. Nevertheless, this study was limited to a single elementary school and relied primarily on qualitative observations. Future community service programs are encouraged to incorporate

quantitative evaluation instruments, such as environmental awareness questionnaires and behavioral assessment indicators, to measure program impacts more comprehensively. Replication of this model in other schools is also recommended to examine its applicability in different educational contexts.

REFERENCES

- Arisona, Risma Dwi. “Pengelolaan Sampah 3R (Reduce, Reuse, Recycle) Pada Pembelajaran IPS Untuk Menumbuhkan Karakter Peduli Lingkungan” 3 (2018).
- Bekti, Rokhana Dwi, Kris Suryowati, and Hadi Prasetyo Suseno. “Program Penanaman Sayuran Bagi Warga Rt 37 Malangan, Kota Yogyakarta Sebagai Upaya Penghijauan Dan Mendukung Ekonomi.” *Abdimas Siliwangi* 3, no. 2 (2020).
- Dasrita, Yanti, Zulfan Saam, Bintal Amin, and Yusni Ikhwan Siregar. “Kesadaran Lingkungan Peserta didik Sekolah Adiwiyata.” *Dinamika Lingkungan Indonesia* 2, no. 1 (2015).
- Holilah, Holilah, Andi Moch Januriana, Muhamad Hilman, and Royan Habibie Sukarna. “Membangun Karakter Peduli Lingkungan Melalui Penanaman Pohon Sebagai Penghijauan Lingkungan Di Desa Bolang Kecamatan Lebakwangi.” *Jurnal Pengabdian Dinamika* 9, no. 2 (2022).
- Mukani, Mukani, and Teto Sumarsono. “Pendidikan Karakter Peduli Lingkungan Berbasis Adiwiyata Pada Mata Pelajaran Fiqih Di MTsN Tambakberas Jombang.” *Jurnal Pendidikan Agama Islam (Journal of Islamic Education Studies)* 5, no. 2 (2017).
- Munawar, Syella, Erna Heryanti, and Mieke Miarsyah. “Hubungan Pengetahuan Lingkungan Hidup Dengan Kesadaran Lingkungan Pada

- Peserta didik Sekolah Adiwiyata.” *LENSA (Lentera Sains): Jurnal Pendidikan IPA* 9, no. 1 (2019).
- Permana, Bayu Indra, and Nurul Ulfatin. “Budaya Sekolah Berwawasan Lingkungan Pada Sekolah Adiwiyata Mandiri.” *Ilmu Pendidikan: Jurnal Kajian Teori Dan Praktik Kependidikan* 3, no. 1 (2018).
- Purnami, Wahyuni. “Pengelolaan Sampah Di Lingkungan Sekolah Untuk Meningkatkan Kesadaran Ekologi Peserta didik.” *INKUIRI: Jurnal Pendidikan IPA* 9, no. 2 (2021).
- Sarifin, Abriadi, and Imam Suyudi. “IMPLEMENTASI PENGHIJAUAN , EDUKATIF USIA DINI DI UPT SPF SD INPRES JONGAYA 1.” *Proficio: Jurnal Pengabdian Kepada Masyarakat* 6, no. 2 (2025).
- Sekar Kinasih, Ariella Yoharin Panjaitan, Hani’ah Asangadah, and Susanti Malasari. “Meningkatkan Kesadaran Lingkungan : Program Pengelolaan Sampah Di SD Negeri Ringinanom 1.” *Panggung Kebaikan : Jurnal Pengabdian Sosial* 2, no. 1 (2025).
- Setiawan, Ricky, Marsya Salsabila Firdausyi, Zeni Zakia Zamania, Kartika Novitasari, Kartika Budi Amanda, and Riska Octavia Arianto. “Menumbuhkan Gaya Hidup Berkelanjutan Dengan Hero Waste: Aplikasi Edukasi Pengelolaan Sampah Bagi Peserta Didik.” *Jurnal Pengabdian Masyarakat* 4, no. 1 (2024).
- Siskayanti, Juni, and Ika Chastanti. “Jurnal Basicedu, Analisis Karakter Peduli Lingkungan Pada Peserta didik Sekolah Dasar” 6, no. 2 (2022).
- Widiyaningrum, Priyantini, Lisdiana, and Eling Purwantoyo. “Evaluasi Partisipasi Peserta didik Dalam Pengelolaan Sampah Untuk Mendukung Program Sekolah Adiwiyata.” *Indonesian Journal of Conservation* 04, no. 01 (2016): 2015.

Widyasari, Aldo Ardiwilaga. “Desain Buku Ilustrasi Pembelajaran Reuse, Reduce, Recycle 3R Untuk Anak-Anak Jenjang Sekolah Dasar, *Jurnal Strategi Desain Dan Inovasi Sosial*,” 2020.

Yasa, I Gede Pradnyana Antara, and Kadek Wulandari Laksmi P. “Sosialisasi Konsep 3R Sebagai Strategi Efektif Pengelolaan Sampah Di SDN 9 Sesetan.” *Archive: Jurnal Pengabdian Kepada Masyarakat* 4, no. 2 (2025).