

ENHANCING THE SKILLS OF 3R AGENTS IN BANJARMASIN SUB-DISTRICTS VIA COLLABORATIVE INTERLOCKING ECOBRICK SOFA CONSTRUCTION PRACTICES

Lea Emilia Farida, Nadia Aprida, Safiena Najati, Anggun Danieswara,
Jasmine Risalya Larasshanti, Rahmi Widiarani, Raima
State Polytechnic of Banjarmasin
lea@poliban.ac.id

ABSTRACT

Plastic waste management poses a significant challenge in Banjarmasin, necessitating a cooperative and sustainable strategy. One innovative solution involves converting plastic waste into valuable products, such as interlocking ecobrick sofas. This community service initiative is designed to enhance the skills of family representatives, equipping them as agents of change through practical experience in crafting these ecobrick sofas. The goal is for 3R agents to replicate the knowledge and skills acquired during the training in their local communities. By doing so, the project not only helps reduce plastic waste but also fosters community empowerment, promotes a circular economy, and aids in achieving sustainable development goals.

3R agents from the Sungai Miai and Sungai Jingah sub-districts of North Banjarmasin district, along with those from the Pasar Lama sub-district of Central Banjarmasin district, participated in a recent activity supported by the government. The Sungai Miai Village Head provided permission to hold the event at the Sungai Miai Village Hall. The activity involved training and hands-on practice in creating interlocking ecobrick sofas, led by Mr. Tarmizi, a 3R agent and the originator of this sofa concept. To evaluate the participants' skills, Mr. Tarmizi conducted observations and assessments to ensure the processing techniques were executed correctly and effectively. The results indicated a notable improvement in the skills, initiative, and confidence of the participants as they learned to transform plastic waste into functional and economically valuable products.

The text highlights the importance of creating a collaborative network among stakeholders to foster a shared commitment to implement innovations across different sub-districts in Banjarmasin. A key aspect of this initiative is the transformation of training participants into agents of change, who take on the role of facilitators within their communities. This approach not only increases the reach of the program but also ensures a sustainable impact over time.

Keywords : 3R Agent, Ecobrick, Collaboration

i. INTRODUCTION

The closure of the Basirih Final Processing Site (TPA) by the Ministry of Environment in February 2025 marked a critical turning point in the waste management crisis in Banjarmasin City. A technical malfunction, caused by the mixing of rainwater and leachate, overloaded the stabilization pond (Banjarmasin, 2026b). The practice of open dumping, which is illegal, significantly contributes to environmental pollution (Admin, 2026) (Akli, 2025) and has completely halted downstream processing services. This operational freeze has led to the uncontrolled accumulation of waste in public spaces, with waste often originating from illegal Temporary Disposal Sites (TPS) found in various locations (Akli, 2025)(Admin, 2025).

In response to this urgent situation, the Banjarmasin City Government (Pemko Banjarmasin) has implemented strategic measures aimed at accelerating progress across all sectors through a multidimensional approach. These measures include strengthening regulations, improving the technical operations of the landfill, adopting more efficient waste processing technologies, and enhancing collaboration among the government, community, and business sectors (Banjarmasin, 2026b). The Banjarmasin City Government has implemented several concrete measures to tackle the waste problem, aiming to achieve a waste management target of 63.41% by 2026. These initiatives include a mandatory requirement for State Civil Apparatus (ASN) to deposit at least 2 kg of inorganic waste each month, as well as directives for sorting waste directly at home. The government is also promoting composting and independent waste processing activities. To support these efforts, 1,582 3R Agents (Reduce, Reuse, Recycle) have been actively engaged within the community (Banjarmasin, 2026a).

Although improvements in infrastructure within the downstream sector are being optimized, the key to success lies upstream, particularly in enhancing community participation. To achieve the ambitious goal of establishing an integrated, efficient, and sustainable waste management system, it is essential to accelerate the implementation of waste sorting at the source. A waste management system can only be deemed successful and ideal if waste is sorted at the source, processed separately, and not directly disposed of in landfills (TPS) or waste disposal sites (TPA).

Waste sorting at home serves as the foundation of effective waste management, simplifying the process for reuse and significantly reducing the environmental burden. If waste is not sorted, it becomes mixed, complicating recycling efforts and contributing to increasing landfill loads. To foster a sustainable waste management ecosystem, the Banjarmasin City Government has facilitated the establishment of community-based waste management systems through a network of waste banks across various regions. Consequently, enhancing the capabilities of communities and empowering 3R agents as environmental activists at the village level is a vital strategy for transforming community behavior. This initiative aims to encourage individuals to

sort, process, and minimize waste production right from their homes, ultimately leading to a more effective and sustainable waste management approach.

One of the most challenging types of inorganic waste to decompose and a major component of domestic waste is single-use plastic. Without innovative processing techniques, plastic waste will continue to accumulate in the environment or end up in landfills, offering no economic or ecological value. The Banjarmasin City Government has committed to segregating waste at its source and reducing single-use plastic waste (Medcentbjm, 2026). Therefore, a breakthrough is needed to provide capacity building for 3R Agents, enabling them to acquire a variety of skills in processing plastic waste into functional products.

Ecobrick technology has emerged as an effective method for managing plastic waste by compressing dry plastic materials into used bottles. Training and practice in using ecobrick bottles to create furniture have been widely implemented in various community service activities across Indonesia. This includes making items like sofas (Putri *et al.*, 2025), children's chairs (Rahmatullah and Verawati, 2024), tables, and more (Mursali *et al.*, 2025)(Cibro *et al.*, 2026) (Zulfa *et al.*, 2025) (Suciati *et al.*, 2023), in both schools and rural areas, and also within the community.

This community service activity also created a sofa with a unique shape and specific weight. This innovative approach allows for the assembly of these ecobrick bottles using an interlocking system, resulting in sturdy, modular, and ergonomic sofa structures. Not only do these ecobrick sofas serve as functional furniture, but they also possess aesthetic appeal, making them a valuable product in both residential and community settings. This method not only contributes to waste reduction but also promotes creative reuse, demonstrating the potential of ecobricks in sustainable design. What sets this initiative apart from previous efforts is the 'Training of Trainers' concept for 3R Agents. These agents are expected to become catalysts for change within their local communities.

The landfill problem underscores that enhancing waste reduction strategies upstream by empowering 3R Agents in the community has become not just an option, but a pressing ecological necessity. This community service initiative focused on strengthening the skills of 3R Agents in Banjarmasin through practical training in fabricating interlocking ecobrick sofas. Following this training, it is anticipated that the 3R Agents will effectively share their acquired knowledge and skills with the broader community. This dissemination of information aims to encourage the development of an environmentally sustainable circular economy while making a tangible contribution to reducing plastic waste in the Banjarmasin area.

ii. METHOD

In preparing for the activity of making an interlocking ecobrick sofa, the author went through a series of stages that required precision and teamwork, as follows:

1. Collaboration with the initiator of the interlocking ecobrick sofa

This activity was made possible through collaboration with Mr. Tarmizi, a craftsman and pioneer of the interlocking ecobrick sofa innovation. He also serves as a 3R Agent in Sungai Miai Village, Banjarmasin

2. Stage of collecting and processing raw materials for ecobrick bottles

The first step is to collect used plastic bottles and packaging from the surrounding area as the primary raw materials. Once collected, it is essential to maintain hygiene by thoroughly cleaning all bottles and packaging until they are completely dry and free of any dirt.

3. Stages of making ecobrick bottles

The process begins by cutting the used plastic packaging into small pieces to facilitate compression. These small pieces are then gradually placed into a plastic bottle and pressed firmly until the bottle becomes hard and sturdy.

4. Coordination with Sungai Miai Village

Thanks to the coordination of Mr. Tarmizi, a 3R agent, the Sungai Miai Village granted permission to use the village hall for the event and assisted in inviting 3R agents from other areas.

5. Practical steps in making an interlocking ecobrick sofa

As a final step, after completing all the ecobricks, Mr. Tarmizi demonstrated how to assemble the bottles into a functional and aesthetically pleasing interlocking sofa. Inspired by this hands-on experience, the participants shared their ideas for creating a sofa and table using the ecobricks.

6. Evaluation and Discussion Stage

To assess the participants' skills, Mr. Tarmizi evaluated the quality of the ecobrick bottles they created and provided guidance throughout the production process. During this session, the participants also shared their experiences and discussed the challenges they encountered as 3R agents.

iii. RESULTS AND DISCUSSION

One of the key educational elements highlighted in this ecobrick sofa-making training is the importance of understanding the significant difference between waste that is sorted at the source and mixed waste. When sorting begins directly from the household kitchen, inorganic materials, particularly plastics, tend to stay clean and dry. This cleanliness enhances their suitability for direct recycling or reuse as raw materials for ecobricks.

The issue of waste accumulation in Banjarmasin is largely driven by the interplay between organic waste, such as food scraps, and inorganic waste. A crucial aspect of the training on making interlocking ecobrick sofas is to educate participants about the significant differences between waste that is sorted at the source and waste that is mixed. When households begin sorting their waste directly from the kitchen, inorganic materials, particularly plastics, can remain clean and dry. This cleanliness greatly

enhances their usability for direct recycling or repurposing as raw materials for ecobricks.

Unfortunately, the mixing of organic and inorganic waste leads to a dramatic deterioration in the quality of approximately 70%-90% of inorganic materials, rendering much of it as residual waste that becomes challenging to process. For

instance, plastic items such as snack wrappers or bags that have come into contact with greasy food are often deemed unsuitable for recycling and are rejected by waste banks. As a result, this contaminated waste ultimately contributes to the burden on landfills.

Thus, early sorting emerges as a critical factor in the recycling supply chain. It sets the stage for successful recycling processes, from scavengers to waste banks and finally to recycling facilities. The effectiveness of these systems is heavily reliant on the quality of waste sorting conducted at the household level. By fostering a culture of early sorting, we can significantly alleviate the strain on waste management systems and contribute to a cleaner, more sustainable environment.

Training on making interlocking ecobrick sofas with the 3R Village Agents serves as a means of transferring appropriate technology that changes the community's perspective on plastic waste. The interlocking system for constructing this furniture demands precision, cleanliness, and uniform density of ecobrick bottles. Through this practice, the 3R Agents learn that consistent waste sorting has significant multiplier effects. It reduces the physical workload for cleaning staff since waste has been hygienically separated, streamlines recycling processes because the plastic material is prepared for reuse, and enhances the economic value of waste, transforming it from mere scrap into an ecobrick sofa that possesses aesthetic appeal and strong marketability.

Quantitatively, the interlocking ecobrick sofa innovation has a significant, measurable impact in reducing plastic waste at the village level. To produce one unit of this sofa, 172 used 600 ml plastic bottles of the same brand are required (in this case, the author uses the Prof brand), where each bottle is densely filled with 200 grams of dry plastic shreds. Through this formulation, the production of one sofa unit can divert and save up to 34.4 kg of single-use plastic waste from ending up in landfills.

Achieving this figure is closely linked to the collective collaboration and mutual support of the community. This process involves activities such as collecting bottles, cleaning plastic packaging, shredding, and compacting the material into bottles. Through this teamwork, environmental management, which once seemed overwhelming when approached individually, has turned into a participatory and effective social movement with a significant ecological impact for the city of Banjarmasin.

1. Collaboration with the initiator of the interlocking ecobrick sofa

Mr. Tarmizi provided a workspace and resources that significantly enhanced the author's productivity. His commitment to creating simple, homemade tools greatly improved the author's experience. For instance, he designed a plastic

packaging cutter that accelerated the shredding process and a press that was instrumental in compacting the shredded plastic into bottles.

In addition to providing these tools, Mr. Tarmizi offered valuable guidance on the proper technique for filling ecobrick bottles. He emphasized the importance of adding the plastic packaging pieces gradually in small amounts and pressing them firmly using the press. The author ensured that every corner of the bottle

was completely filled, without any air spaces, resulting in a dense, sturdy bottle capable of serving as a foundation for a sofa. This collaboration clearly illustrates how environmental awareness, coupled with local innovation, can create a productive learning environment for the author.

2. Stage of collecting raw materials for ecobrick bottles

Preparing the raw materials for ecobrick bottles, which include plastic bottles and sachet packaging (from beverages and kitchen spices), is more challenging than one might expect. To tackle this, the author began by collecting these materials on a small scale within their own home environment. To further expand the collection efforts, the author participated in a real action event organized by BEM Poliban as part of “the Clean and Green Program” on November 7, 2025 (Satya, 2026). Through this initiative, the author actively took part in the campus cleanup movement (Bidgas.vol, 2025).



Figure 1. Collecting Plastic Bottles and Packaging
Sumber : (Bidgas.vol, 2025), Source: Author's Documentation

Thanks to the Clean and Green initiative, the canteen area is now free of scattered plastic waste. It would be a shame if such a positive movement ended up being just an annual event. Hopefully, this initiative can serve as the first step towards consistently sorting waste at the source. To support this, the author coordinated with Mr. Tarmizi to educate canteen residents about the importance of sorting their waste. This education was received enthusiastically by the canteen owners, who also desired a cleaner and healthier environment for their businesses. Furthermore, Mr. Tarmizi will collect plastic packaging waste every three days for further processing, which can be used as raw material for the production of interlocking ecobrick sofas.



Figure 2. Education for Canteen Residents and the Process of Picking Up Remaining Plastic Wrappers Sorted by the Canteen

Source: Author's Documentation

3. Stage of processing raw materials for ecobrick bottles

Once the bottles and plastic packaging are collected, the process of preparing ecobricks begins with thoroughly washing everything to remove any bacteria or food residue. After washing, all materials are dried in the hot sun until they are completely dry, which is crucial to prevent mold growth inside the bottles.



Figure 3. Washing and Drying Process for Plastic Packaging

Source: Author's Documentation

Once the materials are fully dry, the plastic packaging is cut or chopped into small pieces to facilitate compacting them into the ecobrick bottle. The author repeated this step while collaborating at Mr. Tarmizi's house to ensure there were enough materials to produce one interlocking ecobrick sofa.



Figure 4. Plastic Shredding Process at Mr. Tarmizi's House

Source: Author's Documentation

In addition to the preparation, we also demonstrated the census process on the same day to ensure it was understood correctly. This served as an illustration of the process that would later be implemented by the 3R agents in the community.



Figure 5. Plastic Shredding Process in the Sungai Miai Village Hall

Source: Author's Documentation

4. Stages of making ecobrick bottles

The process of inserting shredded plastic into the ecobrick bottle requires a specific strategy. Properly sorting the plastic types during insertion leads to optimal density. The author prepared four packages of shredded plastic, each weighing 50 grams. Each participant was then tasked with carefully packing the four packages into their respective ecobrick bottles.



Figure 6. Types of Prepared Plastic Shreds

Source: Author's Documentation

The filling process is carried out in stages, consisting of four systematic steps:

- a. Begin by inserting 50 grams of shredded plastic packaging into the bottle using a funnel for ease. Press it down with a wooden stick to ensure compactness.



Figure 7. Phase I of Inserting Plastic Shreds

Source: Author's Documentation

- b. Add 50 grams of the second stage of shredded plastic, then compact it using a press for 3 to 5 minutes to eliminate any empty space at the bottom of the bottle.



Figure 8. Phase II of Inserting Plastic Shreds

Source: Author's Documentation

- c. Introduce 50 grams of shredded, stiffer-textured plastic. Press this layer again for 3 to 5 minutes until the bottom of the bottle is completely solid. A shredder, such as the one made by Mr. Tarmizi, is effective for shredding this type of plastic.



Figure 8. Phase III of Inserting Plastic Shreds

Source: Author's Documentation

- d. Finally, add 50 grams of softer-textured plastic shreds to the top of the bottle without further pressing them down. These shredded pieces will help bind the upper layers of plastic together. The process concludes by tightly sealing the bottle.





Figure 10. Phase IV of Inserting Plastic Shreds

Source: Author's Documentation

Mr. Tarmizi taught and guided the author through each of these stages in detail. As a result, the author gained the knowledge and skills necessary to train and support the 3R agents effectively on the designated day.

5. Coordination with Sungai Miai Village

With the help of Mr. Tarmizi, our 3R agent, we coordinated with Sungai Miai Village, which facilitated the use of their village hall as the event venue on May 2, 2026. The hall is situated next to the Sungai Miai Village office at Jalan Cendana I No. 9, RT 12, in the North Banjarmasin District of Banjarmasin City, South Kalimantan Province, ZIP Code 70123.

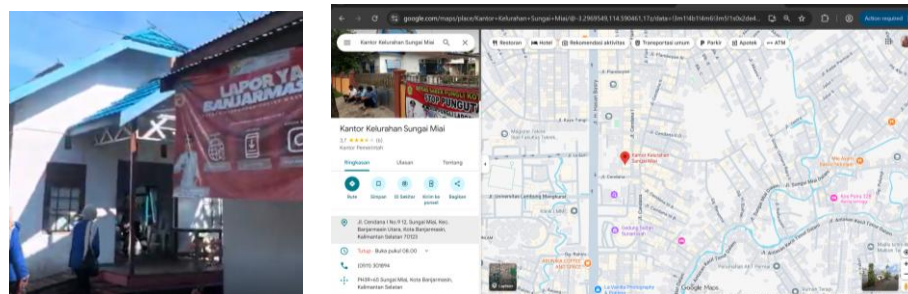


Figure 11. Location of the Sungai Miai Village Hall

Source : <https://maps.app.goo.gl/chkZHXP5cgHy94y8>

Additionally, Sungai Miai Village assisted in inviting 3R agents from other villages. Participants in this event included 3R agents from Sungai Miai and Sungai Jingah Villages (both in North Banjarmasin District) as well as Pasar Lama Village (in Central Banjarmasin District).

6. Practical steps in making an interlocking ecobrick sofa

The ecobrick bottles are securely glued together with duct tape in a specific arrangement to create blocks. Once formed, these ecobrick blocks are assembled using an interlocking system to create a sturdy sofa structure.



Figure 12. Ecobrick Bottles and Ecobrick Blocks

Source: Author's Documentation

For a more polished and ready-to-use appearance, the sofa can be upholstered, or it can be left bare for easier assembly and disassembly.



Figure 13. Interlocking Ecobrick Sofa

Source: Author's Documentation

As a final step, once all the ecobrick blocks were ready, Mr. Tarmizi demonstrated how to assemble the bottles into a functional and aesthetic interlocking sofa. This session successfully sparked inspiration among the participants, who immediately expressed their initiatives to create larger creations, such as a long sofa and a table.



Figure 14. Practice for Making Interlocking Ecobrick Sofa

Source: Author's Documentation



Figure 15. Group Photo of the Author and Participants After Activities

Source: Author's Documentation

7. Evaluation and Discussion Stage

Mr. Tarmizi conducted a quality assessment of the ecobrick bottles produced during the practical process to evaluate the participants' techniques and provide feedback. Fitting four 50-gram bags of shredded plastic into a 600 ml bottle turned out to be an unexpected challenge for the participants. Initially, they thought that such a large amount of plastic wouldn't fit. Those who were unable to fit all the shredded plastic were encouraged to try again. Throughout the process, the author offered guidance until all the ecobrick bottles were completed, allowing each individual to enhance their skills and overcome the challenges they encountered.

Participants shared their experiences, challenges, and lessons learned. They also discussed ideas for future community initiatives aimed at promoting continued engagement in sustainable practices. Throughout this phase, the authors highlighted the importance of collaboration and skills development among community members, which ultimately contributes to the effective management of plastic waste.

iv. CONCLUSION

The high volume of waste entering the landfill (tons per annum) every day highlights the necessity of decentralized waste management at the upstream level, specifically within households and sub-districts. The city government has launched the formation of 3R Agents at the sub-district level to lead educational initiatives and promote waste sorting directly at the source.

While waste sorting is often promoted as the primary solution to address the urban environmental crisis, real-world implementation reveals a far more complex dynamic. Successful waste reduction cannot happen in isolation. It requires interactions across multiple sectors, including the reliability of transportation systems, the availability of supporting facilities (such as 3R waste disposal sites), legal regulations, and most importantly, community behavior.

In Banjarmasin, the waste issue is not just a technical question of "sorting or not sorting." It involves synergizing all elements of society, governance systems, and government policies to ensure they work together. In this context, the collaboration to strengthen the capacity of Sub-district 3R Agents plays a strategic role as a bridge connecting macro government policies with micro practices at the household level. The simple tools, such as a chopper and a press, developed by Mr. Tarmizi greatly simplify the ecobrick-making process. It would be beneficial if every sub-district in Banjarmasin had access to these tools, enabling 3R agents to collaborate with the community in managing plastic waste.

Although awareness of waste sorting among Banjarmasin residents is still developing, this community service program illustrates that large-scale behavioral changes can be initiated through small, consistent actions. The creation of the ecobrick sofa is a concrete example of inclusive environmental awareness that can begin in each resident's kitchen. By adopting the simple habit of collecting and cleaning single-use plastic wrappers, a more structured community-based management system has emerged, increasing ecological awareness and fostering a sense of shared responsibility for the future of Banjarmasin's urban environment.

v. REFERENCE

- Admin (2025) *Imbas dari Penutupan TPA Basirih, Kementerian Lingkungan Hidup Siap Kawal Banjarmasin dalam Pengelolaan Sampah*, <https://www.banjarmasinkota.go.id/>. Available at: <https://www.banjarmasinkota.go.id/2025/02/imbasm-dari-penutupan-tpa-basirih.html> (Accessed: 1 July 2026).
- Admin (2026) *Setahun Disegel, Begini Kondisi TPA Basirih Sekarang*, <https://www.instagram.com/kanalkalimantan/>. Available at: <https://www.instagram.com/reels/DXN8Albj6N3/> (Accessed: 1 July 2026).
- Akli, Z. (2025) *Darurat Sampah di Kota Banjarmasin*, <https://mbs.uin-antasari.ac.id/>. Available at: <https://mbs.uin-antasari.ac.id/2025/05/darurat-sampah-di-kota-banjarmasin-2/> (Accessed: 1 July 2026).
- Banjarmasin, P. (2026a) *Banjarmasin Kejar Target Pengelolaan Sampah 63,41%, Instagram Pemko_Banjarmasin*. Available at: <https://www.instagram.com/p/DWiHRNTEeDa/> (Accessed: 30 June 2026).
- Banjarmasin, P. (2026b) *Kami Tak Punya Waktu Menunggu. Sampah Harus Dituntaskan Sekarang, Instagram Pemko_Banjarmasin*. Available at: https://www.instagram.com/p/DX0iNlakR_l/?img_index=1.
- Bidgas.vol (2025) *Clean & Green, Instagram Bidgas.vol*. Available at: <https://www.instagram.com/stories/highlights/18081593108218592/> (Accessed: 3 July 2026).
- Cibro, E. *et al.* (2026) 'Terapan Penerapan Metode Ecobrick sebagai Solusi Inovatif dalam Pengelolaan dan Pemanfaatan Sampah Plastik di SDN 054945 Desa Dogang Kecamatan Gebang Kabupaten Langkat Application of the Ecobrick Method as an Innovative Solution in Plastic Waste Managemen', *Pelayanan Unggulan : Jurnal Pengabdian Masyarakat*, 3(1), pp. 129–142. Available at: <https://doi.org/https://doi.org/10.62951/unggulan.v3i1.3068>.
- Medcentbjm (2026) *Air Lindi Aman, TPA Basirih Bergerak Menuju Pengelolaan Sampah Terpadu*, <https://www.banjarmasinkota.go.id/>. Available at: <https://www.banjarmasinkota.go.id/2026/01/air-lindi-aman-tpa-basirih-bergerak.html> (Accessed: 1 July 2026).
- Mursali, S. *et al.* (2025) 'Ecobrick Sebagai Upaya Pengelolaan Sampah Plastik di SDN Gerintuk Praya', *Lumbung Inovasi : Jurnal Pengabdian Kepada Masyarakat*, 10(4), pp. 1419–1429. Available at: <https://journal.unram.ac.id/index.php/wicara/id/article/view/5594>.
- Putri, H. *et al.* (2025) 'Training on Making Ecobricks as a Plastic Waste Management Solution at SDN Tatah Layap 2 Banjar Regency', in *Proceeding International Conference on Religius & Cultural Sciences*. Peneleh Research Institute, p. 13. Available at: <https://journals.onereseach.id/index.php/incrcs/article/view/279>.
- Rahmatullah, S. and Verawati, N.N.S.P. (2024) 'Pengelolaan Sampah Plastik dengan Metode Ecobrick sebagai Upaya Mendukung SDGs ke-12 : Konsumsi dan Produksi yang Bertanggung Jawab', *Jurnal Pengabdian Magister Pendidikan IPA*, 7(4), pp. 1680–1684. Available at: <https://doi.org/https://doi.org/10.29303/jpmipi.v7i4.9033>.
- Satya, K.B. (2026) *Dokumentasi Clean and Green, Instagram BEM Poliban*. Available at: https://www.instagram.com/p/DTwwH_LkUQo/?igsh=MWl0ZXc1cDczcjJsZw%3D%3D&img_index=1 (Accessed: 3 July 2026).
- Suciati, E. *et al.* (2023) 'Pemanfaatan Sampah Plastik Menjadi Ecobrick Sebagai Upaya Mengurangi Sampah Plastik di Desa Pringgabaya Kecamatan Kabupaten Lombok Timur', *JJPPM : Jurnal Pendidikan dan Pengabdian Masyarakat*, 6(4), pp. 293–298. Available at: <https://doi.org/http://dx.doi.org/10.29303/jppm.v6i4.6037> Abstrak.
- Zulfa, A.M. *et al.* (2025) 'Pemanfaatan Ecobrick sebagai Solusi Pengelolaan Sampah Plastik di Nagari Langki', *Manaruko : Jurnal Pengabdian Masyarakat*, 4(2), pp. 158–164. Available at: <https://doi.org/https://doi.org/10.24036/manaruko.v4i2.56>.