

**ANALYSIS OF THE EFFECTIVENESS OF THE
ECO-TICKET PROGRAM TRANS BANJARMASIN
AS A PLASTIC WASTE MANAGEMENT
STRATEGY BASED ON THE PRINCIPLES OF
ECOLOGICAL JUSTICE**

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Abstrak: The city of Banjarmasin is currently facing an increase in waste production, from 168,032.90 tons in 2020 to 171,998.09 tons in 2023, and potentially faces bigger problems with the planned closure of the Basirih Landfill in February 2025. As an innovative step, the Eco-Ticket Trans Banjarmasin Program was introduced, allowing residents to exchange eligible used plastic bottles/cups for free bus tickets, while supporting circular economy principles. This study evaluates the program's effectiveness and its alignment with ecological justice using a qualitative, descriptive approach. Budiani's effectiveness indicators (target accuracy, socialization, goal achievement, and monitoring) are employed as the implementation-evaluation framework, while ecological justice is interpreted through the perspectives of James Lovelock, Vandana Shiva, and Andrew Dobson. Data were triangulated through field observations at exchange points, official documents/program records from relevant agencies (Transportation Agency, Environment Agency, and the City Waste Bank), and semi-structured interviews with key implementers. Findings indicate that within the first four months the program collected 60,523 plastic bottles/cups (≈ 200 kg) exchanged for bus tickets, alongside reported increases in public transport use and environmental awareness. The analysis concludes that the program performs strongly on targeting and goal achievement, but requires improvement in outreach (socialization) and monitoring to ensure broader access and

credible long-term measurement. Overall, Eco-Ticket represents a promising local policy innovation that links waste reduction to mobility incentives, while operationalizing ecological justice through pollution prevention, fairer distribution of environmental benefits, and strengthened ecological accountability in urban communities.

Keywords: Effectiveness, Eco-Ticket Program Trans Banjarmasin, Plastic Waste Management, Principles of Ecological Justice

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INTRODUCTION

Plastic waste has become a global environmental issue that has received serious attention from various countries and international institutions. Every year, global plastic production is estimated to reach more than 400 million tons, and about 36% of it is used for single-use packaging that immediately ends up as waste.¹ The characteristics of plastic, which is difficult to decompose, make it one of the most dangerous types of waste, as it takes hundreds of years to degrade. The accumulation of plastic waste on land and in the oceans not only causes environmental aesthetic disturbances, but also poses a serious threat to ecosystems, food chains, and human health. This phenomenon shows that the problem of plastic waste is not merely a technical management issue, but a structural problem that requires a cross-border, cross-sectoral approach and continuous global collaboration.

The problem of plastic waste is also very evident in Indonesia, which is known as a maritime country with the second longest coastline in the world. Population growth, rapid urbanization, and consumption patterns that tend to be instant and based on single-use plastics have worsened the national waste management situation. Data from the Ministry of Environment and Forestry (KLHK) shows that Indonesia produces around 68.5 million tons of waste per year, with plastic waste accounting for 17% or the equivalent of 11.6 million tons². This figure places Indonesia in second place as the world's largest producer of plastic waste after China. The problem is further complicated by the fact that the majority of waste is not managed properly. Unmanaged plastic waste ends up

¹ "One Data | City of Banjarmasin," accessed August 2, 2025, <https://satudata.banjarmasinikota.go.id/data-statistik/12d56b12-54da-4805-ae4d-e457f98b8d36>.

² Ministry of Environment and Forestry, 2023 KLHK Performance Report, accessed September 19, 2025, <https://www.menlhk.go.id/work-plan/laporan-kinerja-2023-klhk>.

polluting the sea, land, and air, and contributes to ecological disasters such as urban flooding caused by waterways clogged with plastic waste.

This condition is also experienced by the city of Banjarmasin, the capital of South Kalimantan Province, which is known as *the City of a Thousand Rivers*. Rivers, which should be a source of life for the community, are often used as a dumping ground for household and commercial waste. Data from the Banjarmasin City Environment Agency shows an upward trend in waste generation each year, from 168,032.90 tons in 2020 to 171,998.09 tons in 2023.³ This figure shows an average increase of around 1.32% per year. Without an appropriate management strategy, this condition can worsen environmental pollution, reduce the carrying capacity of urban ecosystems, and increase the risk of flooding due to sedimentation and blockage of river flows by plastic waste. The situation is exacerbated by the closure of the Basirih Final Disposal Site (TPA) in February 2025 because its capacity has exceeded its maximum limit. This situation has forced the Banjarmasin City Government to seek more innovative and sustainable management alternatives.

According to a 2022 report by the *United Nations Environment Programme (UNEP)*, around 11 million tons of plastic waste enters the ocean every year, and this figure is projected to double by 2030 if no systematic prevention efforts are made.⁴ This threat not only damages marine ecosystems but also endangers human health through microplastics entering the food chain. This fact proves that plastic waste is a global problem that transcends national borders. Meanwhile, at the national level, the Ministry of Environment and Forestry reports that of the total 68.5 million tons of waste, only about 10% is successfully recycled.⁵ The rest ends up in landfills, is burned openly, or is disposed of directly into the environment without going through a treatment process. The city of Banjarmasin, as part of this national problem, has also felt the serious impact. The closure of the Basirih landfill is clear evidence of the limitations of waste infrastructure at the regional level. This situation has forced the local government to take alternative measures

³ "Waste Generation in Banjarmasin City Increases Every Year, What Are the Causes? - jejakrekam.com," accessed September 19, 2025, <https://jejakrekam.com/2024/01/11/timbul-an-sampah-di-kota-banjarmasin-meningkat-setiap-tahun-apa-penyebabnya/>.

⁴ U. N. Environment, "Turning off the Tap: How the World Can End Plastic Pollution and Create a Circular Economy | UNEP - UN Environment Programme," February 5, 2023, <https://www.unep.org/resources/turning-off-tap-end-plastic-pollution-create-circular-economy>.

by utilizing the Banjarbakula regional landfill while also developing innovative programs based on active community participation.

One of Banjarmasin's most visible local innovations is the Eco-Ticket Trans Banjarmasin program, a flagship instrument under the city's broader EcoGreen initiative. The program links waste management to sustainable mobility by allowing residents to exchange used plastic bottles/cups for free Trans Banjarmasin bus tickets, thereby turning household plastic into an incentive for public transport use. For example, residents can redeem 3 large (1500 ml) bottles, 5 medium (600 ml) bottles, 10 small (300 ml) bottles, or 15 cups (220 ml) for one ticket. This design makes Eco-Ticket more than a conventional technical disposal approach: it intentionally mobilizes citizen participation and ecological awareness through a daily, low-barrier practice, while also widening access to the benefits of cleaner rivers and affordable mobility. In other words, Budiani's effectiveness metrics help assess how well Eco-Ticket meets its operational goals, while ecological justice principles assess whether those goals—and the way they are achieved—align with broader norms of environmental fairness and responsibility. This article therefore asks: how effective is the Eco-Ticket program in implementation, and to what extent does it translate ecological justice from theory into practice in Banjarmasin?

Previous studies on incentive-based plastic waste management show that reward mechanisms can increase household participation in sorting and collection, but they also consistently identify two practical bottlenecks: uneven program socialization and weak monitoring systems that make long-term impact difficult to verify. International discussions of “waste-to-reward” schemes similarly emphasize that tangible incentives can accelerate behavioral change, yet program performance often varies across communities depending on access to information, proximity to exchange points, and trust in implementing institutions. Importantly, much of this literature evaluates success mainly in technical or behavioral terms, while giving less attention to distributional questions—whether program benefits reach groups most exposed to plastic pollution (e.g., riverbank and low-income communities). This gap motivates the present study: Eco-Ticket is evaluated not only for how well it works administratively, but also for whether it advances ecological justice within an unequal urban environment.

This study is novel because it integrates two complementary analytical lenses to evaluate a single local policy instrument. First, we use Budiani's program effectiveness indicators (target accuracy, socialization, goal achievement, and monitoring) to assess whether Eco-Ticket is implemented in a way that reaches

intended beneficiaries and produces measurable outputs. Second, we apply ecological justice as a normative framework—drawing on Lovelock’s Gaia perspective on systemic ecological care, Shiva’s emphasis on interspecies responsibility and participatory environmental ethics, and Dobson’s argument that environmental justice requires a fair distribution of environmental goods and burdens across social groups and generations. Combining these lenses matters because a program can be “effective” in a managerial sense yet still reproduce unequal environmental burdens, while a justice-oriented program can fail if it is poorly implemented. We therefore assess Eco-Ticket both as an instrument of policy performance (how well it works) and as an instrument of ecological fairness (for whom it works, and with what distributive consequences), using the same empirical findings to inform both evaluations.

Based on this description, it can be emphasized that the problem of plastic waste in Banjarmasin City cannot be separated from the global and national contexts. The presence of the EcoTicket Trans Banjarmasin Program is a strategic step by the city government in providing innovative, equitable, and sustainable waste management solutions. This research is important to provide a comprehensive picture of the program's effectiveness, while ensuring that environmental management is not only viewed from the technical aspect of waste reduction, but also from the formation of public ecological awareness. Thus, this program can become a model of public policy that is able to integrate ecological, social, and economic interests in order to realize sustainable development and ecological justice between generations.

METHOD

This study employs a qualitative case-study design (empirical legal and policy analysis) to examine the Eco-Ticket Trans Banjarmasin program as both a plastic-waste management strategy and a socio-ecological justice intervention. Data were triangulated from (i) field observations at exchange points and bus operations, (ii) official documents and program records from the Transportation Agency, the Environment Agency, and the Banjarmasin City Waste Bank (including administrative procedures and reported outputs such as bottle counts/weights), and (iii) semi-structured interviews with key implementers (Head of the Transportation Agency, Director of the Waste Bank, and the program field coordinator). Analysis proceeded in two stages. First, findings were coded against Budiani’s four effectiveness indicators to structure the evaluation of targeting, outreach, goal achievement, and monitoring. Second, these empirical

results were interpreted through ecological justice principles—pollution prevention, distributive fairness of environmental and mobility benefits, and ecological accountability—to assess the program’s normative alignment with Lovelock, Shiva, and Dobson. This two-step procedure strengthens coherence: it ensures that claims about “effectiveness” are grounded in implementation evidence, while the ethical stakes of environmental governance remain analytically visible throughout the paper.

RESULT AND DISCUSSION

Conceptual Principles of Ecological Justice

The *Ecogreen* program in plastic waste management in Banjarmasin City based on the principle of ecological justice can be seen from how the program reflects ecological values that are not only oriented towards technical waste reduction but also towards transforming the way of looking at the environment itself. The principle of ecological justice is a normative approach that emphasizes that all living things, both humans and other living creatures, have equal rights to live in a healthy environment. This approach rejects the anthropocentric paradigm that places humans at the center of all values, and instead emphasizes an ecocentric and bioscentric view, namely that ecological values must be integrated into social, political, and economic practices.⁵

Ecological justice is grounded in environmental philosophy and environmental political theory. Lovelock’s Gaia hypothesis frames the earth as an interconnected living system whose resilience depends on reducing destabilizing pollutants;⁶ this lens highlights why preventing plastic leakage into waterways is a systemic maintenance imperative, not merely an aesthetic concern. Shiva’s environmental philosophy adds a normative claim about interspecies solidarity and moral responsibility, emphasizing that participatory community ethics are central to sustainable change rather than peripheral “awareness” activities.⁷ Complementing these, Dobson’s work on environmental justice highlights distributive questions—who bears the burdens of pollution and who receives the benefits of environmental policy, including cleaner public space, reduced health

⁵ Andrew Dobson, *Justice and the Environment: Conceptions of Environmental Sustainability and Theories of Distributive Justice* (Oxford: Oxford University Press, 2003).

⁶ James Lovelock, *Gaia: A New Look at Life on Earth* (Oxford: Oxford University Press, 1979).

⁷ Vandana Shiva, *Earth Democracy: Justice, Sustainability and Peace* (London: Zed Books, 2005).

risks, and access to mobility. Taken together, these perspectives allow Eco-Ticket to be assessed not only as a waste-reduction mechanism, but also as a justice-relevant intervention whose effectiveness must be evaluated alongside its distributional and accountability consequences.⁸

The Ecogreen program implemented in the city of Banjarmasin is an effort that relies on public education to reduce the use of single-use plastics through the promotion of cloth bags, personal water bottles, and the adoption of a low-waste lifestyle.⁹ This program can be said to be effective because it focuses not only on the technical aspects of waste management but also on raising public ecological awareness. In this case, the program reflects the principle of prevention in ecological justice, which is to prevent environmental pollution before its adverse effects arise. Awareness of the importance of preventing the accumulation of plastic waste is a form of ecological responsibility based on moral principles, not just legal formalities.¹⁰

Furthermore, Ecogreen also touches on the dimension of ecological distributive justice. Plastic waste in cities often does not have an equal impact; communities living in slums or riverbanks are more vulnerable to plastic waste pollution than middle and upper-class communities. This program targets these vulnerable communities, thereby promoting the redistribution of environmental benefits in the context of ecological social justice.¹¹ This demonstrates that environmental management cannot be separated from existing social structures, and the success of environmental programs must be assessed based on the extent to which they are able to create equal access and benefits for all levels of society.

Although it does not directly include legal mechanisms for environmental compensation, Ecogreen indirectly promotes the spirit of ecological accountability. In the principle of ecological justice, polluters, whether individuals or corporations, should be held responsible for the impacts they cause. In practice, this program fosters collective responsibility, both for plastic producers and

⁸ Wæver Pederson, "Environmental Principles and Environmental Justice," *Law, Environment and Development Journal* 6, no. 1 (2010).

⁹ UIN Antasari Banjarmasin, "Ecogreen Program and Zero Waste Movement in Banjarmasin," *Jalujur Journal* 5, no. 2 (2023), <https://jurnal.uin-antasari.ac.id/index.php/jalujur/article/view/13807>

¹⁰ Kompasiana, "Realizing Ecological Justice Through Ecosentric-Based Advocacy" (2024), <https://www.kompasiana.com/muhammadakhsanulakhlaq3363/686fe5d434777c609a700cf2>

¹¹ N. Aini and S. Husna, "Integrating the 3R Principles into Ecological Citizenship Education," *Journal of Education and Learning Khatulistiwa* 11, no. 6 (2022).

consumers, to change behaviors that have been exploitative in nature to become more sustainable.¹² This approach reinforces the concept of sustainable development that not only emphasizes economic growth but also ensures the sustainability of ecosystems for future generations.¹³

Thus, the Ecogreen program can be seen as a success in internalizing the values of ecological justice into the social life of urban communities. This program does not only work at the technical level of waste reduction, but more than that, it is a practical application of a holistic environmental ethics approach. It represents how systemic change can begin at the local level by combining the principles of justice, sustainability, and ecological awareness. By linking the theory of ecological justice and the Ecogreen field practice, it appears that the success of waste management is not only measured by the volume of waste reduced but also by the extent to which ecological values can become a new culture in urban life.

Pollution and Plastic Waste Management Issues in Banjarmasin City

Based on data from the Banjarmasin City Environment Agency, the amount of waste generated has increased every year. In 2020, waste generation was recorded at 168,032.90 tons, then increased to 169,222.74 tons in 2021. This continued in 2022 with a total of 170,543.52 tons, and increased again in 2023 to 171,998.09 tons.¹⁴ Thus, over a period of four years (2020-2023), there was a total increase of 3,965.19 tons, or an average increase of around 1.32% per year. This increase indicates consistent growth in waste volume, which has the potential to burden environmental management if it is not balanced with strategic and sustainable waste reduction and management measures.

The main sources of waste in Banjarmasin City are households, traditional markets, and the service and commercial sectors.¹⁵ In terms of composition, organic waste such as food scraps is the most dominant. This reflects the

¹² Kompasiana, "The Plastic Crisis and Moral Responsibility: An Environmental Ethics Perspective" (2024),

<https://www.kompasiana.com/nurmilazizah12/6833bac334777c469a7d54e8>.

¹³ Indonews, "Ecological Justice and Sustainable Development" (2024),

<https://indonews.id/artikel/316388>

¹⁴ "One Data | City of Banjarmasin," accessed August 2, 2025,

<https://satudata.banjarmasinkota.go.id/data-statistik/12d56b12-54da-4805-ae4d-e457f98b8d36>.

¹⁵ "SIPSN - National Waste Management Information System," accessed August 2, 2025, <https://sipsn.kemenvh.go.id/sipsn/public/data/sumber>.

consumption patterns of the community, which generate large amounts of easily decomposable waste. Additionally, inorganic waste, particularly plastic, including multilayer packaging that is difficult to decompose and not easily recyclable, is also significant. This type of waste poses a challenge for waste management, given its durability in the environment and the suboptimal recycling system.¹⁶ Therefore, a comprehensive approach and adaptive policies are needed to reduce waste, particularly through public education, source separation, and improved processing infrastructure.

As the amount of waste in Banjarmasin City increases each year, the City Government has implemented various policy strategies to address the increasingly complex challenges of waste management. One crucial moment was the closure of the Basirih Final Disposal Site (TPA) in February 2025 because its capacity had exceeded its maximum limit.¹⁷ This closure forced the local government to take emergency measures to change the waste management system.

In response to this situation, several policy priorities were implemented, including the use of the Banjarbakula regional landfill as a new disposal site, an increase in the daily waste transportation quota from 200 tons to 300 tons, and additional operating hours for the transportation fleet. These policies are intended to maintain the smooth distribution and handling of waste at certain times, while avoiding the accumulation of waste that can cause environmental and public health problems. More than just technical policies, the Banjarmasin City Government, through the Environment Agency, is also working to develop a sustainable waste management system. This effort is realized through the intensification of community education programs, particularly in terms of waste sorting at the source at the household level. In addition, the role of waste banks is being strengthened to support community-based circular economies, and Reduce-Reuse-Recycle Waste Processing Sites (TPS 3R) continue to be promoted as an integrated approach that supports the principles of waste management based on reduction, reuse, and recycling.¹⁸

¹⁶ "SIPSN - National Waste Management Information System," accessed August 2, 2025, <https://sipsn.kemenvh.go.id/sipsn/public/data/komposisi>.

¹⁷ "Impact of the Closure of the Basirih Landfill, Ministry of Environment Ready to Assist Banjarmasin in Waste Management," *Banjarmasin City Government Website*, February 28, 2025, <https://www.banjarmasinkota.go.id/2025/02/imbasi-dari-penutupan-tpa-basirih.html>.

¹⁸ "City Government Optimistic About Improving Waste Management in Banjarmasin," *Banjarmasin City Government Website*, April 5, 2025,

Although the Banjarmasin City Government has established various policies for waste management, their implementation in the field still faces many major challenges, both technical and social. One of the most obvious consequences of an ineffective management system is the accumulation of waste in residential areas, especially in densely populated areas with limited access to regular waste collection services. This accumulation of waste not only reduces the beauty of the environment, but also causes various diseases and attracts flies and rats that can affect public health.

Limited facilities and a lack of public awareness contribute to illegal waste disposal, especially into rivers and vacant lots. This worsens water pollution and disrupts the ecological function of open green areas. Often, household waste is burned in the open, which is considered a quick solution, but actually releases toxic gases such as dioxins and furans that are harmful to health and add to air pollution in the surrounding area. Therefore, the challenge of waste management in Banjarmasin cannot be overcome with an infrastructure-only approach. Strict legal action and close monitoring of environmental violations are needed, along with improvements to waste management facilities, such as the provision of adequate temporary storage sites and expansion of the waste collection fleet. In addition, active participation from the community in sorting and reducing waste at the source is a major factor in creating an inclusive and sustainable management system. Through a collaborative approach involving the government, citizens, and the private sector, it is hoped that the adverse effects of ineffective waste management can be significantly reduced.

Implementation of Eco-Tickets as a Waste Management Effort

EcoGreen is a sustainable development concept that integrates ecological and economic aspects to create an environmentally friendly and economically profitable system.¹⁹ This approach focuses on increasing the efficiency of natural resource use while maintaining ecosystem balance. In addition, economic value is created through environmental conservation practices that involve active community participation in green initiatives. This concept also supports the circular economy by turning waste into valuable resources, thereby reducing

<https://www.banjarmasinkota.go.id/2025/04/pemko-optimis-benahi-pengelolaan-sampah.html>.

¹⁹ *Overview of EcoGreen Campus – Ecogreen Campus UIN Raden Fatah Palembang*, n.d., accessed August 7, 2025, <https://ecogreen.radenfatah.ac.id/index.php/sekilas-tentang-ecogreen-campus/>

environmental impact while opening up new economic opportunities. *EcoGreen* focuses not only on the application of environmentally friendly technologies, but also on changing community behavior patterns towards a sustainable lifestyle through various incentives and innovative programs.

The Eco-Ticket Trans Banjarmasin program operationalizes the *EcoGreen* concept by translating plastic waste into a mobility incentive that is easy to understand and participate in. Through a simple exchange mechanism, residents can redeem 3 bottles of 1500 ml, 5 bottles of 600 ml, 10 bottles of 300 ml, or 15 cups of 220 ml for one free Trans Banjarmasin ticket.²⁰ Since its launch in April 2025, program records report that more than 60,000 bottles/cups (approximately 200 kg of plastic) were collected within the first four months, indicating substantial early participation. Implementation is supported by a Memorandum of Understanding (MoU) between the Transportation Department and the City's Central Waste Bank: collected plastics are weighed, sorted, and sold through the Waste Bank, and proceeds contribute to Local Own-Source Revenue (PAD). This institutional linkage makes the circular economy claim empirically traceable, because plastic is not only "collected" but moved into a documented value chain that can finance continued operations.²¹

The program cycle begins with the waste collection phase, where the community actively collects used plastic bottles from homes, offices, or surrounding areas. This phase involves the community in recognizing the types of plastic that are accepted, hygienic and safe storage methods, and the importance of sorting plastic waste from other types of waste. The success of this phase is highly dependent on the level of participation and awareness of the community, so continuous educational outreach through various media and community approaches is needed to ensure that the community understands and is active in collecting plastic waste.²²

²⁰ "Eco-Ticket' Program: An Innovation to Reduce Waste," *Mata Banua Online*, June 1, 2025, <https://matabanua.co.id/2025/06/01/program-eco-ticket-inovasi-kurangi-sampah/>.

²¹ "Eco Ticket Trans Banjarmasin' Program Collects 60,000 Plastic Bottles in Two Months," *Hallobanua.com*, May 30, 2025, <https://www.hallobanua.com/2025/05/program-eco-ticket-trans-banjarmasin.html>

²² Ahyar Wahyudi, "Banjarmasin Transforming: From Waste to a Prosperous City (5) - ThePrismapost.com," accessed August 7, 2025, <https://www.theprismapost.com/prismaberita/169984712/banjarmasin-berbenah-dari-sampah-menuju-kota-sejahtera-5>.

The next stage is exchange, where residents bring collected plastic bottles/cups to designated points such as Trans Banjarmasin bus stops or bus terminals. The exchange system applies clear conversion rules—for example, 3 bottles of 1500 ml, 5 bottles of 600 ml, 10 bottles of 300 ml, or 15 cups of 220 ml can be exchanged for one free bus ticket. Because this stage is the primary point of contact between citizens and implementers, administrative quality directly affects both program effectiveness and public trust. The exchange process therefore requires efficient and transparent procedures (standardized verification, consistent recording of counts/weights, and accessible complaint channels) and trained officers who can provide brief on-site education to prevent misunderstandings about sorting, eligibility, and the program's ecological objectives.²³

After obtaining a free ticket, the public can use Trans Banjarmasin services at no cost. This phase offers direct benefits in the form of affordable transportation access, while also boosting the number of public transportation users. Positive experiences in using public transportation can encourage the public to use Trans Banjarmasin more often outside of the *Eco Ticket* program, creating new habits in choosing a mode of transportation. In addition, this phase is also an important moment to continue educating passengers about the benefits of public transportation and the importance of maintaining environmental cleanliness.

The plastic bottles collected from ticket exchanges are then further managed through the City's Main Waste Bank based on a mutually agreed MoU. This stage includes the process of weighing, sorting, and selling plastic waste to recycling industries or plastic processors. This system ensures that plastic waste is properly recycled and does not end up in landfills, while also creating a sustainable economic value chain. Transparency in management and reporting of sales results is key to maintaining public trust and program accountability.

The proceeds from the sale of plastic waste through the Central Waste Bank become Local Own-Source Revenue (PAD), which can be used for regional development programs. This shows that the *Eco Ticket* program not only brings environmental and social benefits, but also makes a real contribution to regional finances. The PAD generated can be an indicator of the program's success as well

²³ Ahmad Riyadi, "Yamin-Ananda Lower Parking Fees and Expand Innovative Eco-Ticket Program," *jejakrekam.com*, May 30, 2025, <https://jejakrekam.com/2025/05/30/yamin-ananda-turunkan-tarif-parkir-dan-masifkan-program-inovatif-eco-ticket/>.

as a source of funding for the development of other environmental programs.²⁴ Open and responsible management of PAD is important to ensure that the economic benefits of the program can be optimally felt by the community through development programs financed by PAD.

The final stage is the allocation of a portion of PAD to support the operational sustainability of the Eco Ticket program, including costs for socialization, system maintenance, staff training, and program development to wider areas. This stage ensures that the program is not only short-term, but can grow and expand its reach. Continuous evaluation of the program's effectiveness, feedback from the community, and adaptation to technological developments and community needs are important in maintaining the program's relevance and sustainability. Reinvestment from PAD into this program creates a self-sustaining cycle, in which the program can grow without being entirely dependent on the local government budget.

This program has two objectives: to reduce plastic waste through recycling and to increase the use of public transportation. In collaboration with the City's Central Waste Bank, collected plastic bottles are sold and the proceeds contribute to the Regional Original Revenue (PAD), forming a sustainable green economic cycle.²⁵ In addition to reducing waste, this initiative also increases public awareness and participation in environmental conservation, while encouraging innovation and creativity in managing plastic waste sustainably.²⁶

Banjarmasin residents' participation in the *Eco Ticket* program has been enthusiastic. As of July 25, 2025, more than 60,523 plastic bottles have been exchanged, equivalent to nearly 200 kilograms of plastic waste. This achievement is remarkable considering the program has been operating for less than 4 months. On average, around 1,000 bottles are exchanged for eco tickets every day, indicating that thousands of people are participating in this program. The program

²⁴ Winda kalselpo, "Eco Ticket Trans Banjarmasin: Exchange Trash for Tickets, an Eco-Friendly Transportation Solution," kalselpo, June 1, 2025, <https://kalselpo.com/2025/06/01/eco-ticket-trans-banjarmasin-tukar-sampah-jadi-tiket-solusi-transportasi-ramah-lingkungan/>.

²⁵ admin, "Banjarmasin Transportation Department Launches 'Eco Ticket' Program for TransBanjarmasin, Ride for Free by Exchanging Plastic Waste," *Publika Indonesia*, April 23, 2025, <https://publikaindonesia.com/dishub-banjarmasin-luncurkan-program-eco-tiket-transbanjarmasin-naik-gratis-cukup-tukar-sampah-plastik/>.

²⁶ "Citizen participation," accessed August 11, 2025, <https://search.yahoo.com/search?fr=mcafee&type=E211US885G0&p=partisipasi+warga+kota+banjarmasin+terhadap+eco+ticket+trans+banjarmasin&guccounter=1>.

has even received an award from the local government. Slamet Begjo, Head of the Banjarmasin Transportation Agency, emphasized that public interest is very high and the program is running smoothly. The Director of the Banjarmasin City Waste Bank, Faturahman, praised this innovation for successfully encouraging the public to sort waste while receiving the direct benefit of free transportation.

Financially, with the price of plastic waste in Kalimantan ranging from Rp4,000 to Rp4,500 per kilogram, the Central Waste Bank has the potential to earn direct income of Rp800,000 to Rp900,000 from 200 kilograms of plastic waste collected. However, the economic value is higher when the multiplier effect is taken into account. This program creates a circular economy ecosystem that encompasses various stages of processing, from sorting and cleaning to further processing into handicrafts or recycled materials with higher selling value. The Central Waste Bank also benefits from increased operational capacity and experience in managing large-scale programs through cross-sector collaboration, which can be used to develop similar programs or expand services.

High participation in the early months suggests that Eco-Ticket could generate longer-term environmental and economic benefits for Banjarmasin, but such claims should be grounded in standardized monitoring of both counts and weights over time. Using the program's early record of 60,523 bottles/cups collected within its initial months (≈ 200 kg as reported), a simple linear projection suggests diversion on the order of several hundred kilograms of plastic per year if participation is maintained, with higher diversion possible if socialization expands and exchange capacity scales.²⁷ For the Banjarmasin City Central Waste Bank, the program also stabilizes the supply of relatively clean, pre-sorted plastics—an operational advantage for downstream recycling and for planning staffing and logistics—thereby improving revenue predictability and strengthening the circular-economy component of the initiative. Strengthening monitoring would allow the city to move from short-term output reporting to credible, policy-relevant claims about sustained behavioral change and environmental impact.

In this case, the Trans Banjarmasin *Eco Ticket* program has successfully built a circular economy model that connects various parties in a mutually beneficial and sustainable ecosystem. This model shows how waste such as plastic bottles can be turned into productive assets through smart incentives. Residents receive free transportation, the Central Waste Bank obtains raw materials and income,

²⁷ Muhammad Ilham Roikhan, "Implementation of Ecobricks: Efforts to Manage Plastic Waste as a Step to Reduce Environmental Pollution," *Solidaritas: Jurnal Pengabdian* 3, no. 1 (2023): 112–22, <https://doi.org/10.24090/sjp.v3i1.9735>.

Trans Banjarmasin operators gain an increase in passengers and support the mission of sustainable transportation, while the government reduces the burden of waste management and landfills and improves the quality of public transportation services.

The program can continue without dependence on long-term government subsidies. The Central Waste Bank funds the program's operations from the sale of collected plastic waste, while transportation operators benefit from increased ridership. This circular economy model has high potential for replication in other cities in Indonesia facing similar challenges in waste management and sustainable transportation development.

Effectiveness of the Ecogreen Program Based on the Principle of Ecological Justice

The term effectiveness is familiar, especially in the study of public administration. The word "effective" comes from the English word *effective*, which means successful or capable of achieving good results. In the Popular Scientific Dictionary, effectiveness is defined as accuracy in use, the benefits produced, or the ability to support the achievement of objectives.²⁸

According to Subagyo, effectiveness is the conformity between results (*output*) and predetermined objectives. In line with this, Hani Handoko explains that effectiveness is the relationship between *output* and objectives, whereby the greater the contribution of results to the achievement of objectives, the more effective an organization, program, or activity is.²⁹

Agung Kurniawan, in his book *Transformasi Pelayanan Publik (Public Service Transformation)*, explains that effectiveness is the ability of an organization or similar entity to carry out tasks, functions, programs, or missions without pressure or tension during implementation.³⁰

²⁸ Iga Rosalina, "The Effectiveness of the National Program for Empowering Independent Urban Communities on Revolving Loan Groups in Dsa Mantren, Karangrejo District, Magetan Regency," *Publika* 2, no. 2 (2014), <https://doi.org/10.26740/publika.v2n2.p%2525p>.

²⁹ Ahmad Jibril, "The Effectiveness of the Perpuseru Program at the Pamekasan Regency Public Library," *Libri-Net* 6, no. 2 (2017).

³⁰ Iga Rosalina, "The Effectiveness of the National Program for Empowering Independent Urban Communities on Revolving Loan Groups in Dsa Mantren, Karangrejo District, Magetan Regency," *Publika* 2, no. 2 (2014), <https://doi.org/10.26740/publika.v2n2.p%2525p>.

Based on these various opinions, it can be concluded that effectiveness reflects the extent to which an activity, program, or organization is able to achieve its objectives by utilizing resources optimally, producing tangible benefits, and maintaining the smooth running of the implementation process.

Program Effectiveness Indicators. To assess Eco-Ticket as a public policy intervention, this study adopts Ni Wayan Budiani's four program-effectiveness indicators—target accuracy, socialization, goal achievement, and monitoring—because they capture the core implementation challenges of incentive-based environmental programs: reaching intended beneficiaries, communicating rules and purpose, delivering observable outcomes, and sustaining performance through oversight and feedback. These indicators provide the analytical structure for the evaluation, while ecological justice functions as a second-order interpretive lens to assess whether program performance also advances fairness, participation, and ecological responsibility. In this way, the paper links “how well the program works” (effectiveness) with “for whom the program works and with what ethical consequences” (ecological justice).

The author chooses the effectiveness indicators proposed by Budiani, who states that the effectiveness of a program can be measured through the following variables:³¹

- 1) Program accuracy

This refers to the extent to which program participants are in line with the predetermined objectives.

- 2) Program socialization

This refers to the ability of program organizers to disseminate information about the program so that information about its implementation can be conveyed to the general public and the target participants in particular.

- 3) Program objectives

This refers to the extent to which the results of program implementation are in line with the predetermined program objectives.

- 4) Program monitoring

This refers to activities carried out after the program has been implemented as a form of attention to program participants.

Analysis of the *EcoTicket* Trans Banjarmasin Program from the Perspective of Program Effectiveness Theory and the Principle of Ecological Justice

³¹ Ni Wayan Budiani, “The Effectiveness of INPUT,” *Journal of Economics and Social Affairs* 2, no. 1 (2007).

Analysis of the Effectiveness of the EcoTicket Trans Banjarmasin Program

Building on Budiani's four indicators defined above, this section evaluates Eco-Ticket sequentially—starting with target accuracy, then socialization, goal achievement, and finally monitoring—before synthesizing these managerial findings with ecological justice considerations. This organization is intended to make the logic of the evaluation transparent: we first establish what the program has achieved and how it has been implemented, and then assess the justice implications of those achievements (pollution prevention, distributive fairness of benefits, and accountability). Through this structure, both theoretical components operate as a single analytical framework guiding the entire discussion.³²

1. Program accuracy

This refers to the extent to which program participants are in line with the predetermined targets.

2. Program socialization

This refers to the ability of program organizers to disseminate information about the program so that information about its implementation can be conveyed to the general public and the target participants in particular.

3. Program objectives

This refers to the extent to which the results of program implementation are in line with the predetermined program objectives.

4. Program monitoring

This refers to activities carried out after the program has been implemented as a form of attention to program participants.

Based on the data collected and analyzed by the author using Budiani's theory, the following description was obtained:

5. Program Target Accuracy

The EcoTicket program was successful in reaching its target because most of the participants who used it were regular public transportation users in Banjarmasin, particularly students and office workers. This shows that the program was able to reach its main target group, namely people who regularly use Trans Banjarmasin and have the potential to support the environmentally friendly movement. This success is also reinforced by a clear registration and verification mechanism, ensuring that beneficiaries meet the specified criteria.

³² Ni Wayan Budiani, "The Effectiveness of INPUT," *Journal of Economics and Social Affairs* 2, no. 1 (2007).

Although it is on target, this success still needs to be maintained by conducting periodic evaluations of beneficiary data. The verification system can be supplemented with an integrated digital database, making it easier to screen participants and prevent those who do not meet the criteria from receiving the program's benefits.

6. Program Socialization

The socialization of the EcoTicket program is still considered suboptimal. Information about this program has not fully reached all levels of society, especially those who rarely access social media or are not on the Trans Banjarmasin operational route. Some people only know about the program through word of mouth or from other passengers, which has the potential to cause misconceptions regarding its procedures and benefits. The lack of physical promotional media such as billboards or brochures at bus stops also limits the dissemination of information.

To improve socialization, the organizers can utilize a combination of online and offline media. Social media can be used to disseminate interactive information, while physical media such as banners, posters, and announcements in strategic public areas can reach people who are less active in the digital world. In addition, holding direct campaigns at bus stops, schools, and government offices will help expand the reach of information.

7. Program objectives

The objectives of the EcoTicket program have largely been achieved, as evidenced by the increased public interest in using public transportation, while encouraging a reduction in the use of private vehicles. This program has also succeeded in promoting awareness of the importance of protecting the environment through environmentally friendly ticket management. Data shows an increase in the number of Trans Banjarmasin passengers during the program implementation period, indicating that the goal of encouraging public participation is going well.

The success of these objectives needs to be optimized by adding more measurable indicators, such as the percentage reduction in private vehicle use or the volume of emissions that has been successfully reduced. In addition, organizers can conduct regular surveys of users to identify the factors that make them interested in participating in the program, so that effective strategies can be maintained.

8. Program monitoring

Monitoring of the EcoTicket program is still not optimal. After the program was launched, follow-up with participants was relatively minimal, making it difficult to measure its long-term impact. The absence of a routine reporting system and feedback mechanism from participants limits the evaluation of the program's performance. As a result, the potential for improvement based on participant experience is not fully utilized.

Monitoring can be improved by creating a structured monitoring and evaluation system, for example through online feedback forms or short interviews with users at bus stops. The monitoring data can then be analyzed to identify the obstacles faced by participants, as well as to serve as a basis for program improvements in the future. The implementation of a special application connected to the Trans Banjarmasin service could also be a long-term solution to facilitate the collection of monitoring data.

Taken together, the evidence indicates that the Trans Banjarmasin Eco-Ticket program is effective in the managerial sense while also displaying key elements of ecological justice. Under Budiani's effectiveness criteria, Eco-Ticket shows strong target accuracy—participation is dominated by public-transport users, especially students and office workers—and meaningful goal achievement, demonstrated by the reported collection of 60,523 bottles/cups (≈ 200 kg of plastic) within the initial months of implementation, alongside implementers' accounts of increased ridership and environmental awareness. At the same time, two implementation dimensions remain weak: socialization has not yet reached residents outside the bus corridor or those with limited access to digital information, and monitoring remains limited, making it difficult to track behavioral persistence and environmental impact over time. Interpreted through ecological justice, the program's pollution-prevention function aligns with Lovelock's systems perspective (reducing plastic leakage into rivers as ecological "care"), its community-facing incentive mechanism reflects Shiva's emphasis on participatory environmental ethics, and its promise of fairer distribution of environmental and mobility benefits resonates with Dobson's distributive justice concerns—particularly for communities that bear disproportionate burdens from waste externalities. These findings suggest Eco-Ticket is a credible model of locally grounded, justice-sensitive circular economy policy, provided that outreach and monitoring are strengthened to ensure equitable access and credible evaluation.

CONCLUSION

The Trans Banjarmasin Eco-Ticket program demonstrates how a local government can translate circular economy ideas into a practical policy instrument that couples plastic-waste diversion with affordable public mobility. Using Budiani's effectiveness indicators, Eco-Ticket performs strongly on target accuracy and goal achievement: within its initial months it reportedly collected 60,523 bottles/cups (≈ 200 kg of plastic) and mobilized participation primarily among students and office workers—groups with routine exposure to public transport and high potential for sustained behavioral change. However, the evaluation also identifies key implementation gaps that must be addressed for long-term sustainability and equity: socialization remains uneven across neighborhoods and social groups, and monitoring mechanisms are not yet robust enough to measure longer-term outcomes (behavioral persistence, reductions in littering, and consistent measurement of environmental impact). From an ecological justice perspective, Eco-Ticket operationalizes pollution prevention (reducing plastic leakage into waterways), builds ecological responsibility through citizen participation (Shiva), reinforces an ethic of systemic ecological care (Lovelock), and creates a pathway for fairer distribution of environmental and mobility benefits (Dobson). In short, Eco-Ticket is “effective” not only because it meets early output targets, but because it begins to align administrative performance with the ethical requirements of environmentally just urban governance.

To strengthen sustainability and equity, the city government should (1) expand socialization through a mixed outreach strategy—route-based posters and announcements at stops, partnerships with schools and workplaces, and community meetings in riverbank and low-access areas—so that eligibility rules and the program's ecological purpose are widely understood; (2) institutionalize monitoring by standardizing reporting (counts and weights), introducing routine user feedback (short surveys at exchange points or a simple digital form), and publishing periodic impact summaries to build accountability; and (3) widen partnerships to enhance long-term financing and scale, including cooperation with beverage producers through extended producer responsibility (EPR) schemes and with neighborhood-level waste banks to decentralize collection. These steps directly address Budiani's weaker indicators (socialization and monitoring) while deepening ecological justice outcomes by ensuring the program's benefits and participation opportunities are not captured only by already-connected groups.

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