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Green Economy, Technology, People and Industrial Tourism (Get Points)

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Abstract

Rapid technological and economic advancement has resulted in the proliferation of environmentally detrimental products and consumption patterns, significantly impacting the environment. Plastic pollution has emerged as a critical environmental concern, with Indonesia ranking fifth among the world's largest plastic waste producers. Annually, Indonesia generates approximately 7.8 million tons of plastic waste, of which 4.9 million tons are inadequately managed. For an extended period, Indonesia relied on a linear economic model characterized by a "take-use-dispose" approach. However, a transition towards a circular economic model is currently underway. In response to the significant environmental challenge posed by plastic waste pollution in Indonesia, the government has strategically introduced the Green Economy initiative. This innovative framework, an integral component of Indonesia's 2025-2045 Long-Term Development Plan (RPJPN), is founded upon a robust and balanced approach that prioritizes three core pillars: economic prosperity, social equity, and environmental sustainability. In response to these challenges, the researchers devised the "Get Points" program, an acronym for Green Economy, Technology, People, and Industrial Tourism. This program was implemented at Ekowisata Cimenteng, located in Cipageran, North Cimahi District. The primary objective of this initiative is to address plastic waste management concerns while simultaneously fostering economic growth within local communities and among stakeholders. The program was executed through an outreach methodology, accompanied by pre- and post-tests for evaluation purposes. Comparative analysis of the pre- and post-test results revealed a notable increase in participant comprehension of plastic waste management issues. This enhancement was achieved through the integration of financial management seminars, digital marketing workshops, and 3D printing workshops, thereby facilitating economic growth for Ekowisata Cimenteng, local communities and stakeholders.

Keywords: Plastic pollution, environmental concern, circular economic, green economy, plastic waste management

1. Introduction

Rapid technological and economic development has led to many environmentally unfriendly products and consumption behaviors that have a negative impact on the environment. The large volume of plastic waste in the environment is one of the causes. Plastic pollution has become a concern for environmentalists because it is one of the crucial problems being faced by society (Kumar, 2021).

Indonesia ranks fifth among the world's top plastic waste producing countries. Indonesia produces around 7.8 million tons of plastic waste each year, with 4.9 million tons being improperly handled (Maskun, 2023). This includes waste that is left uncollected, discarded in open dumps, or escaping from poorly managed landfills. The mismanagement of plastic waste significantly impacts the country's rivers and oceans, with over 600,000 tons of plastic entering these waterways, predominantly from rural areas lacking proper waste collection systems. In response, the Indonesian government has initiated a program to employ thousands of traditional fishers to gather plastic debris from the sea, aiming to reduce marine plastic waste by 70% by 2025 (Green Match, 2024).

Based on the issue of environmental pollution caused by plastic waste in Indonesia, the government has introduced an innovative initiative called the Green Economy. The Green Economy is part of Indonesia's Long-Term Development Plan (RPJPN) for the 2025–2045 period. This strategy is built upon three main pillars: economic, social, and environmental sustainability (Green Growth Bappenas, 2024).

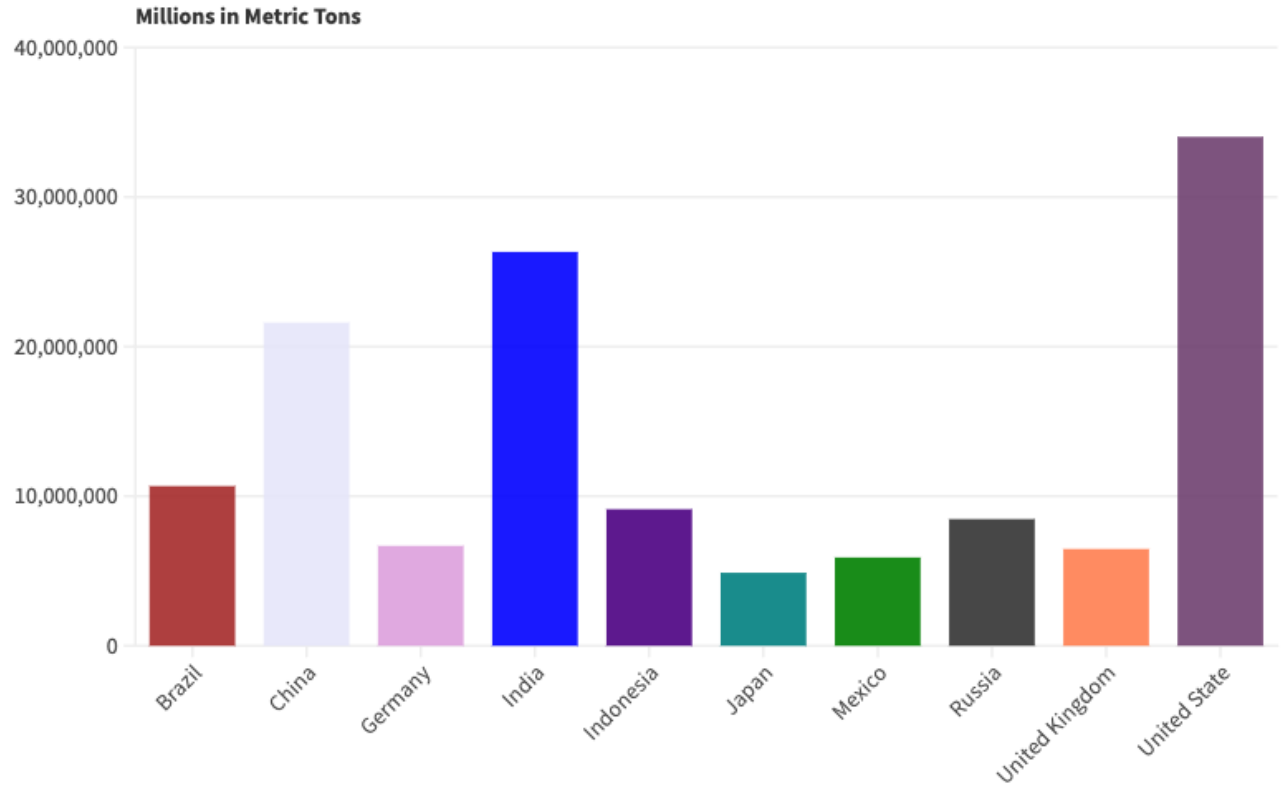

Figure 1. Top 10 Countries Producing Most Plastic Waste
Source: Green Match, 2024

For years, Indonesia has relied on a linear economic model with a "take-use-dispose" approach. However, this model is now transitioning to a circular economy approach. The circular economy serves as a key instrument to support the transformation towards a Green Economy by integrating low-carbon development strategies and climate resilience as its foundation. This system is characterized by a closed-loop approach, aiming to optimize the use and value of raw materials, components, and products while minimizing waste ending up in landfills (The Future is Circular, 2023: 12).

West Java Province ranks third in waste generation, producing 4.89 million tons, following Central Java with 5.76 million tons and East Java with 4.95 million tons (Kanta Media, 2023). Cimahi, a city in West Java, generates approximately 226 tons of waste daily. Following a fire at the Sarimukti Landfill in August 2023, the city has been able to dispose of only about 120 tons of waste per day at the landfill, leaving 106 tons to be managed independently. In response, the Cimahi City Government has upgraded three Temporary Waste Disposal Sites (TPS) into 3R TPS facilities (Reduce, Reuse, Recycle) located in Pasar Atas, Leuwigoong, and Cibeber (Cimahi Kota, 2023).

Based on these considerations, the researchers designed the Get Points program (Green Economy, Technology, People, and Industrial Tourism). This program is implemented at Ekowisata Cimenteng, located in Cipageran Village, North Cimahi District. The Cimenteng area serves as an educational tourism destination featuring nature-based activities such as farming and animal husbandry. The management of Cimenteng Ecotourism operates under Dinas Kebudayaan, Pariwisata, Pemuda dan Olahraga Cimahi. Ekowisata Cimenteng holds significant potential in supporting environmental conservation, enhancing community participation in ecotourism development, and ensuring the sustainable management of tourism attractions.

The objectives of the Get Points Programs (Green Economy, Technology, People, and Industrial Tourism) initiative include:

1. Preserving the environment while raising public awareness of the importance of maintaining cleanliness.
2. Reducing the amount of waste in Cimahi City, particularly plastic water bottle waste.
3. Recycling plastic water bottle waste into high-value products that can drive Cimahi's economic growth.
4. Educating Cimahi residents, especially those living near and visiting Eco Wisata Cimenteng, about waste recycling using 3D printing technology.
5. Establishing Get Points as a pilot project that can be implemented in other areas around Cimahi or even across Indonesia.

This initiative aims to address plastic waste management issues while fostering economic growth for local communities and stakeholders.

2. Materials and Methods

2.1. Materials

The materials required to conduct a 3D printing workshop include:

1. Two Units 3D Printer: At least one unit, depending on the number of participants.
2. Computer/Laptop: equipped with 3D design software such as Tinker CAD, Blender, or Fusion 360.
3. 3D Printing Filament: Polylactic acid (PLA) or Acrylonitrile Butadiene Styrene (ABS)
4. Nozzles and Spare Parts: Backup components for replacement in case of damage.
5. Handouts for participants
6. Sets of pre and post questions about 3D printing workshop

Meanwhile materials required to conduct a The Financial Management Techniques and Digital Marketing Seminar include:

1. The Financial Management and Digital Marketing Powerpoint Slide
2. Handouts for participants
3. Sets of pre and post questions about The Financial Management and Digital Marketing (through google form)

2.2. Methods

This community service employs two primary methods: the experimental method and the participatory method. The experimental method involves testing the effectiveness of 3D printing technology in recycling plastic waste into economically valuable products. This process includes evaluating various variables, such as the type of plastic, product design, and process efficiency. Meanwhile, the participatory method actively engages the community and partners at every stage of the program, from planning to evaluation. This approach aims to ensure that the implemented solutions align with local needs and are well-accepted. In the training phase, participants were thoroughly taught the 3D printing, financial management technique and digital marketing through a combination of lectures, interactive Q&A sessions, demonstrations, and practical exercises. To evaluate their understanding, pre-tests and post-tests were conducted before and after the training.

The Financial Management Techniques and Digital Marketing Seminar, attended by 30 participants (including SME practitioners from Cimenteng and members of Karang Taruna), was held at Cimahi Government Hall B. Meanwhile, the 3D Printing Training was conducted in the Meeting Room of Dinas Kebudayaan, Pariwisata, Pemuda dan Olahraga Cimahi attended by five members of the Karang Taruna Ekowosata Cimenteng Team, who will be responsible for operating the 3D pringting machines.

3. Results and Discussion

3.1 Activities and Implementations

3.1.1 Financial Management Seminar

A seminar on financial management was presented by Rendi Kusuma Natita, S.E., M.Ak., Ak. In this seminar, the importance of financial management was explained, emphasizing its role in ensuring efficient fund utilization, enhancing transparency and accountability, and supporting the sustainability of the Get Points program. Financial management is crucial as it serves as a foundation that enables individuals and organizations to achieve economic stability, maximize profit potential, and effectively manage risks.

Figure 2: Presentation of Financial Management by Rendi Kusuma Natita, S.E., M.Ak., Ak.

Common problems faced in financial management include inadequate standard operating procedures and financial reporting, as well as the risk of operational errors. Based on these issues, with the financial management seminar, the management of Ecowisata Cimenteng will be able to:

1) design and implement standard operating procedures for finance
2) develop adequate financial reporting
3) conduct regular financial recording
4) maintain facilities and infrastructure, especially production technology, on a regular basis
5) understand the importance of cash flow management to ensure healthy liquidity.

Figure 3: Question and Answer Session of Financial Management Seminar

Overall, financial management is key to achieving long-term financial security, efficiency, and sustainability of a business. Participants of the financial management seminar were equipped with the knowledge to better manage Eco Wisata Cimenteng's finances, minimize financial risks, and attain desired economic goals.

3.1.2 Digital Marketing Seminar

Seminar on Digital Marketing delivered by Eka Septiarini, S.P., M.M. In this seminar, the importance of Digital Marketing for the Development of Eco Wisata Cimenteng was discussed. The digital marketing materials presented include 1) digital marketing fundamentals, 2) digital marketing strategist, 3) content marketing for social media.

Figure 4: Presentation of Digital Marketing by Eka Septiarini, S.P., M.M

Digital marketing is a tool for businesses not only to reach a wider and more relevant audience but also make faster adjustments to achieve optimal results. This makes digital marketing is an important choice in today's competitive business environment. The management of Ekowisata Cimenteng is expected to:

1) Understand the fundamentals of digital marketing strategies, covering various concepts, tools, techniques, and strategies needed to design, implement, and optimize digital marketing campaigns.
2) Design comprehensive and measurable digital marketing strategies, ensuring that every element of the campaign supports business goals and generates optimal impact in the digital market.
3) Design, create, and distribute engaging and relevant content on social media platforms to attract audiences, build brands, and achieve business goals.

Figure 5: Question and Answer Session of Digital Marketing Seminar

Ekowisata Cimenteng is one of the newly inaugurated tourist destinations in Cimahi, on October 20, 2024. Therefore, marketing Eco Wisata Cimenteng through digital marketing is one of the effective strategies to increase awareness, attract visitors, and promote the unique value of the tourist destination. This digital marketing seminar is delivered as an effort so that Eco Wisata Cimenteng can market this tourist destination in a more efficient, measurable, and wider way to reach audiences compared to conventional marketing methods.

3.1.3 Workshop 3D Printing

The 3D Printing Workshop Conducted by Riono Aulia Abdullah, S.Ds., M.Ds and attended by five representatives from Ekowisata Cimenteng who will later operate the 3D Printer. The importance of this workshop for Ekowisata Cimenteng is to implement 3D printing technology to recycle plastic waste into economically valuable products, such as souvenirs of Ekowisata Cimenteng, thus having economic value and aligning with the Cimahi City vision and mission regarding the implementation of a circular economy. The 3D printing workshop is important to be held because this technology has great potential in various industries and can bring significant benefits in terms of creativity, efficiency, and innovation.

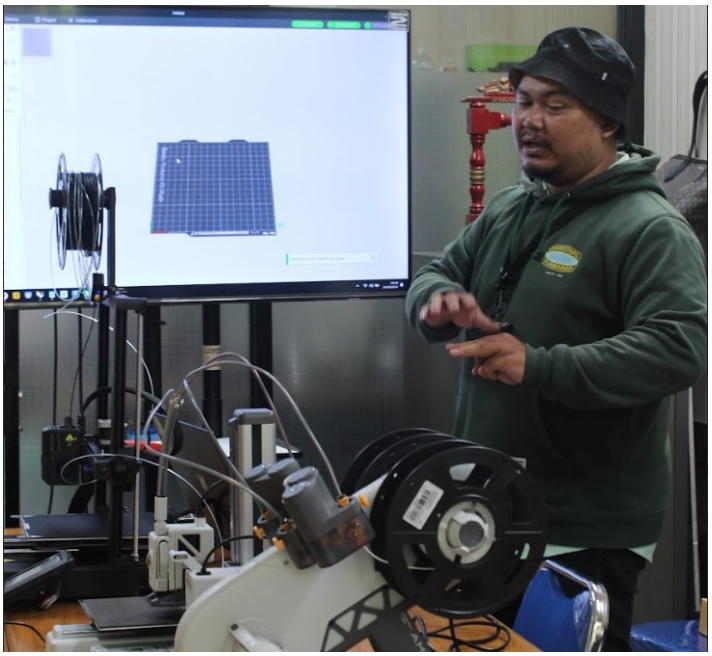

Figure 6: 3D Printing Workshop by Riono Aulia Abdullah, S.Ds., M.Ds

The materials presented in the 3D printing workshop cover basic to advanced concepts. The main materials presented in this 3D printing workshop include:

1) Introduction to 3D printing technology
2) Types of 3D Printers and Materials
3) Design and Software commonly used in 3D Printing
4) 3D Printer Operation and Maintenance

Figure 7: Material Delivery and Practice Using the Filament Machine

The 3D printing with plastic can be one of the sustainability solutions because it allows for the reuse and recycling of plastic materials and reduces production waste. 3D printing workshop participants gain technical knowledge and practical skills that can be directly applied, including:

1) Participants receive knowledge about the basic concepts of 3D printing
2) Understanding by participants on how to operate the printer
3) Skills in Using Design Software
4) Understanding of 3D Printing Materials and their Applications
5) Making Simple Products from Idea to Prototype

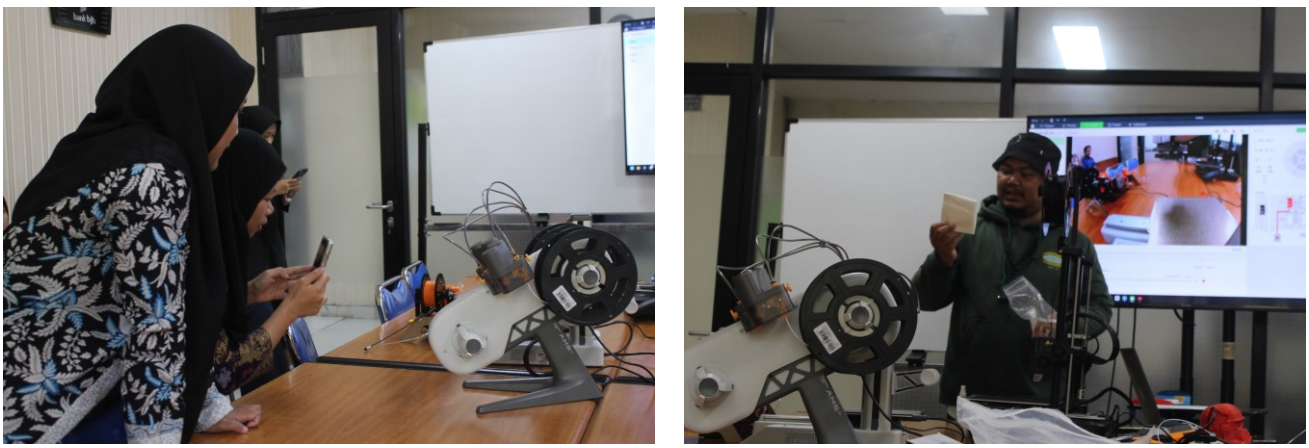

Figure 8: Participants observe the 3D printing process and the speaker delivers a presentation on 3D Printing Care

In this workshop, participants are taught how to use filaments from recycled materials and the importance of 3D printing in supporting sustainability. This provides insights for participants on how this technology can be used more responsibly towards the environment. The application of 3D printing technology for Ekowisata Cimenteng can be an opportunity, in addition to educating visitors, it also allows Ekowisata Cimenteng to produce economically valuable products from recycled or biodegradable materials as a distinctive feature of Ekowisata Cimenteng.

Figure 9: Examples of 3D Printing Products/Souvenirs

The technological and innovative product in this Get Points Community Service is the processing of plastic bottle waste into finished goods/souvenirs using a filament machine as a tool to convert plastic bottles into plastic thread so that it can be processed using a 3D printer. The use of this 3D printer will produce a product/souvenir that can be sold, thus increasing the economy of Ekowisata Cimenteng. The following are examples of products/souvenirs that can be sold.

3.2 Measurement The Participant Understanding

The data from the pre-test and post-test assessments reveal a significant improvement in understanding Financial Management Seminar among 30 participants. Table 1 shows an increase in the average understanding of Financial Management from 21.7% in the pre-test to 68.4%. In general, participants were able to understand the use of Financial Management for local SME activists and especially for Ekowisata Cimenteng Management. Digital marketing is a very valuable tool for ecotourism businesses. By utilizing various digital strategies, managers can increase visibility, attract more visitors, and build a strong brand.

Meanwhile, 31.6% participants do not fully comprehend the crucial role of finance in business sustainability. Additionally, participants lack a solid understanding of accounting principles, making it difficult for them to grasp fundamental concepts. Some participants have admitted to not being accustomed to recording every financial transaction, which makes it challenging to track income and expenses

Tabel 1. Pretest and Post Test Result of Financial Management

No.	Questions	Pre Test		Post Test	
		Understand	Do Not Understand	Understand	Do Not Understand
1.	Design and implement standard operating procedures for finance	23.5%	76.5%	70.4%	29.6%
2.	Develop adequate financial reporting	21.8%	78.2%	68.8%	31.2%
3.	Understand the importance of cash flow management to ensure healthy liquidity.	19.7%	80.3%	66.2%	33.8%
	Average	21.7%	78.3%	68.4%	31.6%

The data from the pre-test and post-test assessments reveal a significant improvement in understanding Digitial Marketing among 30 participants. Table 2 shows an increase in the average understanding of digital marketing from 38.3% in the pre-test to 77.6%. In general, participants were able to understand the use of digital marketing for local SME activists and especially for Ekowisata Cimenteng Management. Digital marketing is a very valuable tool for ecotourism businesses. By utilizing various digital strategies, managers can increase visibility, attract more visitors, and build a strong brand.

However, 22.4% participants had lack of understanding of digital marketing. For examples lack of practical experience. Participants did not have hands-on experience in running digital marketing campaigns can make it difficult to understand the concepts and practices and lack of exposure to technology. Participants did not keep up with the latest digital technology can make it difficult to understand the latest trends and tools in digital marketing.

Table 2. Pretest and Post Test Result of Digital Marketing

No.	Questions	Pre Test		Post Test	
		Understand	Do Not Understand	Understand	Do Not Understand
1.	Digital marketing fundamentals	38.3%	61.7%	72.8%	27.2%
2.	Digital marketing strategist	35.1%	64.9%	77.5%	22.5%
3.	Content marketing for Social media.	41.4%	58.6%	82.4%	17.6%
	Average	38.3%	61.7%	77.6%	22.4%

The data from the pre-test and post-test assessments reveal an improvement in understanding 3D printing among 5 participants. Table 3 shows an increase in the average understanding of 3D Printing from 21.4% in the pre-test to 77.5%. In general, participants were able to understand the use of 3D Printer. The workshop attendees were a group of young people from the Karang Taruna near Ekowisata Cimenteng. They're the ones who will be running this 3D printer. The participants found it easy to grasp the mechanics of the 3D printer, as they are accustomed to interacting with various technological devices. Additionally, they possess a strong curiosity and a desire to explore, and they are not afraid to try new things. However, about 22.5% of them said they didn't fully understand everything because they weren't used to the tools or design software.

Table 3. Pretest and Post Test Result of 3D Printing Workshop

No.	Questions	Pre Test		Post Test	
		Understand	Do Not Understand	Understand	Do Not Understand
1.	Introduction to 3D printing technology	32.7%	67.3%	83.2%	16.8%
2.	Types of 3D Printers and Materials	28.5%	71.5%	80.8%	19.2%
3.	Design and Software commonly used in 3D Printing	22.8%	77.2%	70.8%	29.2%
4.	3D Printer Operation and Maintenance	24.2%	75.8%	75.1%	24.9%
	Average	21.4%	78.6%	77.5%	22.5%

4. Conclussion

The Get Points community service program, encompassing seminars on financial management and digital marketing, as well as 3D printing workshops, has been successfully executed within the Cimenteng Ecotourism site in Cipageran, North Cimahi. At the program's inception, a primary challenge encountered was the participants' limited knowledge and experience in these areas.

A multi-phased approach was employed to comprehensively instruct participants in 3D printing, financial management techniques, and digital marketing. This approach encompassed a diverse range of instructional methods, including lectures, interactive question-and-answer sessions, practical demonstrations, and hands-on exercises. Pre- and post-training assessments were administered to evaluate participant comprehension. The average participant understanding was demonstrated to be 68.4% for financial management, 77.6% for digital marketing, and 77.5% for 3D printing.

The program received positive feedback, with participants commending its clarity and practical application. Demonstrating significant interest, participants expressed a strong desire to further refine their skills and explore potential entrepreneurial ventures. This initiative not only contributes to economic empowerment and environmental sustainability but also underscores the potential of 3D Printing to generate income within the Ekowisata Cimenteng site and surrounding Small and Medium Enterprises (SMEs).

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References

Cimahi Kota, 2023: https://cimahikota.go.id/artikel/detail/1368-optimalkan-pengelolaan-sampah

Green Growth Bappenas, 2024: https://greengrowth.bappenas.go.id/indonesia-luncurkan-indeks-ekonomi-hijau-untuk-mengukur-transformasi-pembangunan-berkelanjutan/

Green Match, 2024: https://www.greenmatch.co.uk/blog/10-countries-producing-most-plastic-waste

Kanta Media, 2023 https://www.kantamedia.com/nasional/ini-10-daerah-penghasil-sampah-terbanyak-di-indonesia/

Kumar, R., Verma, A., Shome, A., Sinha, R., Sinha, S., Jha, P. K., Kumar, R., Kumar, P., Shubham, Das, S., Sharma, P., & Vara Prasad, P. V. (2021). Impacts of Plastic Pollution on Ecosystem Services, Sustainable Development Goals, and Need to Focus on Circular Economy and Policy Interventions. *Sustainability*, *13*(17), 9963. https://doi.org/10.3390/su13179963.

Maskun, M., Kamaruddin, H., Pattitingi, F., Assidiq, H., Bachril, S. N., & AlMukarramah, N. H. (2023). Plastic waste management in Indonesia:Current legal approaches and future perspectives. Hasanuddin LawReview, 9(1), 106–125. http://dx.doi.org/10.20956/halrev.v9i1.3683

The Future is Circular, 2023: 12 https://www.undp.org/indonesia/publications/future-circular-undp-bappenas-english-version