Go Green program as an effort to enhance UI civitas awareness towards sustainable campus

A Bowolaksono1,*, N Kholis1, W K Wardani2, E Pradipta3, F Lestari4, M P Patria1 and R Priambodo5

1 Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Indonesia, Kampus FMIPA UI, Depok, 16424, Indonesia
2 Department of Environmental Health, Faculty of Public Health, Universitas Indonesia, Kampus FKM UI, Depok, 16424, Indonesia
3 Occupational Health Safety and Environment Universitas Indonesia, UPT K3L UI, Kampus UI, Depok, 16424, Indonesia
4 Department of Occupational Health and Safety, Faculty of Public Health, Universitas Indonesia, Kampus FKM UI, Depok, 16424, Indonesia
5 Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Negeri Jakarta, Rawamangun, Jakarta Timur, 13220, Indonesia

*alaksono@sci.ui.ac.id

Abstract. Civitas activities in the campus environment both from lectures and other supporting activities can produce waste. The civitas lifestyle often influences the amount of waste produced, such as inefficient use of paper and disposable packaging. Civitas awareness related to the impact of the lifestyle on the waste generated needs to be increased to support a sustainable campus. Some ways that can be done are by conducting socialization, implementing regulations, and conducting waste sorting programs. Based on the efforts that have been made, the amount of waste generated in 2019 has decreased compared to 2018. This is influenced by the sustainable campus policies implemented at Universitas Indonesia which began to be applied at the end of 2018.

1. Introduction

The waste management problem is one of the challenges faced by many universities, including Universitas Indonesia [1–3]. The high daily activities of the civitas in the campus environment, such as lecture activities, research, offices, and other supporting activities can produce a large amount of waste dumps [4,5]. Moreover, civitas lifestyle can also affect the amount of waste dumps [6,7]. The example of those lifestyles are the use of inefficient paper, the use of disposable drinking bottles, and the use of plastic bags to carry goods [8].

Waste dumps can have a negative impact on the community in the campus environment, including the impact on health and the environment itself [6,8]. Various kinds of health problems can arise and affect civitas, such as diarrhea, dysentery, dengue fever, malaria, and others [9]. The environmental problems are contamination of soil and surface water [10]. These things can disrupt the daily activities of the community in the campus environment.
Good management of waste management is needed to create a sustainable campus environment [11]. In addition, community awareness is also a crucial factor in order to manage and reduce waste dumps [3,7,12,13]. That is because the amount and type of waste produced are related to the lifestyle of the community in the campus environment [8,10]. Therefore, awareness about waste dumps that is caused by lifestyle needs to be increased to support the sustainable management of the campus environment [14,15].

2. **Theory**

According to Law Number 18 Year 2008 concerning Waste Management, waste is the residue of human daily activities and/or solid natural processes. Based on the source, waste can be categorized into three categories, namely household waste, household-like waste, and specific waste. Household waste is waste originating from daily activities in the household that do not include feces. Household-like waste is waste originating from commercial areas, industrial areas, special areas, social facilities, public facilities, and/or other facilities. While specific waste is waste which includes waste containing hazardous and toxic materials, waste containing hazardous and toxic waste, waste arising from disasters, debris demolition of buildings, waste that is technologically unprocessed, and/or waste that arises uncontrollably periodic [16].

Waste dumps from university academic activities can generally be categorized into three groups, namely organic waste, inorganic waste, and hazardous waste. Organic waste is a type of waste that is easily decomposed naturally, for example food scraps, dry leaves, and others. Inorganic waste is a type of waste that is not easily decomposed and requires a long time to be decomposed naturally, for example waste that contains plastic, glass, and others. While hazardous waste is a type of waste that contains hazardous and toxic materials, as well as hazardous and toxic waste materials, such as used oil, fuel, residual reagents, and others [17].

Waste management in the university environment is an important thing to do [2,3]. This is related to the high activity of the community which has the potential to produce large amounts of waste dumps [7,18]. Research conducted at the Universitas Indonesia in 2011 showed that each individual produced 0.024 kg of waste per day [4]. Data for 2018 shows the number of University of Indonesia students is 46,771 people and the number of academic staff is 2,267. From these data it can be concluded that the individual waste dumps can reach 300,000 kg per year. This amount does not include building waste, canteen waste, garden waste, and road waste. Therefore, an effort is needed to reduce the amount of waste dumps in the campus area every day [7].

There are four important things that need to be considered in the waste management process. These four things are:

- Ensure that all parties get access to the most basic waste management, so that there is no illegal landfill and burning.
- Perform integrated management of waste containing hazardous and toxic materials, through sorting and separating waste containing hazardous and toxic materials from other types of waste.
- Implement a waste reduction program, by implementing the use of items that can repeatedly use, such as food and beverage containers, cloth bags for carrying luggage, and others [18].
- Carrying out a recycling cycle on the waste, but it must be ensured that the waste product uses recyclable materials [19].

Through the application of good and integrated waste management, not only good public health and good environment that can be achieved, but there are also several other benefits. These advantages include being an indicator of good governance and the success of a city [19,20]. In addition, waste management is also needed to support a better future for the next generations [6].

3. **Methods**

Sampling of solid waste generation within the Universitas Indonesia campus is done by requesting data of the waste that is owned by the Directorate of Maintenance and Management of Facilities and Waste
Management Units in the 2018-2019 period. The data is compared to see the amount of solid waste dumps before and after the implementation of the Go Green program in the Universitas Indonesia campus environment.

The Go Green Program is one of the programs implemented as an effort to increase community awareness regarding good waste management and a campaign to reduce the amount of solid waste dumps from daily activities [7]. The efforts made to increase awareness include conducting socialization to faculties, conducting environmental campaigns, and making policies that support the reduction of waste in the Universitas Indonesia campus environment. The Go Green program starts at the end of 2018 and is evaluated at the end of 2019.

4. Results

Solid waste dumps data obtained from July 2018 to July 2019, can be seen in Figure 1.

![Figure 1. Data on solid waste dumps from July 2018 to July 2019.](image)

Figure 1 shows the volume of waste dumps from July 2018 to July 2019. It can be seen in the figure; the highest waste generation is generated in August 2018 with a total weight up to 100,000 kg. Meanwhile, the lowest waste generation was found in November 2018 with a total weight of 50,000 kg.

5. Discussion

The problem of waste management is one of the big challenges faced by people around the world, including at the Universitas Indonesia. Based on data from the United Nations, solid waste produced around the world can reach 7-10 billion tons per year. That is, on average each individual in the world produces about 1 ton of solid waste or 1000 kg per year [19]. Meanwhile, data at the Universitas Indonesia shows that the UI campus produces 1,730 tons of solid waste in one year (July 2018 - July 2019).

Based on waste dumps data in the 2018 to 2019-time period, it appears that there is a decline in the dumps of waste generated. The decline in waste dumps is likely related to the Go Green program which began to be implemented at the end of 2018. The Go Green program that has been implemented is in the form of campaigns and socialization on environmental management to the community members, as well as rector policy making. One of the campaign and outreach programs that succeeded in becoming the rector's policy was Zero Plastic UI [21].
Good waste management is greatly influenced by government policies and individual awareness [12,15]. Government policies both central and local are needed to bind every individual to play a role in the waste management program. The policies contained in the Universitas Indonesia environment include the issuance of Rector’s Decree Number 1305 / SK / R / UI / 2011 concerning Management of Waste and Waste Materials Containing Hazardous and Toxic Materials (B3) at the Universitas Indonesia Campus, Rector’s Decree Number 1306 / SK / R / UI / 2011 concerning Policies on Limiting the Use of Hazardous and Toxic Materials (B3) for Food and Beverage Packaging at the Universitas Indonesia Campus, Rector’s Decree Number 1308 / SK / R / UI / 2011 concerning Policies to Reduce Paper and Plastic Use on the Universitas Indonesia Campus, and Rector's Regulation No. 4 of 2019 concerning the Zero Plastic Program at the Universitas Indonesia [21–24].

The next step is the socialization related to policies that have been made to the community, especially the Universitas Indonesia civitas. The socialization aims to spread information about the policies that have been made and raise awareness regarding the role of each individual in good waste management [12]. Each individual in the campus environment of the Universitas Indonesia can contribute to waste management through the use of food and beverage containers that can be used repeatedly, the use of bags made of cloth to carry goods, as well as sorting waste according to the grouping of bins that have been provided [4].

Through the Go Green program that has been carried out, both campus policies and civitas lifestyle began to experience changes in waste management. The campus has reduced the use of bottled drinking water and disposable food packaging in every activity held on the campus of the Universitas Indonesia. Civitas awareness has also begun to increase, seen from the increasing number of civitas who use drinking bottles and food containers that can be used repeatedly when they are active in the Universitas Indonesia campus environment. In addition, the Universitas Indonesia also requires tenants and canteens to replace food packaging containers with biodegradable materials and reduce the plastic waste produced [21].

Even so, the Go Green program within the University of Indonesia campus environment still has great challenges in terms of providing supporting facilities and infrastructure [19,25]. This is such as the provision of drinking water refill that is still limited in certain locations within the Universitas Indonesia campus environment. These facilities are needed so that the community can easily get access to drinking water when on campus activities. In addition, public awareness around the campus environment also needs to be improved, because a lot of household waste originating from residential areas that enter the Universitas Indonesia campus area through water bodies [5,12]. Therefore, the scope of the Go Green
program needs to be expanded again to provide greater benefits, not only for the Universitas Indonesia civitas, but also for the community around the campus environment.

6. Conclusion
The Go Green program implemented at the Universitas Indonesia has successfully contributed to the reduction of solid waste dumps in 2018-2019. This shows that the awareness of civitas about good waste management has increased. The Go Green program implemented includes socialization to faculties, environmental campaigns, and policy making that supports the reduction of waste in the Universitas Indonesia campus environment.

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