



Implementation Of Washing Program In Sustainable Water Management At Uin Raden Fatah Palembang

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Abstract. This paper aims to explain and describe the implementation of the concept of sustainable water management applied at UIN Raden Fatah Palembang, as part of the implementation of the green campus idea. UIN Raden Fatah's participation in the UI GreenMetric program has been started since 2019 and will be active in 2020. Water management is an important thing at UIN Raden Fatah Palembang because of the condition of the campus itself which is in a water reservoir and swamp area. The campus is divided into two locations, namely Campus A in the Jalan Jenderal Sudirman area and Campus B in the Jakabaring area, Palembang. Campus B is a new campus that will only start operating in 2021, therefore, water management arrangements are very important. The management of water resources is carried out with the Wash program which consists of revitalizing clean water infrastructure, metering clean water supply, water reuse program, improving surface water quality, as well as construction of drainage and canalization. In practice, higher education leaders issue policies that involve all the academic community, ranging from education staff, educators, to students.

Keyword:

water, green campus, sustainable, swamp

1. Introduction

UIN Raden Fatah Palembang is one of the universities in Palembang, South Sumatera. Palembang City has an average height of 8 meters above sea level and most of land are swamp, including the land where UIN Raden Fatah Palembang was built, especially Campus B which is located in the Jakabaring area, SU II District, Palembang City. Surrounded by swamp, it is quite difficult to get clean water, so appropriate water treatment is needed.

One of the indicator outcomes in creating a green campus is sustainable water

treatment. UIN Raden Fatah Palembang submitted to the UI GreenMetric ranking assessment in 2020 for the first time and was ranked 45th National and 4th in PTKI. This satisfying result was a milestone for UIN Raden Fatah Palembang to be committed to become a sustainable green campus (Eco Green). This commitment was shown through all aspects of campus developments focused on the concept of sustainable development with various indicators, one of them is water treatment.

Sustainable development had been implemented in the new campus in Jakabaring, where residential areas and swamps around the campus were maintained to control surface runoff around the campus. This treatment required ponds or retention canals that could regulate the flow rate of surface water. In some cases, the retention pond was even supported by a pumping system to control the water in the retention pond [1]. Retention ponds were needed in water drainage management, especially in the Jakabaring area which had changed in land use and water management. The retention pond as an artificial infrastructure became a storage place for excess water from the Jakabaring swamp which was then streamed to the next reservoir, such as river bodies, tributaries or retention ponds.

Availability of clean water in UIN Raden Fatah Palembang was limited. With the geographical condition of the lowlands and many rivers, the swamps were filled and made into residential buildings as well as the campus of UIN Raden Fatah Palembang in Jakabaring, so it is difficult to get clean water in accordance with water quality standards. The increasing number of students, lecturers and education staff, technological developments and the use of natural resources will cause problems in the environment. Rapid population growth will encourage changes in water use which have an impact on water availability and will have an impact on the local environment. The availability of clean water is a global issue that requires serious attention.

The emergence of environmental issues cannot be separated from exploitative human nature. The global environmental issues nowadays are basically caused by the incapability of humans to connect with nature [3]. The importance of the environmental function for the community, especially the campus community as an effort to improve and protect is a priority that must be done to create a green campus environment. Human life cannot be separated from land use, because land is an important resource for humans [4].

The campus as a higher education institution has a responsibility to preserve the environment through the Green Campus program. Green campus is a sustainable environmental management that can be applied in overcoming environmental issues. Green Campus can reduce the rate of energy efficiency, water use efficiency, waste management and transportation. UIN Raden Fatah Palembang always commits to improve green campus programs particularly sustainable water treatment. UIN Raden Fatah Palembang has a strategic program called WASHING. This program was designed to relate to water treatment in Jakabaring campus that will be discussed in this paper.

2. WASHING: Water treatment program of UIN Raden Fatah Palembang

UIN Raden Fatah Palembang is committed to become a sustainable green campus. Currently, UIN Raden Fatah Palembang is focusing on water management. Water is one of the essential natural resources for life and other needs. The more population and development at UIN Raden Fatah Palembang, the more water resources demand. There are several water resources such as surface water (lakes, dams/reservoirs, rivers), groundwater and precipitation.

UIN Raden Fatah Palembang has two campus areas, namely campus A and campus B, 9 faculties of undergraduate program and a postgraduate program, 761 lecturers and education staff, and 24,000 of active students. Therefore, the availability of potable water must be provided. Through the Rector's policy, UIN Raden Fatah Palembang established WASHING program (Water Access; Sanitation and Hygiene, Integrity and Good University Governance) as sustainable water management. The implementation of water management of WASHING program is explained as follows:

2.1. Water Access

Water Access is a program to fulfill routine water needs. Through this program, UIN Raden Fatah Palembang will ensure that all academics of UIN Raden Fatah Palembang can access water easily such as in toilets, in prayer rooms, and also fulfill drinking water. Currently, the availability of access to clean water at UIN Raden Fatah Palembang using treated water from Local Water Supply Utility (PDAM) consists of 19 water access points.

Table 1. Efficiency of water use at UIN Raden Fatah Palembang

Apliance	Total Number		Total number energy Efficient appliances	Percentage (%)
	2020	2021		
Toilet	270	630	90	93,33
Wastafel	80	280	68	85

2.2. Sanitation

To provide access to clean and healthy water for campus residents, UIN Raden Fatah Palembang established an environmental sanitation program. This program is to realize and to ensure the condition of the campus environment, especially the physical, soil, water and air that meets the health quality requirements. Sanitation programs that have been implemented namely the provision of water supply in collaboration with PDAM by making water tendons and constructing integrated water management using surface water circulation in Jakabaring campus (Figures 1). The sanitation program carried out includes monitoring the quality, quantity, and use of water. UIN Raden Fatah Palembang has a wastewater treatment plant that is recycled and reused. Through sanitation program can save budget and increase water use efficiency on campus.



Figure 1. Recycle and Sanitation water in Campus UIN Raden Fatah Palembang

2.3. Hygienis

This program was implemented to provide a healthy environment so that campus residents avoid the spread of disease through cleaning drainage and using clean water so that the environment is free of liquid waste. The hygiene program also educated sellers and buyers at the food court of UIN Raden Fatah Palembang regarding the importance of hygiene. The management of the canteen environment is also integrated with the halal institution of UIN Raden Fatah Palembang, because hygiene plays an important role in determining good products (toyyib). The hygiene of the water in the campus is tested periodically at the UIN Raden Fatah Palembang laboratory (Figure 2). The data are used to make a policy for further the appropriate water treatment. Estika et.al., reported that water analysis provides input data for raw water management and for decision makers to design effective water resource management strategies. Raw water management and treatment must be supported by existing water quality data at the location. The water quality test must use the Water Quality Standard (BMA) based on the Minister of Health of the Republic of Indonesia. No. 416/Menkes/Per/IX/1990 and for the assessment of water class and water quality criteria is used BMA PP. No.82/2001[5].



Figure 2. Integrated Laboratory of UIN Raden Fatah Palembang

2.4. Integration water access

The availability of access to clean and hygienic water is directly integrated in central office management under the control of the general department. This is to facilitate the supply of water to each unit and faculty at UIN Raden Fatah Palembang, whereas availability of clean water on campus A (Figure 3.d) is still being supplied by PDAM. The integration of access to clean water is also part of the management of domestic wastewater on campus. The good waste water treatment will be able to regulate and supply water needs around campus (Figure 3a, b, and d), thus with this program, clean water can be easily accessed by all institutional units within the UIN Raden Fatah Palembang campus.



Figure 3. Treatment Water Consumed

3. Conclusion

The WASHING program (Water Access, Sanitation, Hynienis and Integration water access) of UIN Raden Fatah Palembang is a form of implementing sustainable water management. With the WASHING program policy, campus residents can easily access clean water for their daily activities. Installation of the processing unit increases the efficiency of the budget saving on the use of clean water. In addition, this program contributes to surface water management so that it can accelerate the surface runoff and wastewater treatment on campus properly.

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