

Sustainable Water Management in Tropical Region Campus: Study Case of Institut Teknologi Sepuluh Nopember Indonesia

Joni Hermana ^{*1, a}, Welly Herumurti ^{2, b}, Irhamah ^{*3, c}

¹*Rector of Institut Teknologi Sepuluh Nopember, Surabaya 60111, Indonesia*

²*Department of Environmental Engineering, Institut Teknologi Sepuluh Nopember, Surabaya 60111, Indonesia*

³*Department of Statistics, Institut Teknologi Sepuluh Nopember, Surabaya 60111, Indonesia*

^ahermana@its.ac.id, ^bherumurti@enviro.its.ac.id, ^cirhamah@statistika.its.ac.id

Abstract. Sustainable water management currently becomes more important because of water shortages and deteriorating its quality. This article reports the Smart Eco-campus program at the Institut Teknologi Sepuluh Nopember (ITS) for managing water resources by presenting a case study, including water conservation, wastewater treatment and water recycle within the campus area. ITS is one of the leading science and technological university in Indonesia which has many activities that cover teaching activity, laboratory and research works, student and other supporting activities. It is located in a coastal tropical area, mainly with dry and rainy seasons, although the seasonal period becomes uncertain nowadays. The campus area has a high level of ground water table with a high salinity concentration. It is less than 2 m depth and oligohaline salinity, respectively. Therefore, it is rather difficult to cultivate its water, even for gardening. However water management, in term of design, operation and maintenance is vital to sustain water availability for campus livelihoods. Several programs were implemented in ITS campus that includes water retention, water recycle, domestic and laboratory wastewater treatment. Another problem is that the distributed piping water which is provided by a municipal water company is not drinkable, hence the campus also has initiatives to construct some small drinking water treatment stations in several places, as the result of collaboration with alumni and university partners.

Keywords: Campus, Water Management, Sustainable, Tropical Region.