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Microbial Community in Constructed Wetland during the Treatment of Domestic Wastewater

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Abstract: Constructed wetland (CW) was operated for treating domestic wastewater for 60 days. Water hyacinth (*Eichornia crassipes*) and lotus plant (*Pistia stratiotes* L.) were used for domestic wastewater treatment as vegetation in the CW system. Microbial community existed in the CW was investigated for studying their potential roles in the treatment processes. Samples for microbial composition were collected from the wastewater influent, sediment and the roots of the plants in the CW. During the operational days, the bacterial isolates were morphologically and physiologically characterized, phyto- and zoo-planktons were visualized and identified. The system was able to remove BOD up to 85%, and reducing the level of N up to 76%. There were identified 37 bacterial isolates comprising of 11 isolates from water, 17 isolates from sediment and 9 isolates from the roots. The identified bacterial isolates belong to groups *Acinetobacter*, *Aeromonas*, *Flavobacterium*, *Lucibacterium*, *Paracoccus*, *Proteus*, *Pseudomonas*, and *Vibrio*. These following species were also identified during the system was running; they were *Pandorina morum*, *Ploceus* sp., *Euglena acus*, *Lepocircoidis ciliatus*, *Scenedesmus acuminatus*, *Raphidoneima spiculiforme*, *Euglena sanguinea*, and *Eudorina* sp.

1. Introduction
Water and sanitation specifically stated in sustainable development goals (SDGs) number 6 that is to

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