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Potential of reusing treated wastewater in Vietnam – A brief overview

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In Viet Nam, wastewater has been used for centuries for irrigation; fishery/fed aquaculture; rice and vegetable cultivation at small-scale/household scale based on farmers' experiences. Since early 1960s wastewater also has considerable roles in agriculture and aquaculture through some models such as biogas and VAC (gardens - fish pond - pig sty).

It should be noted that reusing wastewater for irrigation is prohibited. In fact, wastewater is continuously used with inadequate treatment or even without treatment. This would be due to about 13% of the total amount of wastewater was treated. The rest is discharged directly into the environment. Only a few big cities have centralized wastewater treatment plants. Currently, 43 urban WWTPs had been constructed in Hanoi, Ho Chi Minh City and Da Nang, Quang Ninh, Vinh, Dong Hoi, Quy Nhon, Nha Trang, Da Lat and Buon Ma Thuot cities with a total capacity of 926,000 m^3/day. Some 40 new WWTPs are in the design or construction phase with a capacity of 1,600,000 m^3/day. Biological technologies were mainly used in those wastewater treatment plants. The treated wastewater is usually discharged into the receiving water bodies. Even though, reuse of treated wastewater still faces many difficulties in Vietnam. The treated wastewater could be reused to plants within the premises itself.

It is predicted that by 2030, water demand for agriculture activities in Vietnam will reach 91 billion m^3/year. Therefore, reusing treated wastewater would be a great chance for environmental engineering. The advanced wastewater treatment technologies should be considered. At the same time, the policy for reusing treated wastewater would be generated as well.

Keywords: advanced wastewater treatment technologies, agriculture, reuse, treated wastewater.