

3) Business Model for Small-Scale Decentralized Wastewater Treatment and Sludge Management in Jordan

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Abstract:

Wastewater treatment is often driven by government mandate. The dissemination of decentralized wastewater management as complementation to large-scale centralized wastewater treatment plants in areas that cannot be connected due technical engineering issues or cost-efficiently can play a decisive role to achieve the SDG6. This paper describes the necessary conditions for successful business model and identifies the most important barrier to implement decentralized wastewater and sludge management system in Jordan. The absence of sustainable business models for decentralized system represents probably the major institutional barrier to this improvement. Wastewater systems in small towns and villages are usually too small and fragmented to raise the revenues and gather the capacities needed to operate and maintain them. Decentralized management can be economically and technically efficient, and conducive to sustainable urban development in the application area according to site specifics. Private sector can be enhanced to create outsources to these services and to alleviate the pressure of the public budget. The market of decentralized system has to be regulated by public control to ensure that quality and due diligence are maintained. Effective and enforced legislation and standards for construction, operation, and reuse are required. Revising by-laws and regulations are needed to include private capital expenditures and O&M for services providers. Expanding the role of the private sector that involves the divestiture of assets from the public to the private sector (such as design-build-operate), and a variety of public-private partnerships such as service contracting. Privatization also cannot be implemented unless certain policy barriers are overcome. These include policies related to operation, revenue collection, grants, taxation, and procurement, as well as trading regulatory. The challenges and barrier to business in decentralized wastewater management are: undefined institutional responsibility; unclear and fixed responsibility for O&M; lack of regulator and certification bodies, lack of education, training and capacity building of the administrative and operational staff; unclear tariff system, insufficient private sector involvement (design, construction, O&M); weak competitive market for O&M; lack of cost recovery mechanism and revenues collections, subsidy policy and low collection rate; and lack of implemented and innovative strategies. The decentralized model needs to be established based not only on the demand of services, but also on the vulnerability of surface and groundwater contamination, health issues and environmental pollutions. Full operational cost recovery can be attained from business operation, if the revenue generated can exceed the operational cost in addition to profit margin for the private sector.

Keywords: Decentralized Wastewater Treatment System, Business Model, Barriers and Challenges.