Viet Nam Urban Environment Program

CASE STUDY

Viet Nam's Urban Sanitation Agenda

ADB

With rapid urbanization, pollution of rivers from domestic wastewater runoff is a growing problem

A new study by the Asian Development Bank (ADB), Urban Sanitation Issues in Viet Nam,[1] examines the issues affecting the realization of the Government of Viet Nam's urban wastewater program. The study identifies major issues influencing performance and achievements, and highlights policy implications and choices that will determine future progress toward the government's environmental objectives and targets.

The legal and policy framework for the sanitation sector is guided by the commitment to protection of the environment as stated in the Socio-economic Development Plan 2011–2015. The new Law on Water Resources places further emphasis on protection of the quality of national water resources. Gradual decentralization during the past decade has resulted in transferring the responsibility for planning and management of urban infrastructure to subnational government. Decree 80/2014/ND-CP enables water and sewerage companies to charge for the provision of wastewater services to cost-recovery levels. The related Decision 1930/2009 formulates a long-term vision on sector coverage and defines detailed targets.

Currently, most urban households use inadequately maintained on-site sanitation, mainly septic tanks. These provide only partial treatment and contaminate groundwater and surface water. The continued discharge of untreated and partially treated municipal and industrial wastewater is a threat to public health, to dwindling freshwater resources, and thereby to national water security.

The construction of centralized wastewater treatment plants for urban areas in Viet Nam started in 2004. At present, it is estimated that about 700,000 cubic meters (m^3)/day of urban wastewater are being treated, in some 40 wastewater treatment plants. The installed drinking water supply capacity is 7 million m^3/day. Thus, only about 10% of domestic wastewater gets adequately treated before discharge to the environment.

Results of the ADB study point to the following key factors affecting performance and coverage of the government's urban wastewater program:

Financial Issues

Provincial governments are responsible for planning and budgeting for urban wastewater management programs to meet government targets. They are ultimately the owners of all infrastructure assets. Responsibility for management can be delegated by contract, for example, to water and sewerage companies. However, provincial governments

1 ADB. 2015. *Urban Sanitation Issues in Viet Nam.* Manila. To read the full study go to: http://www.adb.org/publications/urban-sanitation-viet-nam

cannot afford the capital costs of such schemes without substantial subsidy from central government, official development assistance, or both. The wastewater charges that can be levied from users are rarely sufficient to cover the cost of operation and maintenance, and cannot meet the cost of financing or replacement.

Household Connections and Connection Charges

Past wastewater projects have experienced resistance from households not wanting to be connected in newly sewered areas. Obstacles appeared to be the cost of the connection and the disruption caused by the construction process within domestic premises. Reaching the full public health and environmental objectives is compromised if not all households are connected to a new sewer system. Thus, Decree 80/2014 makes connection to a street sewer system compulsory. The cost of connection is expected to be incorporated in the wastewater charges.

Decentralization, Corporatization, and Accountability

Planning and management of urban infrastructure are devolved responsibilities. Relevant for the water and sanitation sector is the transfer of responsibility to Provincial People's Committees and to water and sewerage companies or urban environmental companies. These are gradually being corporatized and equitized. With such fundamental institutional changes, it is uncertain whether these agencies are capable of effectively fulfilling their devolved role, and whether effective regulatory instruments are in place to hold them accountable to deliver the services assigned to them. In a monopoly situation, the consumer needs protection through some form of independent regulation.

Private Sector Participation

Investment by the (international) private sector is often quoted as a means of funding part of the urban wastewater management program, to fill the financing gap. However, the sector has failed to attract significant private finance interest. This may be attributed to (i) uncertainty about ownership and condition of assets, (ii) lack of confidence in the regulatory framework to protect investment, (iii) ongoing ambiguity on responsibilities, and (iv) lack of confidence in the sources of revenue from charges. Private sector involvement to date has usually been by invitation or as an unsolicited bid, followed by a negotiated contract without competition or full transparency.

Training and Education

The increasing sophistication and expansion of wastewater management facilities place new requirements on skills for business planning, finance, and contract management, as well as for operation and maintenance of new facilities. Work has recently started on an inventory of training needs as perceived by water companies. Continued effort is required to assess training and education opportunities for the sector, together with the establishment of a unified system of certification.

Constructing a centralized wastewater treatment facility in Thanh Hoa, Viet Nam

Technology Issues

An evaluation of the performance of the sector to date suggests that most current wastewater treatment plants treat sewage of low concentration, probably due to the prevalence of combined sewer systems, infiltration of groundwater into sewers, some pretreatment of sewage in household septic tanks, and long detention times in oversized collector mains. Most treatment systems are of the activated sludge type with high energy requirements. Water quality standards for the discharge of treated effluent are demanding and are not related to the nature or use of receiving waters.

Septic Tanks

Septic tanks are currently the predominant form of wastewater management in urban areas. The septic tanks will remain in place for many more years, while wastewater projects are implemented throughout the country. In the meantime, these septic tanks need to be maintained and their sludge treated before final disposal. Projects have struggled with clear policies on connection or bypassing existing septic tanks when installing wastewater collection systems.

Laying pipes for a wastewater collection network brings excavation and road closures, disrupting urban life

Investment Program to Reach Sanitation Targets

The 2025 government targets imply an estimated investment of $10 billion–$20 billion, depending on choice of technologies for collection and treatment. Reaching this target requires a considerable scaling up of the existing annual sector expenditure, from some $200 million annually to at least $1 billion. In practice, this means prioritizing selected cities and areas within cities. Prioritization needs to consider population density as well as the availability of freshwater at risk because of deteriorating water quality, and areas where investment will bring early economic returns in terms of noticeable gains in public health and water quality.

Together with other development partners, ADB is considering expansion of its proposed urban wastewater management program into a 10-year multidonor urban environment program, incorporating climate change resilience into the urban planning and governance legislative and institutional structure. Such an investment framework would be guided by a policy matrix and a set of project selection criteria, through which the priority considerations described in this study would be applied.

GUIDING PRINCIPLES FOR ADB FUNDING OF WASTEWATER MANAGEMENT

- Objective: Improve public health and protect water resources
- Innovative, cost-effective wastewater treatment process; phased construction
- Treat before discharge; level of treatment in response to nature of receiving water
- Centralized or decentralized treatment for high-density areas
- Septage management for other urban areas
- Assume future increase in energy cost, water shortages, nutrient shortages

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