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Background Policy Study on Wastewater Management and Sanitation in Cambodia, Lao People's Democratic Republic (PDR) and Socialist Republic (SR) of Viet Nam

The views and opinions expressed in this report are those of the authors and do not necessary reflect official views of the ESCAP Secretariat

This is final version of the Study has been issued without a formal editing

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This policy study lays the basis for the DEWATS Policy Guidance Manual, which would be finalized in 2014 after three national workshops, scheduled in September-October 2014 with support of UN-Habitat and would be formally finalised by ESCAP.

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Executive Summary

The Background Policy Study (here: Study) on Wastewater Management and Sanitation in Cambodia, Lao PDR and Socialist Republic of Viet Nam (here Viet Nam) seeks to address the following three primary goals: (a) revisiting the policies, strategies, institutional and financial framework of the three countries; (b) reviewing barriers and drivers of sustainable sanitation services (SSS), and, (c) suggesting solutions and options for reform. Decentralized Wastewater Treatment Systems (DEWATS) are presented as one potential solution to sanitation issues in developing areas due to their low cost, modular structure, and potential for resource recovery and community empowerment.

Effective management of sanitation and wastewater is a growing challenge particularly in dense urban settlements of the three countries. Access to improved sanitation in urban areas is relatively high (78 per cent, on average, for the three countries), but sanitation coverage in secondary towns rates are observed as low as 10 per cent. However, less than 6 per cent of waste is adequately treated, even in areas where septage is collected in a sanitary fashion, such as through piped systems or in septic tanks. On-site sanitation often is inadequate in dense settlements and slum areas, thus requiring intermediate and complementary solutions. In fact, open defecation is still practiced in many low income and peri-urban areas despite remarkable progress over the last ten years.

According to a 2012 Water and Sanitation Program (WSP) study, the economic impact of inadequate sanitation in the three focus countries is vast and increasing (USD 1.42 billion per year), with total health-related economic costs accounting to more than USD 564 million per year. But returns on sanitation investments are also high. According to the World Health Organization (WHO) and World Bank studies, each USD 1 invested on urban sanitation has the potential to have a return of between USD 2 and USD 34.

There are three key drivers of change that lead to improved urban sanitation services in the three selected countries: the disclosure of information about negative environmental impacts of poor sanitation services; citizen demand for better services and individual champions among policymakers and civic leadership, and effective regulations that are strictly enforced. Thus, the common barriers to sustainable urban sanitation services in the three countries can be clustered within four groups: policy and citizen's demand, technical services, institutional set-up, and financing services.

Cambodia

Strategies, Policies, Laws, Regulations: The draft "Water and Sanitation Law of the Kingdom of Cambodia" was released in 2004 and the "National Policy on Water Supply and Sanitation" was adopted by the Council of Ministers in 2003. The policy lays out the vision for the sector, and specifies the role of different agencies; two priorities have implications for DEWATS: (i) decentralizing decision-making on sanitation: communities shall choose the type and level of service based on the technical and financial aspects of service options; (ii) prioritizing services to the poor.

So far, neither the draft Water and Sanitation Law nor the National Policy defines the minimum technical or operating standards for the household sanitation. The policy on decentralization has not been fully implemented in practice and urban water supply and sanitation remain, essentially, under central government control with minimal involvement from local levels.

Institutional framework and coordination: The Ministry of Public Works and Transport (MPWT) is responsible for implementing urban sanitation projects and other urban services (ex. sewage/drainage pipes). The MPWT's mandate covers preparation of plans, policies and investment programs, resource mobilization, setting of design and standards for construction and services, and coordination in the implementation of projects with the private sector. The Ministry of Rural Development is responsible on rural sanitation, while the Ministry of Environment (MoE) is responsible for setting water quality standards for effluents discharging into water bodies as well as monitoring and

regulation. However, in practice, MoE only monitors industrial on-site wastewater treatment facilities and does not monitor or regulate domestic or public wastewater.

Coordination of the urban Water, Sanitation and Hygiene (WASH) sector is done through the Technical Working Group (TWG) for the Infrastructure, chaired by MPWT and dealing mostly with urban water supply. The urban sanitation subsector does not have a similar platform. Private sector engagement, which is highly fragmented, is hampered by two factors: (a) cost recovery is highly uncertain since fees are low and irregularly collected; and (b) the land needed to build a treatment plant is difficult to obtain from the government.

At present there are now 23 demonstration and pilot projects of a small-scale sludge treatment in the villages, public and private facilities (e.g., schools, orphanages, hospitals, slaughterhouses) and small towns of Cambodia, that also include and are showing the value of public-private partnerships (PPP) for DEWATS facilities that could be adapted in peri-urban and low income areas. GRET and Bremen Overseas Research & Development Association (BORDA) have been in the forefront of such DEWATS demonstration in Cambodia for years. In its 24 major cities, only four have treatment plants (though only three are operational in Siem Reap, Sihanoukville and BTB), which are operated by wastewater management units of the Provincial Department of Public Works and Transport.

Financing: In 2006, an inter-ministerial prakas from the MPWT and Ministry of Economy and Finance issued a decision on Service Connection Fees and User fees for sewer collection and treatment. Block rates were introduced for different types of establishments. A household connection fee ranges from USD 10 to USD 40, and the monthly fee ranges from USD1 to USD4 which recovers only operations and maintenance (O&M) costs. Customers connected to central sewer systems are charged separately from the water bill.

Lao PDR

Strategies, Policies, Laws, Regulations: The draft Urban Wastewater Strategy and Investment Plan for 2015-2030 is currently under consideration by the Laotian Government. It comprises (a) institutional and legal reforms; (b) a strategy for improved access to sustainable wastewater through appropriate technologies; (c) capacity building and awareness raising at the central and local levels; and (d) financial sustainability. It calls for decentralized systems in Vientiane Capital City and secondary towns between 2016 to 2020, and centralized systems in Vientiane Capital City and Luang Prabang after 2020. The legal framework for sanitation and wastewater management is covered by various laws and regulations that often lack implementation decrees and enforcement. The government commits to start developing a policy towards mobilizing financing from consumers for sanitation development. This could be in the form of a surcharge equivalent to a certain percentage of the water bill.

Institutional Framework and Coordination: There is a need to establish a government-led national technical working group (TWG) on water supply and sanitation. However, there are cooperation arrangements between the government and external support agencies to facilitate implementation of DEWATS in the country. So far, most DEWATS programmes using pro-poor approaches, and partnerships with public and private sector NGOs and CBOs, have been promoted and implemented through external funding institutions (NGOs, multi and bilaterals). BORDA and GRET are among the few NGOs that have forged links with Lao institutions to push forward DEWATS.

Financing: At present the country has no operational urban sewerage system or wastewater collection, treatment and disposal systems. Sanitation facilities in urban areas are mainly on-site, built by households and composed of pour flush toilets with infiltration pits, although septic tanks are also used. However the design and construction of septic tanks is unregulated and septic tanks are not regularly de-sludged. Sludge disposal is not regulated and often emptied untreated directly into public drains or the urban environment. Storm water drainage in most urban areas consists of roadside drains leading ultimately to natural streams and rivers.

Practically no investments have been made by the government in sewerage and wastewater treatment plants. Based on the urban wastewater strategy and investment plan for 2009 to 2020, total *urban wastewater investments would require about US\$103 million*, which would include institutional support and capacity building (0.7%), facilities for Vientiane city (27%), secondary towns (20%), provincial capitals (17%), district centers (35%), and emerging small towns (0.3%)

Socialist Republic of Viet Nam (here Viet Nam)

Strategies, policies, laws and regulations: Over the past 20 years, the Government of Viet Nam has made considerable efforts to develop urban sanitation policies, legislations and regulations and to invest in urban sanitation including wastewater treatment systems. A comprehensive legal framework in environmental sanitation, including urban wastewater management, currently exists in Viet Nam but there are overlaps and gaps. There is a lack of clarity and overlapping of responsibilities between Ministry of Natural Resources and Environment (MONRE) and the water supply companies in terms of establishing and collecting wastewater fees. The policy to increase urban sanitation is in place, but issues remain with providing sanitation services in a sustainable way. To address the situation, a unified sanitation services in both urban and rural areas. Despite of these initiatives, urban sanitation continues to face critical issues, such as:

- Although 60 per cent of households dispose of wastewater to a public system, much of this is directed informally to the drainage system and only 10 per cent is treated;
- While 90 per cent of households dispose of wastewater to septic tanks, only 4 per cent of septage is treated;
- The focus of wastewater expenditure to date has been in constructing centralized treatment facilities, but this has not always been accompanied by appropriate collection systems;
- Decentralized systems are mostly developed and operated through a community-based approach and not brought to scale.

Decree 88 and its revised draft version require cities to prepare wastewater plans. However, sanitation planning is often not integrated into an urban development master plan. Regulations and specific technical guidelines for the planning, consultation and appraisal of urban sanitation development projects are still lacking.

Institutional Framework and Coordination: In Vietnamese urban areas, domestic wastewater drainage and treatment responsibilities belong to the Municipalities' authorities through their public-private companies. No city in Viet Nam has yet developed a clear strategy for Fecal Sludge Management (FSM), implemented an acceptable treatment technology, or regulated the design and construction of septic tanks for the household sanitation. Currently there is no coordinated government-donor dialogue on sector programming and financing at a high level and there is inadequate coordination among government agencies at central and local levels. There appear to be few incentives provided to encourage private sector investment in the wastewater business, although there is a policy of

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