

# ISSUES IN URBAN SEWERAGE & WASTE WATER TREATMENT IN VIETNAM

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# STATUS OF THE SEWERAGE AND WW TREATMENT IN URBAN AREAS OF VIETNAM

## 1. Sewerage services, WW treatment and reuse:

Is a public service with following tasks:

- ❑ Rain water collection and drainage;
- ❑ Waste water collection and sewerage;
- ❑ Waste water treatment and reuse.
- The sewerage service, the WW treatment and reuse are attaching with the environmental protection, particularly the water environment.

# STATUS OF THE SEWERAGE AND WW TREATMENT IN URBAN AREAS OF VIETNAM

## 2. Status (1)

### Sewerage & WW treatment systems

- Majority of the drainage and sewerage are the combined systems which have been constructed in different development stages → they are not consistent, synchronous with deteriorating facilities causing incapacity.
- Rapid urbanization, with 756 urban by 2012 and 32.2% urbanization ratio → causes the uncontrolled waste water volume which directly pour into the incapacity drainage system without treatment. (currently only 7 urban areas apply the centralized WW treatment 3 facilities with 14 treatment stations)

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## 2. Status (2)

- Calculation and forecast for future sewerage system were not accurate → drainage incapacity.
- The regular flood caused by heavy rain in HCM city and in Hanoi. Other urban areas, which were not suffer from flood in the past such as Can Tho, Da Nang, Quy Nhon. Hai Phong and Nha Trang etc, are now regularly facing heavy flood.



# STATUS OF THE SEWERAGE AND WW TREATMENT IN URBAN AREAS OF VIETNAM

## 3. Investments for sewerage and WW treatment (1)

- Investments for newly built and expansion of the sewerage facilities
  - T WW collection and treatment
  - T O&M of the drainage system.
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- 250 million USD has been invested each year in the past 10 years
  - 18 urban waste water treatment plants are on operation
  - 31 urban waste water treatment plants are under construction/or in the pre-construction period.

# STATUS OF THE SEWERAGE AND WW TREATMENT IN URBAN AREAS OF VIETNAM

## 3. Investments for sewerage and WW treatment (2)

- **Shortcomings:** 80% of the investments for urban WW projects and WW treatment plants projects relies on ODA source. However, the access to ODA is reducing. The fee collection from users is difficult. The sewerage tariff is only partly cover the costs for de-sludge and maintenance, etc.

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## 4. Ratio of connection and service access

The ratio of households who connect to the urban drainage system is low in many places.

- 94% urban population use only household's toilet
- 90% households use septic tanks
- 4% sludge is appropriately treated
- 60% households connect to the centralized drainage systems
- 10% collected waste water is treated in the WW treatment plants

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## 5. Sewerage tariff (1)

- Two types of tariffs are currently applied: sewerage tariff (Decree No 88/2007); and environmental protection tariff (Decree No 25/2013). Please don't confuse these two types of tariffs.
- The direct tariff collection from beneficiaries and pollution-caused subjects (except for plants) is complex and costly (due to the method for measurement of the WW volume and the determination of the pollutants) -) the above tariffs are added into the clean water price



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## 5. Sewerage tariff (2)

- In localities: currently only 10% - 20% of sewerage tariff is collected. The ratio of sewerage tariff takes maximum 40% of the clean water price.
- The level of the cost recovery against the O&M expenses (management network, exclusion of the treatment plants):
  - Hanoi 35%
  - Hai Phong 90%
  - Ho Chi Minh 50% - Lam Dong 40% (Danida)
  - Vung Tau 40%
  - Bac Ninh 50% (KfW)
  - Da Nang 30% (WB)
  - Soc Trang 96% (KfW)

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## 6. Sewerage service provision enterprises (1)

Currently there are 3 types:

- Sewerage service provision enterprise who specialized in this area
- Enterprise who provides both water supply and sewerage service
- Sewerage service provision enterprises who are urban multi-functions enterprises providing infrastructure development and services

Forms of enterprises:

- One-Member Co.Ltd: 20 companies
- JSC: 4 companies
- One-Member Urban Sewerage and Development Co.Ltd: BR-VT, Thai Nguyen, Hanoi, HCMC, etc.

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## 6. Sewerage service provision enterprises (2)

**Financial features:** main revenue is from the state budget, with small part from the sewerage tariff → meet only part of the expenses (without the basis depreciation cost).

### **Shortcomings:**

- Inconsistent model
- Low effectiveness (except for BR-VT, Hanoi and HCMC)
- Low competitive capacity; not yet access to the innovative technologies
- Limited resources (capital, operational budget, human resource, etc.)

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## 7. Owner of the sewerage systems

**a. People committees** of the urban areas are the owners of the sewerage systems:

- Invested by the state budget;
- Received from the enterprises, new residential areas;
- Received from organizations, individual who invested their capitals in sewerage facilities in certain limited periods.

**b. Organizations and individuals** can be the owners of the sewerage facilities which they invested in until the time they have to transfer the ownership to the provincial people committees (in compliance to the Decree 88/2007)

# STATUS OF THE SEWERAGE AND WW TREATMENT IN URBAN AREAS OF VIETNAM

## 8. Participation of the private sector

Promotion and encouragement have been made to attract private sector's participation in:

- Management and de-sludge of the sewerage networks
- O&M of the WW treatment stations
- Investment in construction and operation in two types: PPP or bidder selection (create the competition in price and service quality).

# STATUS OF THE SEWERAGE AND WW TREATMENT IN URBAN AREAS OF VIETNAM

## 9. State management in water drainage

### a. Sector's management

- Vertical sector's management MOC/DOCs (particularly the DOT is applied in HCMC)
- General management: MPI, MOF (sector's development and finance)

### b. Geographical territorial management

- People committees of provinces and cities
- People committees of urban areas under provinces and cities (Local authorities are responsible for both state management and management of state own enterprises operating sewerage service)

# ASSESSMENT & DISCUSSION

**1. The centralized sewerage systems** were operated ineffectively in the collection of pollutants (low BOD level input into treatment stations):

- The centralized sewerage in reality will be applied in the high populated urban such as Hanoi and HCMC
- Staging the investments for construction of WW treatment plants shall increase the effectiveness in condition of limited capitals.

**2. Connection at household level** gain inadequate consideration

- Connection at household level is not a mandatory requirement for the general sewerage systems.
- The financial supports (projects in Buon Ma Thuot and Da Lat) significantly contributed to the Enhancement of the connection ratio.

# ASSESSMENT & DISCUSSION

## **3. Operational cost is not recovered**

- Local authorities have troubles in implementation of the current regulations on tariff collection (25/88)
- The commitments from the local governments is essential to ensure the long term investment.

## **4. Limited capacity:**

- Local manager are incapable in O&M, in selection of appropriate technology option causing high cost in operation and ineffective investment decision.
- Inadequate public awareness.



## ASSESSMENT & DISCUSSION

### **5. Lack of financial incentives and policies for promotion of private investment**

- Private sector face risks and low cost recovery. The method “trade off the land use right for infrastructure” is facing many problems.

### **6. There is no effective sludge decentralized system in Vietnam. Efforts made by projects haven't existed long enough, or only have been types of demonstration.**

# RECOMMENDATIONS – CENTRAL LEVEL

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## **1. Financial mechanisms for urban WWmanagement**

- Development of national comprehensive strategies
- Effective management and use of capital resources

## **2. Development of the National Target Program for Urban Sanitation**

- Set priorities.
- Coordinate and allocate appropriately the available resources.
- Study and adjust the orientations for urban and industrial drainage up to 2025.

# RECOMMENDATIONS – CENTRAL LEVEL

## **3. Legal document system**

- Study, replace the Decree No 88/2007 towards the “Decree on sewerage and WW management”. The scope shall cover the urban areas, rural residential areas and industrial areas.
- Replace the Decree No 31/2005 regarding the production and provision of public products/services.
- Enable the flexible application of the Decree No 25/88 in order to collect the tariffs of: sewerage service, environmental protection, WW treatment service.

## **4. Appropriate water discharge standards/regulations with specific norm and unit price for each locality**

# RECOMMENDATIONS – CENTRAL LEVEL

- 5. Socialize the sewerage service:** promote the participation of the private sector via PPP and PSP approaches.
- 6. Enterprise models:** study and complete the organizational model of the sewerage service provision enterprises in the types of One-member Co.,Ltd, JSC, privatization, etc.
- 7. Capacity enhancement for central agencies**
  - Development of strategy, upgrading the quality of planning and forecast
  - Information and experience collection and sharing
  - Preparation of technical manuals, training courses, guiding handbooks
  - Provision of capacity building in all levels to improve the project management

## RECOMMENDATIONS – CENTRAL LEVEL

8. **Regulation on ownership:** regulates for people committees at provincial and city level. The adjustment direction: provincial committees shall mainly be the owner but can decentralize/authorize to the people committees of the belonging urban areas?
9. **Investment owner of the project:** who shall be the real investment owner of the sewerage project– the sewerage service provision agency and the WW treatment plants should be assigned to manage the ODA capital, to implement and to manage the project, to conduct the O&M and to be responsible for cost recovery, etc.

# RECOMMENDATIONS – LOCAL LEVEL

**1. WW management regulations in local areas:** below points should be focused:

- Clearly identify the owners of the sewerage works, attaching with their duties and power;
- Select the O&M agencies with their duties and power;
- Identify the right and duties of the discharge households;
- Develop the related regulations for connection, discharge at the connection point;
- Develop related regulations for sewerage tariff, ...
- Identify the responsibilities of related stakeholders.

# RECOMMENDATIONS – LOCAL LEVEL

- 2. Enhance the capacity for local authorities and related stakeholders**
- 3. Innovate, reform and apply the comprehensive approach**
  - Balance, prioritize the investment between the collection and treatment
  - Re-use the WW and treated sludge
- 4. Decentralized sewerage and WW treatment model – the replaced option for the centralized sewerage and WW treatment model**
  - Bottom up approach
  - Combination of the decentralized/centralized sewerage systems

# RECOMMENDATIONS – LOCAL LEVEL

## **5. Separate and combined sewerage systems**

- Issues on cost and feasibility
- Advantages of the separate sewerage system, including the elimination of the households' septic tanks

## **6. Connection at household level**

## **7. Design of appropriate WW treatment station**

## **8. Septic tank sludge management**

- Components of the combined sewerage system
- Strictly manage the de-sludge, the sludge collection and treatment



# RECOMMENDATIONS – LOCAL LEVEL

## **9. Reasonable O&M cost**

- Based on appropriate design
- Decrease the O&M cost via application of appropriate technology option with the local condition

## **10. Enhancement of cost recovery**


- Adequate and accurate estimation of the drainage tariff/price for WW treatment
- Willingness of tariff collection and payment (in an appropriate roadmap)

**11. Awareness raising for communities** via information campaigns, communication, education, in cooperation with social organizations.

# CONCLUSION

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- Currently, despite the encouraging achievements, many shortcomings in the water drainage sector have been seen in Vietnam.
- The sector shall make much better efforts in order to improve the status and investment effectiveness; to well operate and manage the systems.
- Sector's institution and management capacity need to be strengthened.
- The limited resources shall be appropriately exploited.
- Hopefully the discussions shall gain reasonable and innovative orientations in the coming time.



**THANK YOU VERY MUCH  
FOR YOUR ATTENTION!**

