



Department for
International Trade



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VIETNAM

WATER SECTOR BRIEFING 2017





COUNTRY PROFILE



Population: **91.7 million**

33.9% of the population is living in urban areas.
Forecasted to rise to 34.7% by 2020



Consumer Price Index (CPI): **0.6%** increase
compared to last year



GDP per capita: **\$2,111**

GDP Growth forecast for 2017: **6.7%**



Consumer Confidence Index: **109**

Ease of doing business: **82/100**

WATER OVERVIEW



2,360 rivers, estimated length of over **10 km**

Average annual discharge: **310 billion m³**. Rain season accounts for **70%** of the whole year discharge.

2 largest rivers: **Red river** in the North and **Mekong River** in the South



Average annual rainfall: Hanoi: **1.763 mm**; Hue: **2.867 mm**; Ho Chi Minh: **1.910 mm**



7,500 water storage infrastructures located in ten major river basins across the country



70% of the population is living in coastal areas and low-lying deltas.

REGULATION TO DATE



Decree No. 80/2014/ND-CP dated 6 August, 2014 on Drainage, Sewerage and Wastewater Treatment

Circular No. 04/2015/TT-BXD dated 3 April, 2015 guiding the implementation of some articles in the Decree
Circular No. 02 /2015/TT-BXD dated 2 April, 2015 guiding the methodology for pricing wastewater services



WATER SUPPLY

During the last 10 years, the urban water supply systems of Vietnam have been developed without proper management.

The 2008 surveys carried out by the Vietnam Water & Sanitation Association (VWSA), revealed a mixed performance in 66 out of the 68 provincial/municipal water supply companies (WSCs), which are mostly “state owned one member limited companies”. In many provinces, the existing water production capacity even exceeded the demand, but the service coverage is still very low. The percentage of connections in small towns is very low, with about one third of 727 district towns having some form of piped water supply. Even where there is piped water, it typically supplies only a small proportion of the population mainly in the town centres.

The existing water resources for urban and rural water supply systems are being polluted due to the discharging of domestic and industrial wastewater directly into the water sources without treatment. It has been shown that if the government does not take urgent measures to address this problem, the quality of water resources for water supply plants will be affected and the treatment process will be more complicated.

Details of demand for water and investment needs up to 2020:

- Estimated urban population: 44 millions
- Demand for water: 9,4-9,6 million m³/day
- Investment needs: about 3,3 billion dollars (about 0,6 billion dollar each year)

The need for investment in just the urban water supply sector, in order to achieve the government’s target of 100% in 2020 for urban water supply coverage is 284% higher or 341 million USD annually, compared to the investment level that was needed during the last decade, while the ODA sources will likely decrease as Vietnam becomes a middle income country in the near future.

WASTEWATER TREATMENT

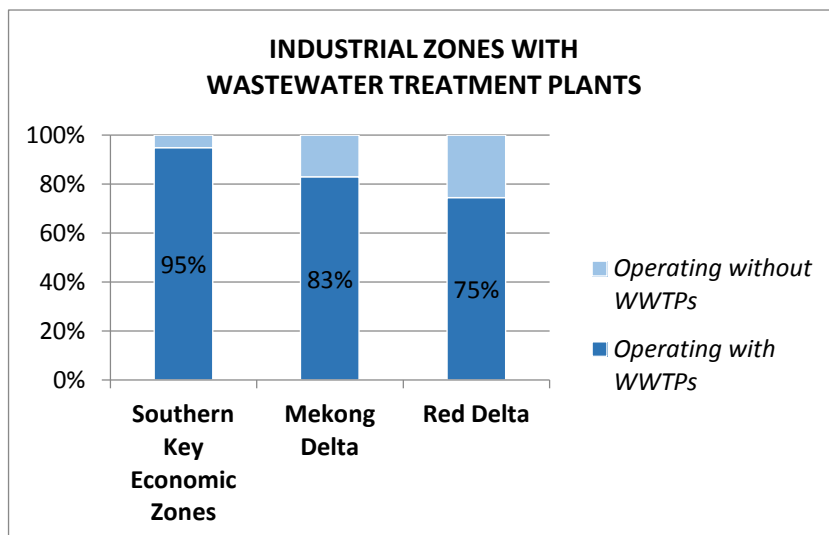
Rapid economic development in Vietnam has been one of the reasons for the growth of its wastewater treatment market, amid the boom in urbanisation and development of many industrial zones throughout the country. In particular, concern about treatment capability is growing for urban and industrial wastewater.

With only about 15% of wastewater adequately treated in some 33 wastewater treatment plants in urban areas (Ministry of Construction, 2016), the majority of domestic wastewater is discharged back to the environment and polluting the surface water. On the other hand, current treatment capacity of 850,000 m³/day is expected to increase by another 1,600,000 m³/day from more than 40 new wastewater treatment plants being constructed (Ministry of Construction, 2016).



At the same time, nearly 78% of industrial zones are operating with wastewater treatment plants (Ministry of Construction, 2016).

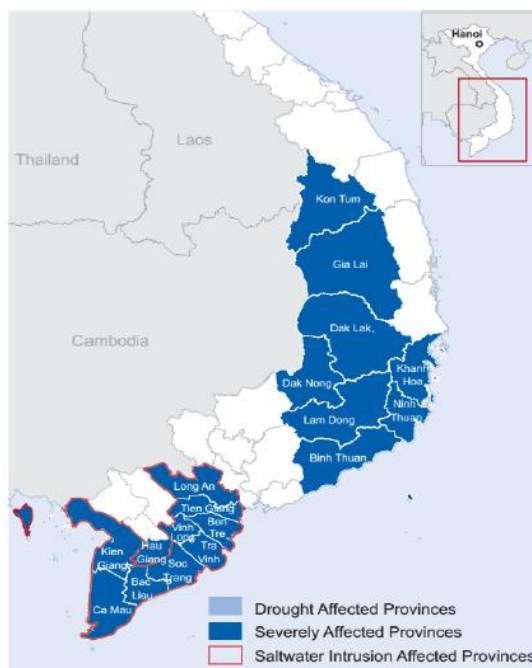
As for wastewater treatment systems, the government has made great efforts to invest in installing new systems and upgrading older ones. Moreover it has called for the support of the private sector and the international community because of budget constraints.



Source: Webinar Vietnam Water sector, 2016

CLIMATE CHANGE FACTOR

Vietnam is subjected to many natural hazards, including drought, as well as river and coastal flooding.



Source: UN Viet Nam Drought Recovery Plan 2016

Drought and Saltwater Intrusion

River water levels was forecasted to be lower in the 2016/17 dry season: 15-35% lower than average in the Mekong Delta, 20-60% lower than average in the Central Highlands and 70% lower than average in the South-Centre region (UN Viet Nam Drought Recovery Plan, 2016). At the same time, saltwater intrusion is expected in the Mekong Delta with a higher than normal rate but less severe than last year (UN Viet Nam Drought Recovery Plan, 2016). Therefore, more pressure is now on the 2 million people who are already under water stress from the 2014 El Nino.

River and Coastal Flooding

World Bank's Paper 7765 (2016) showed that climate change has exposed more people to flood risk, particularly in the Mekong and Red Delta. It also highlighted the limitation of using historical flood levels in water infrastructure planning. At the same time, controlling water in the upper stream could expose the lower stream to stronger flooding. Thus, water risk is increasing for not only the coastal areas but also areas where urban planning has not accounted for the climate change



VISIONS

Facing the increasing water risks from climate change and surface water pollution from inadequate water infrastructure, Vietnam has taken steps to improve its water resource management via many water projects and environmental visions, starting with the National Strategy on Environment Protection.

NATIONAL STRATEGY ON ENVIRONMENT PROTECTION TO 2020 WITH VISIONS TO 2030

Objectives to 2020	<ul style="list-style-type: none"> To generally control and minimise the increase of environment pollution, resource deterioration and biodiversity degradation To further improve quality of the habitat To raise the capability of responding climate change, striving for sustainable national development
Visions to 2030	<ul style="list-style-type: none"> To prevent and push back environment pollution, resource deterioration and biodiversity degradation To improve quality of the habitat To actively respond to climate change To create fundamental conditions for a green economy, with low waste and low carbon, for the sake of the country's prosperity and sustainable development

Source: ITA Top Markets Report, 2016

Orientation for development of water supply for urban areas and industrial parks to 2025

- The rate of coverage of clean water supply services from the central water supply system in urban areas is 100%, with an average water supply norm of 120 liters/person/day, water quality meeting technical regulations; Industrial parks are adequately supplied with water, meeting pressure and flow requirements.
- The rate of urban water supply systems to establish and implement a safe water supply plan reached 75%; The rate of loss of clean water for urban centers is less than 15%; Continuous water supply service, enough 24-hour pressure.

Orientation for Drainage Development towards 2025 with a vision to 2050

- 50% of total wastewater in urban centers of grade II or higher and 20% of urban centers of grade V or higher shall be collected and treated up to standard.
- Expand the scope of service of urban drainage systems to 80%. 20-30% of the total volume of urban wastewater is collected and treated up to standards and technical regulations, 80% of wastewater in craft villages is collected and treated.
- Expand the scope of service of urban rain water drainage systems to 80%
- 10-20% of urban centers have solutions to collect, process and recycle rain water up to standards for daily life, watering plants and washing roads...
- 100% of urban areas no longer have frequent floods in rainy season



OPPORTUNITIES

Water Supply: US\$6 Billion Market Opportunity until 2020

Doubling of Capacity Required by 2020



Area	Capacity Required (million m ³ /day)			
	2013	2015	2020	7-yr CAGR
HCMC	1.5	2.8	3.7	13.8%
Hanoi	0.9	1.0	1.8	10.4%
Others Major Cities	4.3	5.0	6.5	6.1%
Totals:	6.7	8.8	12.0	8.7%

- According to the World Bank, in the next seven years to 2020, Vietnam needs approximately US\$6 billion of investments in the water supply sector to meet national targets and world standards.
- In Hanoi, the investment needs are estimated to be US\$2.4 billion
- US\$2.0 billion is required for Ho Chi Minh City
- Remaining \$1.6 billion is for other cities such as Danang, Hai Phong, Can Tho, Nha Trang for the next 7 years

Represents >70% of market!

Wastewater: US\$10 Billion Market Opportunity until 2025



- 2015 -2020: 5.7 billion US\$.
- 1.4 billion US\$ in Cau River Basin.
- 4.3 billion US\$ in Nhue-Day River Basin
- 21 municipal wastewater treatment plants with combined capacity of 1.2 million m³/day needed until 2020 in Ha Noi.
- 12 drainage basins and 12 municipal wastewater treatment plants with combined capacity of 2.9 million m³/day in HCMC.
- Estimated 4 billion US\$ needed until 2025.
- 13 municipal wastewater treatment plants with combined capacity of 188,000 m³/day in Mekong Delta.
- 17 industrial wastewater treatment plants with combined capacity of 240,000 m³/day.



Business opportunities in Non-revenue Water

Description	Total cost (US\$ million) <small>(Source: ADB, 2011)</small>				
				Proposed allocation	
	2010-2015	2016-2020	2021-2025	ODA	State
Awareness raising of communities	5.2	3.8	2.3	5.0	6.3
Capacity building for WSCs & local government	1.8	1.3	0.7	2.3	1.5
NRW projects	230.0	164.0	98.0	492.0	
Program management	0.3	0.3	0.3		
Grand total	237.3	169.4	101.3	499.3	8.7

CITY/PROVINCE	NRW	CITY/PROVINCE	NRW
Ha Noi	23%	Da Nang	19%
Hai Phong	15%	Binh Duong	9%
Hai Duong	17%	Ba Ria Vung Tau	15%
Thua Thien Hue	13%	Ho Chi Minh	32%

Source: Webinar Vietnam Water sector, 2016

KEY CHALLENGES

Finance	The provincial governments is responsible for the planning and budgeting for water infrastructure in their areas. Projects are then implemented via bid for tender. However, they do not have the capital and thus are dependent on the central government fundings and international grants.	Key technologies and services in demand (ITA Top Markets Report, 2016) <ul style="list-style-type: none"> Waste to energy technology Engineering, Procurement and Construction Services Operations Services Advanced Filtration Membrane Filtration Anaerobic Digestion Nitrification Biological Denitrification Monitoring Equipment Testing Equipment
Household Connection & Connection Charges	The indoor disruption caused by the construction process and the cost of connection are the main causes for resistance from household towards the construction for urban water network improvement.	
Private Sector Participation	Lack of confidence on the sources of future revenue and in regulatory framework to protect investment have resulted in just a few private involvement in Vietnam's water from international prospect.	
Technology	Current systems are accustomed to treating wastewater of low concentration. High energy is also often required and quality standard for the discharge of treated effluent is challenging.	



INTERNATIONAL SUPPORT & VIETNAM'S INITIATIVE

Below are projects which have current/upcoming opportunities for water/environment sector:

Projects	Packages	Type of work	Est. value (US\$)	Expected bidding time
Water Sector Investment Program - Tranche 2 ADB Total: US\$255 m 2012-2020 https://www.adb.org/projects/41456-033/main#project-pds	QN-CS01: O&M, NRW reduction	CS	650,000	Q2/2017
Water Sector Investment Program - Tranche 3 ADB Total: US\$142.5 m 2015-2020 https://www.adb.org/projects/41456-043/main#project-pds Procurement plan: https://www.adb.org/sites/default/files/project-document/209501/41456-043-pp.pdf	QN-CS2 Quang Nam project Supervision and Contract Management	CS	1,046,000	Dec-16
	BG-CS2 Supervision and Contract Management	CS	662,000	
	CL-CS2 Supervision and Contract Management	CS	616,000	
	TH-CS2 Supervision and Contract Management	CS	642,000	Q1/2017
	V-CS2 Supervision and Contract Management	CS	794,000	Q2/2017
HCMC Flood Risk Management Project WB Total funding: US\$ 436.91 million	Procurement packages for Equipment for weather radar station, hydro-met monitoring equipment, Equipment for flood forecasting system, integrated flood risk management warning system	GW		
	16 consulting packages for consulting services	CS	968,000	Q4/2016
Urban Water Supply and Wastewater project	Consulting service development of environmental and social safeguard	CS		May-17



WB 2011-2019 US\$ 200 m http://projects.worldbank.org/P119077/urban-water-supply-wastewater?lang=en	documents			
Vietnam Dam Rehabilitation and Safety Improvement Project WB US\$443 m 2015-2022 http://projects.worldbank.org/P152309?lang=en	VN-DRSIP MOIT-12368-CSQCBS/ Build up method and guideline for safety assessment of hydropower dam (earth dam, rock-fill dam, concrete dam) and applied to 10 selected dams	CS	1,000,000	Mar-18
Mekong Integrated Water Resources Management Project-Phase II 2013-2019 \$27.5 m http://projects.worldbank.org/P124942?lang=en Procurement Plan: http://documents.worldbank.org/curated/en/939001501785015220/pdf/Plan-Archive-4.pdf	C2-G-4 / Supply, installation and technology transfer of monitoring equipment for 11 water resources monitoring stations Component: Establishment of a Water resources Monitoring Network at the Border Areas with Cambodia and Lao PDR in the Lower Mekong and Water Resources Information System for the Vietnam Part of the Lower Mekong	GW	5,020,726	Oct-17
	C2-G-5 / Supply, installation and technology transfer of IT equipment system for collection and storage of data on hydro meteorological and water resources monitoring stations network Component: Establishment of a Water resources Monitoring Network at the Border Areas with Cambodia and Lao PDR in the Lower Mekong and Water Resources Information System for the Vietnam Part of the Lower Mekong	GW	2,999,141	Oct-17



According to the ITA (International Trade Administration) Top Markets Report (2016), approximately 23 major water treatment projects in Vietnam has been announced for the 2016 to 2018 tendering period.

Water projects tend to be jointly funded by the Government of Vietnam and an International organisation. An example is the Government looking to invest around USD 2.78 billion into the water sector by 2020 with the support from ADB's multi-tranche financing facility (MFF) of up to USD 1 billion for 2011-2020. In addition, USD 200 million financing package to Vietnam for water and sanitation was approved by the World Bank in 2015 with an additional USD 25.5 million to be funded by the Vietnamese government to finance related projects (ITA Tops Market Report, 2016).

Major current and past projects include: Yen Xa wastewater treatment plants and attendant sewer network in Hanoi (270,000m³/day) (jica.go.jp) and Ho Chi Minh NLTN wastewater treatment plant (830,000m³/day) (worldbank.org).



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<http://bbgv.org/the-business-centre-about.html>

enquiries@bbgv.org

Vietwater 2017 Exhibition, Ho Chi Minh city, November 8-10th

<http://www.vietwater.com/>

Ministry of Construction

<http://www.xaydung.gov.vn/web/guest/english>

Ministry of Natural Resources and Environment

<http://www.monre.gov.vn/wps/portal/english>

Vietnam Environment Administration

<http://vea.gov.vn/en/Pages/trangchu.aspx>

Vietnam Water Supply and Sewerage Association (VWSA)

<http://vwsa.org.vn/en-us/home.aspx>