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Contents

Investment Landscape	1
Delta Management	3
Water-Agrifood.....	4
Waste Management	5
Water Supply	6
Moving Forward	7

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Since the 1970s and 1980s, the Netherlands has been contributing to the development of water resources in Vietnam. Partly due to the similarities of low-lying deltas, there has been close cooperation between Vietnam and the Netherlands for knowledge and technical expertise such as noted in Strategic Partnership Agreement (SPA) on Water Management & Climate Change in 2010, and elaborated in the Mekong Delta Plan which was submitted in 2013¹. On the other hand, the water sector in Vietnam is becoming more and more competitive as international organizations and companies are tapping into the potential of the sector in the country. The recent development of the investment landscape, in particular the streamlining of Public Private Partnership (PPP) projects and a continued focus on the impacts of climate change, indicate potential business opportunities in the country that are worth exploring.

Investment Landscape

Public Private Partnerships (PPPs)

In March 2018, in a move to improve openness and transparency, the Ministry of Planning and Investment (MPI) has required contractors to make bids available on the National Procurement Network (NPN). Furthermore, with a more streamlined and simplified process for Public Private Partnership (PPP) projects, it will make it easier for foreign investors to deal with Vietnamese regulations regarding PPPs². Some of the significant changes are highlighted below:

- Hybrid contracts are now recognized as a type of PPP (i.e. BT, BTO, BOT etc.)
- Investors are no longer required to obtain an investment registration certificate for a PPP project, which greatly simplifies the procedures to implement PPP projects². There is a new procedure specifically for high-tech PPP projects which will create more flexibility for investors and reduce time and costs associated with high-tech PPP project implementation. Under this new procedure, the selection of investors will be conducted after the pre-feasibility study and project approval. As a result, the selected investors will be responsible for preparing the feasibility study, instead of the Ministries or provincial People's Committees, as is the case for other projects.
- Additional government capital has been made available to finance PPP projects as well as increases in the minimum equity requirements for private investors. The government may now finance PPP projects through additional means, such as infrastructure assets, or the right to operate construction works or provide services. This amendment will grant more flexibility to the Ministries and provincial People's Committees to mobilise resources for, and to potentially boost the number of, PPP projects³.

¹ Embassy of the Netherlands (Vietnam). (2018). *Water in Vietnam*. Vietnam: Embassy of the Netherlands (Vietnam)

² KPMG. (2018). *Legal Update - NEW DECREE 63/2018/ND-CP ON PUBLIC PRIVATE PARTNERSHIP (PPP)*. Vietnam : KPMG Vietnam.

³ KPMG. (2018). *Legal Update - NEW DECREE 63/2018/ND-CP ON PUBLIC PRIVATE PARTNERSHIP (PPP)*. Vietnam : KPMG Vietnam.

- As well as the requirement to publish information on PPP projects on the national tender portal within seven working days from the approval of the projects key details of the PPP project contracts (including project names, contract execution dates, identities and particulars of the State bodies and private investors as engaging parties, project location, investment capital, prices and fees of goods/services, etc.) are now required to be published on the same portal within seven working days from the execution of such contracts³.

In summary, these changes hint that Vietnam is laying a better platform for foreign investors to become more involved and independent in the country. The government's latest 5-year socio-economic development plan highlights water supply, irrigation systems and wastewater treatment as key industry segments to target⁴. The government is adapting to decreasing Official Development Assistance (ODA) funding in the near future and they are looking to all sources for investment and expertise to ensure their targets are met. Furthermore, the Ministry of Planning and Investment (MPI) believes that the country will require more than €126 trillion in capital for infrastructure developments until 2030, and that excludes costs for railways, airports and waterway development⁵.

ASEAN Smart Cities Network

Another recent development is Vietnam's commitment to climate change adaptation and its plan to develop smart cities, especially for Danang, Hanoi and Ho Chi Minh City. These cities are part of the ASEAN Smart Cities Network, an initiative spearheaded by Singapore as chair of ASEAN 2018⁶. The hope is to promote smart solutions in a multitude of areas, in particular, urban management of water and wastewater, alternative energy, as well as security and solutions such as, flood monitoring systems. As rules and regulations relax regarding the investment of international investors and companies, Vietnam's participation in these programs could provide a window of opportunity for Dutch companies, especially in coastal towns such as Da Nang.

Privatization

The MPI continues to privatise state-owned enterprises (SOEs) and has finalized a list of 375 state-owned enterprises to be wholly or partially divested by 2020 with total capital exceeding \$4.7 billion⁷. While this has been a slow process, this year is expected to be the peak period of divestment, with 185 companies up for at least partial divestment, including those which missed the 2017 deadline. According to local news outlets, the Vietnamese government plans to privatize 57 water supply and drainage companies between 2017-2019 from Hau Giang to Lang Son with 10 companies in water

⁴ 2030 Water Resources Group. (2017). *Vietnam: Hydro-Economic Framework for Assessing Water Sector Challenges*. USA: 2030 Water Resources Group.

⁵ KPMG. (2017). *Privatizing SOEs – Implications for Foreign Investors*. Vietnam: KPMG.

⁶ Viet Nam News. (2018). Đà Nẵng recognised as green, smart city Retrieved from Viet Nam News: <https://vietnamnews.vn/environment/464956/da-nang-recognised-as-green-smart-city.html#cZiRypO8UUja4iGG.97>

⁷ NIKKEI Asian Review. (2017). *Vietnam will miss state enterprise divestment target this year*. Retrieved from NIKKEI Asian Review: <https://asia.nikkei.com/Markets/Capital-Markets/Vietnam-likely-to-miss-target-in-SOE-divestment-this-year>

supply are being targeted in focus locations such as Bac Giang, Hai Duong, Hoa Binh, Ninh Binh and Vinh Phuc⁸.

Highlights of Recent News:

- September 2018: Kon Tum Water Supply Company Limited raised over €2 million privatizing part of the company. It is the only company providing clean water in Kon Tum province. See more at: <https://baodautu.vn/ban-het-52-trieu-co-phan-cap-nuoc-kon-tum-gia-binh-quan-12718-dongco-phan-d88445.html>
- October 2018: On 9/10/2018, at the Hanoi Stock Exchange (HNX), the People's Committee of Khanh Hoa province organized an auction of divestment of 15.7 billion (1.57 million shares at face value), similar representing 6.4% charter capital that Khanh Hoa People's Committee is holding at Nha Trang Port JSC, with the starting price of 11,900 dong / share, raising over €500,000. See more at: <https://baodautu.vn/ubnd-tinh-khanh-hoa-ban-het-157-trieu-co-phan-cang-nha-trang-d89101.html>

Delta Management

Accounting for almost 30% of the country's GDP, 90% of the rice exports and 60% of seafood exports, the health of the Mekong Delta is of utmost importance to Vietnam. The Netherlands has played an integral role in aiding Vietnam's efforts in adapting to climate change and the need to promote sustainable socio-economic development in the Delta. The expertise and knowledge that was shared during the initial Mekong Delta Plan in 2013 has ensured that Dutch companies are in a strong position to continue to promote their delta expertise in other areas. As weather patterns become more extreme and more unpredictable, Vietnam will be looking to expertise and technical know-how in order to adapt these exacerbating climatic conditions.

Local municipalities in the region are still looking to invest a substantial amount of public funds to upgrade sea and river dykes. For example, along the Co Chien River, over €21 million has been allocated to strengthening dikes, preventing salt water intrusion and ensuring clean water supply to locals⁹. Investment business opportunities continues to be available as Vietnam looks to protect of vital agricultural areas and improve flood protection for communities in the region.

Highlights of Recent News:

- August 2018: In Dong Thap Province, serious measures are being taken to combat rising floodwaters from upstream, and rice seeds are only being sown in areas with strong dykes. The provincial People's Committee has asked the Government to fund construction of 12 residential areas for these households at a total cost of

⁸ Vietnam Water Supply Association. (2017). *Vietnam to privatize 57 water supply and drainage companies*. Retrieved from Vietnam Water Supply Association: <http://vwsa.org.vn/vn/list-article/54/tin-trong-nuoc.html>

⁹ Vietnam Net. (2018, August 30). *Mekong Delta provinces take action to ensure safety during flood season*. Retrieved from Vietnam Net: <https://english.vietnamnet.vn/fms/society/207737/mekong-delta-provinces-take-action-to-ensure-safety-during-flood-season.html>

VND657 billion (over €24 million). See more at: <https://english.vietnamnet.vn/fms/society/206959/mekong-delta-reinforces-dykes-as-water-levels-rise.html>

Water-Agrifood

The agricultural sector plays an important role in Vietnam's economy. It accounts for 22% of GDP, about 12% of exports, and 48% of employment; thus, crop performance is extremely important. Currently, the Netherlands ranks 8th in investment in the agricultural sector in Vietnam with total registered capital reaching over €156 million¹⁰. However, while there is enormous potential for the agriculture sector, productivity needs to be improved. The country's most important agricultural product is rice; Vietnam is one of the top rice exporters in the world. Other important products include coffee, cotton, peanuts, and peppers.

As Vietnam continues to adapt to the issues associated with climate change, cooperation and investment is needed to meet government objectives to improving the quality of agricultural products and the livelihoods of producers¹¹. Technical expertise and knowledge in the area of water management will be extremely important in the future.

Pollution poses a great challenge to ensure water of sufficient quality for agriculture production. There remains a big gap in the market of treatment of water and wastewater from and for agriculture activities. Other sectors of agri-food that could be of interest as the government looks to upgrade the monitoring and testing of water in the agricultural sector. In particular, the aquaculture sector urgently needs an upgrade in infrastructure. This industry is one of Vietnam's main aquaculture exports with over 700,000 hectares devoted to shrimp farming, however, is still manually maintained¹¹. Water monitoring systems were especially crucial for shrimp farming, as shrimp are highly susceptible to external factors such as temperature, pH levels and salinity. Any changes to subsidies given out to farmers, could pose an interesting avenue for business.

Highlight of Recent News:

- September 2018 : More breakthrough solutions are needed in the Mekong Delta to help farmers cope with unpredictably rising water levels. This year, the flood levels have been alarmingly high, over a metre compared to the same time last year in some places. According to Irrigation department, over €175 million are needed to help farmers cope with flooding. See more at: <https://vietnamnews.vn/environment/466711/measures-needed-to-help-mekong-delta-farmers-cope-with-floods.html#iSoKSB1F9og085lv.97>

¹⁰ Ministry of Foreign Affairs . (2017). *Agriculture in Vietnam*. Hanoi: Embassy of the Netherlands in Hanoi and Consulate General in Ho Chi Minh City.

¹¹ VietnamNet. (2018). *Hi-tech in aquaculture needed: Experts*. Retrieved from VietnamNet:

<https://english.vietnamnet.vn/fms/business/208938/hi-tech-in-aquaculture-needed--experts.html>

- June 2018: In agriculture, an asparagus growing project in Phu Xuyen district using seeds from the Netherlands is reaping success. See more at: <http://en.nhandan.com.vn/politics/external-relations/item/6274002-hanoi-pledges-to-roll-out-red-carpet-for-dutch-businesses.html>

Wastewater Management

Rapid expansion in urbanisation and the development of many new industrial zones throughout the country has highlighted the need for focus on the treatment capabilities in urban and industrial areas. The rest is discharged back into the environment, further polluting other water resources. The urgent need to upgrade these facilities has led to recent increases funding from ODA sources, with more than 40 new wastewater treatment facilities under or planned to be constructed. Recently, RoyalHaskoningDHV was awarded a €9.5 million contract to implement a complete water solution in the Phu My New Urban Area near Ho Chi Minh City in July 2018¹².

Furthermore, the government is looking to increase the current treatment capacity of ~900,000m³/day by another 1.6 million m³/day by 2020¹³. Besides, in recent years, a large number of decentralised wastewater treatment plants have been constructed in both large and medium-sized urban areas¹⁴.

Vietnam has ambitious goals in terms of its urban water infrastructure. The “Orientation for Development of Water Supply in Vietnam’s Urban Centres and Industrial Parks Leading to 2025, and Vision for 2050” aims to equip most cities with centralized municipal wastewater treatment and collection systems, with 70-80% of municipal wastewater to be treated adequately. In the short term, the government is hoping to improve the capacity of WWTPs to 50% of the released wastewater by 2020¹⁶. Furthermore, urban centres like HCMC and Hanoi are pushing to upgrade their wastewater infrastructure. HCMC is in the middle of the Ho Chi Minh’s Urban Flood Control Program (2016-2020), which is in the process of building and upgrading 6,000km of drains, 12 wastewater treatment plants and over 5,000km of canals, all of which has a total cost is €3.75 billion. Hanoi plans to spend \$2 billion to upgrade its drainage and effluent treatment capacity in the coming decade¹⁵.

Facts:

Vietnam’s 37 urban WWTPs only have a capacity of ~900,000m³/day which is about ~15% of released wastewater.

19 of 43 industrial zones in Hanoi do not have WWTPs, and only 50% of those work effectively.

According to the World Bank, 90% of households use septic tanks to dispose their wastewater.

¹² Vietnam Investment Review. (2017, 07 19). *Royal HaskoningDHV signs major wastewater contract in Ba Ria-Vung Tau*. Retrieved from Vietnam Investment Review: <https://www.vir.com.vn/royal-haskoningdhv-signs-major-wastewater-contract-in-ba-ria-vung-tau-50719.html>

¹³ VNExpress. (2017). *Ho Chi Minh City spills 30 percent of clean water through leaking pipes*. Retrieved from VNExpress: <https://e.vnexpress.net/news/news/ho-chi-minh-city-spills-30-percent-of-clean-water-through-leaking-pipes-3540412.html>

¹⁴ Water Environment Partnership Asia (2013). *Urban Domestic Wastewater Management in Vietnam – Challenges and Opportunities*.

¹⁵ Department of International Trade . (2017). *Vietnam - Water Sector Briefing 2017*. Great Britain: Department of International Trade .

Slowly the regulatory environment in Vietnam is catching up to help protect and prevent individuals and companies not adhering to environmental protection standards. In February 2017, the Sanctioning Administrative Violations in Environment Protection went into effect. The decree stipulates that fines up to VND 1 billion (USD 44,400) will be handed out for individuals violating environmental laws, and up to VND 2 billion (USD 88,800) for organizations¹⁶. These are the highest administrative fines ever to be put into effect.

Highlights of Recent News:

- **August 2018:** The Viet Nam Association for Urban Planning and Development wants to revive Kim Nguu River, one of the worst polluted in the city, by improving water quality in a 1.2-km section and creating a public space along the riverside. Tran Ngoc Chinh, president of the Viet Nam Association for Urban Planning and Development, also said the public-private partnership (PPP) model or calling for investment from the private sector were the best ways to implement the project. See more at: <https://english.vietnamnet.vn/fms/environment/207551/hanoi-plan-to-clean-kim-nguu-river.html>
- **August 2018:** Ho Chi Minh City is calling for investment to 17 flood prevention and wastewater treatment projects, and needs more than 96 trillion VND (~€3.5 billion) for the works from now to 2020. By 2020, the city also needs to build 12 wastewater treatment plants with a total capacity of over 3 million cu.m per day. See more at: <https://english.vietnamnet.vn/fms/society/206701/hcm-city-needs-over-4-bln-usd-for-flood-prevention--wastewater-treatment.html>

Water Supply

Urban and rural water supply systems around Vietnam are under heavy stress due to pollution from discharge of industrial and domestic wastewater into water sources without treatment. The Vietnamese government has recognized the need to address these issues and has outlined the demand and investment needed by 2020 in order to mitigate these problems:

- Estimated urban population: 44 million
- Demand for water: 9,4-9,6 million m³/day
- Investment needs: about €2.84 billion (about €0.52 billion each year)

Vietnam's fast-growing population has increased the burden on water resources and facilities, leading to a needed increase of investment 284% or €293.6 million higher than levels compared during the last decade¹⁷. However, due to past poor management strategies and infrastructure, decreasing water availability and more extreme climatic conditions, it continues to put considerable stress on the existing water distribution networks. According to the World Bank, less than 15% of water related

¹⁶ 2030 Water Resources Group. (2017). *Vietnam: Hydro-Economic Framework for Assessing Water Sector Challenges*. USA: 2030 Water Resources Group.

¹⁷ Department of International Trade . (2017). *Vietnam - Water Sector Briefing 2017*. Great Britain: Department of International Trade .

investment is aimed at improving water distribution, however, this will need to increase in the near future¹⁸. A high rate of water loss, averaging 27 percent (equivalent to 1.8 million cubic meters per day), further exacerbates the problem. In HCMC, it is believed that leakages in the distribution networks is costing the city over €35 million a year¹⁹.

These issues are further amplified when it is expected that the country's total water consumption is predicted to almost double this decade, with increasing water demand by sectors such as irrigation by about 30%, industry by almost 190%, urban by 150% and aquaculture by 90%²⁰. Improving the effectiveness of monitoring and prevention mechanisms to leakages in water distribution networks is another area for companies to target. Local governments are in need of external expertise in mitigating and implementing effective solutions to these challenges. In addition, groundwater resources will need more focus as the country looks to expand its supply to meet growing demand and achieve efficient distribution while combating land subsidence due to unmanaged extraction of groundwater.

Highlights of Recent News:

- August 2018: Hanoi sets a target that by 2020, 100% of rural people will have access to clean water. To date, TP has called for the participation of 23 investors, deploying 34 clean water projects with a total cost of nearly €410 million. At the same time, the city has reserved a budget of €29.5 - €36.9 million for investors to borrow at preferential interest rates to implement clean water projects in remote areas. See more at: <http://vwsa.org.vn/vn/article/1291/hien-thuc-hoa-giac-mo-nuoc-sach-nong-thon.html>
- September 2018: Medium-term public investment plan to 2020, Hue Water Supply Company (HueWACO) will implement 15 projects (DA) to ensure water supply for difficult areas, especially 2 mountainous districts of Nam Dong at a cost of almost €7.5 million.

Moving Forward

In the context that Vietnam's economy continues to develop, and the need for private investment and cooperation increases, these indicate potential for Dutch companies to explore the markets. While there are large-scale projects available in the city centres, targeting small-medium sized regions and projects could be another possibility worth exploring.

¹⁸ World Bank. (2014). *Water Supply and Sanitation in Vietnam Turning Finance into Services for the Future*. Vietnam: World Bank Group.

¹⁹ VNExpress. (2017). *Ho Chi Minh City spills 30 percent of clean water through leaking pipes*. Retrieved from VNExpress: <https://e.vnexpress.net/news/news/ho-chi-minh-city-spills-30-percent-of-clean-water-through-leaking-pipes-3540412.html>

²⁰ 2030 Water Resources Group. (2017). *Vietnam: Hydro-Economic Framework for Assessing Water Sector Challenges*. USA: 2030 Water Resources Group.

The targets that Vietnam has set itself in regard to the management of its water resources translate to capital expenditure requirements of US\$1.44 billion per year for water supply and US\$1.14 billion for sanitation, with almost 90% of these investment requirements being for urban areas²¹. Unfortunately, the anticipated financing falls far short of these requirements and deficits are estimated to over US\$700 million per year for water supply and over US\$400 million for sanitation²¹. On top of this, approximately US\$245 million per year is required for the operation and maintenance of water supply services and US\$176 million for sanitation, with much of it for urban areas. However, whichever data sources are used, it is clear that Vietnam is not yet investing enough in the water supply and sanitation sectors. The World Bank notes that the scale of investment needs could be reduced by improving the management of existing infrastructure and services in order to reduce replacement costs, which form over 40% of the total requirements²². This is an area that worth exploring in the near future.

Legislation

Another important element is the continued evolution of legislation as the government continues to create more favourable conditions for private sector participation in the development and operation of services, in both urban and rural areas. Additionally, as ODA funding sources decrease in the coming years and more projects will be funded by government resources, appropriate technology choices when making new investments will become particularly important for large capital projects such as wastewater treatment plants. Overseas expertise will be needed to bridge knowledge gaps for local firms, possibly leading to an increase in capacity building and international collaborations²².

As stated above, funding for water supply and wastewater projects comes mainly from ODA sources with the major donors being the World Bank (WB) and the Asian Development Bank (ADB), committing billions of dollars to Vietnam's water projects²³. However, given the public finance constraints and the phasing out of ODA assistance of several bilateral development partners, the Government hopes to source a significant portion of the capital through Public Private Partnership (PPP), including foreign investors. The water and sanitation sector has been identified as a potential sector that should be a target for PPP projects. However, as it aims to reach industrialized nation status by 2020, Vietnam faces substantial challenges. It is estimated that from now until 2020, Vietnam would need around \$170 billion to develop its infrastructure, including transport, bridges, power plants, water supply network, waste water treatment plants and ports²⁴. In the wastewater sector, the next 4-5 years will be characterized by continued growth, which is to include large-scale centralized facilities in major cities as well as upgrading existing sewer networks. Additionally,

²¹ World Bank. (2014). *Water Supply and Sanitation in Vietnam Turning Finance into Services for the Future*. Vietnam: World Bank Group.

²² Embassy of the Netherlands (Vietnam). (2018). *Water in Vietnam*. Vietnam: Embassy of the Netherlands (Vietnam).

²³ Export.gov. (2017, 07 13). *Vietnam - Environmental and Pollution Control Equipment and Services*. Retrieved from Export.gov: <https://www.export.gov/article?id=Vietnam-Environmental-and-Pollution-Control-Equipment-and-Services>

²⁴ 2030 Water Resources Group. (2017). *Vietnam: Hydro-Economic Framework for Assessing Water Sector Challenges*. USA: 2030 Water Resources Group.

decentralized solutions and higher efficiency for sludge management are other sectors that are expected to exhibit significant growth. This growth in the wastewater sector has been aided by the enforcement of pollution regulations and tighter controls on how businesses and industries dispose of their waste as the country ramps up its export of manufactured goods.

Local production of environmental equipment still does not currently meet market demand, especially the requirements of ODA-funded projects. Technical conditions/requirements governing many ODA projects dictate that many materials must be imported (water meters, valves, pumps, motors, water treatment chemicals, water filtration systems, water control and monitoring equipment, etc.). WB or ADB-funded projects are typically procured through an international competitive bidding that offers a more transparent process. In addition to municipal and donor-funded projects, market demand is also being driven by certain industrial users. Industrial parks may be a potential market for wastewater treatment systems. On the other hand, the focus on cost in the procurement process is an important factor that should be kept in mind in developing the strategy for approaching/ developing in the Vietnamese market.

Intensive international competition

There is also more intense international competition in the water sector in Vietnam. While the Netherlands may be the largest European contributor, neighbouring countries like Japan, Korea and Singapore have been strengthening diplomatic ties and actively targeting the water sector with their FDI. In the first half of this year, while there were 87 countries and territories having investment projects in Vietnam, Japan ranked first with the total investment capital of \$6.47 billion, making up 31.8 per cent of the total. South Korea ranked second with the total registered investment capital of \$5.06 billion, accounting for 24.9 per cent, and Singapore ranked third with the total registered investment capital of \$2.39 billion, capturing 11.8 per cent. Furthermore, a lot of this investment has been in the urban water management sector. For example, in June of this year a €3.65 billion joint venture was announced between Japan's Sumitomo and Vietnam's BRG to initiate a smart city program in Hanoi, which would be focusing on clean water supply²⁵.

Furthermore, other countries like France, Finland and Denmark have this year been strengthening ties with Vietnam ministries in order to promote their company's expertise in areas such as wastewater treatment and climate change adaptation. As ODA sources start to decrease, it is possible that Vietnam will start to look for other avenues for funding and increase the competition among international companies. Therefore, the choice of the regions and targeted market segments will be crucial for the success of a company.

²⁵ Vietnam Investment Review. (2018). *Vietnam reports first billion-dollar FDI projects of 2018*. Retrieved from Vietnam Investment Review: <https://www.vir.com.vn/vietnam-reports-first-billion-dollar-fdi-projects-of-2018-60562.html>