



## BAC NINH

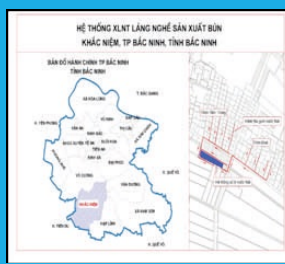
### Introduction

Bac Ninh city is located 30km in the Northeast from Hanoi and is a fast growing city, which almost doubled its proportion of trade, services, industries and construction in recent years. In the beginning of 2018, the administration of Bac Ninh was upgraded to City Class 1, which equals the status of a province. Bac Ninh is known as the "Land of hundred handcraft villages" and famous for its longstanding culture, academic tradition and the homeland of the "Quan Ho" folk songs which are recognized by the UNESCO as intangible cultural heritage of humanity. Beside that, Bac Ninh is recognized for its noodles production from private households in the Khac Niem district. There between 500 and 600kg noodles are produced every day in 207 households.

But the food production also generates around 3.450m<sup>3</sup> untreated wastewater a day (including domestic, industry and husbandry) discharging directly to the environment. In 2017, Bac Ninh signed a Memorandum of Understanding (MoU) with BORDA Vietnam and its partner - Vietnam Academy for Water Resources (VAWR) - to implement integrated sanitation approach to entirely solve the environmental pollution of wastewater especially from the noodle production in this area.

### Quick Facts

Country:	Vietnam
Population:	206,035 Inh.
Adm. Area:	82.6.km <sup>2</sup>



### Executive Member (since 2017)

### Contact

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### Challenges related to Water and Sanitation

Despite the challenges occurring from the noodle production, the city of Bac Ninh is also facing a rapid industrialization and development of craft villages, which increase the weight of environment pollution. Most of the existing infrastructure is outdated or insufficient in these areas and many more rural areas with longer distances to the urban center haven't any treatment systems in place so that wastewater and waste directly discharge to rivers, channels or other open water bodies. But even with the centralized wastewater treatment system in the city only 35% of all households are connected.



Untreated waste and wastewater disposal I



Untreated waste and wastewater disposal II



Household noodle production

## System Solution

### Integrated Sanitation Management - Food Production (Noodles)



#### Applied Modules:

- Decentralized Wastewater Management
- Fecal Sludge Management
- Regulations
- Operation & Maintenance
- Capacity Building
- Monitoring & Evaluation
- Re-Use

#### Key Project Interventions

- Develop capacity of city and local authority for implementation and operation and maintenance of decentralized wastewater management
- Raising awareness to decision makers from city to ward and people on environment protection, wastewater treatment, hygiene and sanitation to reduce pollution
- Provide assistance to city and ward authorities to develop policies on fee collection of decentralized wastewater treatment
- Propose and demonstrate the technological solution on fecal sludge management

#### Financing Mechanism

The project implementation is funded by the provincial state budget. Optional, private infrastructure investments are possible (BT models of Public-Private-Partnership).

#### Project Images



Starting the construction of wastewater treatment plant



BORDA – VAWR engineers supervised the construction



After the construction