

## The "water line" around Hanoi:

### Part 3: Resolving the revival of rivers

(LDBD) Hanoi has a dense river system, besides some large rivers surrounding it, rivers in the inner city such as To Lich River, Kim Nguu River, Song Lo River, and Tha River are also scenic routes. Attractive water surface in the development of Hanoi. However, a worrying fact is that these rivers are mainly only with the function of ... waste water discharge. Whilst the issue of overcoming pollution is still problematic, decentralization is still inadequate.

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#### Many sources of poison

Cu Da Village in Cu Khe Commune (Thanh Oai District) is located on the Nhue River. It was in the early twentieth century that it was one of the richest lands, up by the development of business.



Improving and "rescue" the rivers in Hanoi is urgent task

The Nhue River alongside the village is known as the "Silk Road", making Cu Da a busy transit port, contributing to the consolidation of goods from the Northwest, or the South. Sadly, the river is now considered an important commercial port and the picture is beautifully turned black stink buggy smell.

According to observation data of Hanoi Natural Resources and Environment Department, there are some monitoring points, Nhue-Day river basin has many indexes in excess of allowed standards. Specifically, BOD5 (the amount of oxygen needed to oxidize organic substances and biochemical bacteria in water ...) in the rainy season in the Nhue River from 1.09 to 2.28 times; Diversically

in the Day River, this content exceeds 1.1-2.28 times. The amount of COD (the amount of oxygen required for microorganisms to oxidize organic matter by reaction) in Nhue river exceeds 1.09 to 1.89 times; Day River exceeded 1.09 to 1.71 times. In addition, the content of coliform (a type of bacteria living in the soil, water ...) of both rivers are higher than permitted standards ...

Not only the Nhue River, Day River many sections in other rivers in Hanoi are no different from the dead river. The Taurus River is an example. Knew the actual records, every one kilometer of Kim Nguu River has 7 sewers discharged directly to the river. Through investigation, Kim Nguu River is currently also carrying a large amount of waste water at the same time.

As waste water is discharged directly, not processed from roads as Lo Duc, Tran Khat Chan ... so heavy pollution, especially air pollution. Mostly noticeable in the summer, hot oi mixed with the stench from the river bed makes thousands of households living on both sides feel stifling.

As reported by the authorities, as of early 2018, the average daily Hanoi residents give natural environment about 650,000 to 700,000 m<sup>3</sup> of waste water and more than 1,000 m<sup>3</sup> of waste. Due to the limited capacity of the wastewater treatment system, up to now, about one third of the waste water is not treated and poured into lakes and rivers.

Preliminary statistics show that in the inner city, there are about 360 restaurants, large restaurants discharging wastewater containing grease to the environment, of which wastewater in 240 Oil or grease stagnation, block or dense clogs drainage system. Hundreds of repair shops, car wash, motorbike do not have waste water treatment system, or have not meet the requirements are discharged to the environment.

Contamination of rivers beyond the subjective causes from the wastewater treatment facilities is not guaranteed, but other causes come from the people's consciousness. A part of people often "discharge" garbage indiscriminately down the sewers, ditches ... causing congestion in most of the drainage lines in Hanoi. The implication is that the system can not drain water when heavy rain lasts, leading to the local flooded streets. This situation is common in Co Nhue - Xuan Dinh (North Tu Liem), Ta To - Ta Thanh Oai (Thanh Tri) ...

### How to remove?

The idea of river rehabilitation is also reflected in the Master Plan of Hanoi Capital to 2030 with a vision of 2050. In particular, the master plan for the three major river basins At the northern part of Hanoi and the old Hanoi area, the drainage system will be integrated, especially the central urban area with 90% of water drainage system going up to 100%.

Also recently, many functional units have actively dealt with this problem. Hanoi Drainage Company is an example. According to the research, the unit has implemented a series of solutions such as installation of aquariums on 39 lakes; Aeration on 22 lakes to enhance self-cleaning.

In addition, to deal with pollution in Hanoi, the company also applied Redoxy-3C technology to clean the lake water in the area. After treatment, the first step is to show that the water has completely disappeared, has no organic pollution and effectively limits eutrophication.

### Proposed solutions to "save" the Nhue River

Speaking to the Capital Lao Dong Newspaper, Ho Anh Cuong, Director of Traffic and Environment Stops, said Nhue River was one of the most polluted rivers in the city.

In order to save this river, the unit has also worked with planning, agriculture, economics, finance and sociology experts to restore the Nhue River. River to the end of pollution and drainage of water in the rainy season "to the leaders of the Ministry of Natural Resources and Environment. The project consists of 2 phases.

Stage 1 is to build a pumping station - a floating station on the Red River with a capacity of 4,800m<sup>3</sup> / day and night to supply the Red River into the Nhue River in the Red River watershed below the Nhue River in the dry season from October to October. By the end of April, estimated at 10-15 billion; To build new bridges before old Lien Mac sluice gates; Reconstruct Lien Muc 1 sluice and Lien Muc 2 sluice with depth 3m before and equal to Nhue river bottom after dredging 3m sludge; Construction of drainage pump station in the rainy season: Install 2 pumps with a capacity of 25m<sup>3</sup> / s x 2 pumps = 50m<sup>3</sup> / s at the new Lien Mac sluice. 2 sides x 1.2km = 2.4km) from the first section adjacent to Red River to Lien Mac sluice gate.

Phase 2 will embank concrete 2 on the bank of Nhue River to the end of the Nhue River (to the Day River), about 76 km and 24 km of Chau Giang River in Ha Nam to the Red River and dredge about 2 - 3 m. To build a waste water collection system along the Nhue river bank and about 16 wastewater treatment stations, to build roads of between 7.5 m and 11 m and pavements on two sides of the Nhue river, to build 10 pumping stations Drainage from urban areas and Nhue; Sewer and drainage pumping station (drainage) 192.000m<sup>3</sup> / 1h (equivalent to 50m<sup>3</sup> / s) at the end of Chau Giang River flows to the Red River in Ha Nam Province.

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The technology applied to the treatment of lakes basically does not affect the aquatic ecosystems such as algae, zooplankton, etc. However, according to many experts, this solves the "top" because water sources in Hanoi are severely polluted due to many reasons. And one of the inadequacies is decentralization.

Specifically, the management and discharge of waste water is regulated in the Law on Water Resources and the Ordinance on Exploitation and Protection of Irrigation Works. These documents clearly state that the discharge of waste water into the water source and the irrigation system must be licensed by the competent authorities.

Accordingly, the Ministry of Natural Resources and Environment and the provincial People's Committee grant permits for discharge into water sources, the Ministry of Agriculture and Rural Development and the provincial People's Committee grant permits for discharge into the irrigation system. Thus, on the same system there are two different types of licenses issued by two different agencies to deal with the same problem.

In addition, the Department of Agriculture and Rural Development is responsible for granting permits for discharge into irrigation works but has no authority to inspect and sanction enterprises that discharge untreated or untreated wastewater. .

The management and exploitation of irrigation works can only monitor and detect violations and report to functional agencies such as the Department of Natural Resources and Environment and the environmental police for handling. Together with the policy of water resources management, environmental protection but through many agencies together common sense can lead to the "common father no one to cry", difficult to blame.

Back to the efforts of Hanoi. Over time, the city has been gradually controlling the sources of waste, construction of waste water treatment plants before pouring into the river to meet environmental standards.

For the Nhue-Day River basin, in recent years, the city has built and operated wastewater treatment plants in Kim Lien, Truc Bach, Yen So; To build Cau Nga wastewater treatment plant to treat wastewater of craft villages and daily-life wastewater in 3 communes: Duong Lieu, Cat Que, Minh Khai (Hoai Duc district); Waste water treatment station in Tay Mo ward (Nam Tu Liem district) ...

At the same time, to speed up the project of waste water treatment plant in Son Dong and Van Canh communes (Hoai Duc district); Thanh Thuy (Thanh Oai district); Phung Xa (My Duc district).

However, in order to limit and step by step overcome river pollution, the city needs to actively build waste water pipelines along the river to transfer to the central treatment point, wastewater before pouring into the river, regularly carrying out shred and river dredging activities.

*There's more...*

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