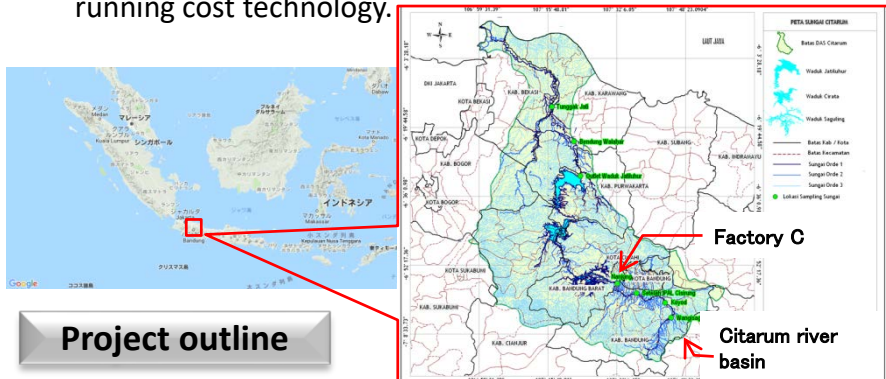


## Implementation systems

Nihon Suido Consultants Co.,Ltd, Sanki Engineering Co.,Ltd, and Nagaoka University of Technology

## Background

- The water resources of the rivers and groundwater systems in the Citarum River Basin are critical to social and economic development of the country.
- In recent years, water pollution problem has occurred in accordance with rapid growth of economy and population, especially around Bandung in upper Citarum river basin.
- Indonesian government has strengthen law regulation to prevent water pollution since 2017 and 2018.
- However, appropriate wastewater treatment technology that can comply with law regulation has not been disseminated. It is necessary to develop and disseminate energy-saving and low running cost technology.



## Project outline

- This project aims to disseminate energy-saving and low running cost wastewater treatment technology, combination of ABR (Anaerobic Baffled Reactor) and DHS (Down-flow Hanging Sponge) system, for textile industry in Citarum river basin. The effectiveness of the ABR and DHS system has been already demonstrated in Japan by Nagaoka University of Technology.

## Location

- Textile industry in Cimahi city (factory C with a capacity of 3,000 m<sup>3</sup>/day)

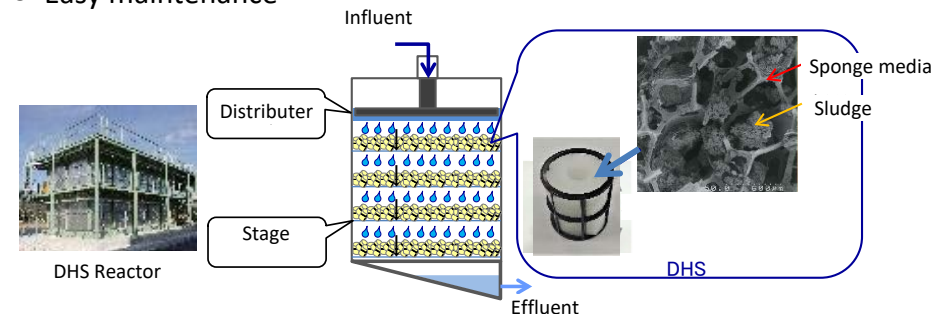
## Outline of technology

<ABR>

- Chemical compounds of color contained in specific dye stuff can be biodegraded in ABR reactor, and ABR enables stable treatment even if flow rate and loadings fluctuated.

<DHS>

- No need of machinery aeration(i.e., energy-saving technology).
- Sponge can contain highly concentrated sludge (20~40 kg-DS/m<sup>3</sup>-sponge) and amount of excessive sludge is small.
- Easy maintenance



(Reference) M. Tandukar, S. Uemura, A. Ohashi and H. Harada (2006): Combining UASB and the "fourth generation" down-flow hanging sponge reactor for municipal wastewater treatment, *Water Science & Technology*, Vol 53 No 3, pp 209-218.

## Expected results and business prospects

- Improvement of water quality in Citarum river and sub river that connects to Citarum river.
- About 240 textile industries are located in upper Citarum river basin.
- Construction of wastewater treatment plant for textile industry will be implemented cooperating with EPC companies in Indonesia. Sponge for DHS reactor will be transported from Japan to Indonesia.