

Community-Based Sewerage System to Improve Water Environment in Kelurahan Batununggal, Bandung City, Indonesia

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Abstract

Cikapundung Kolot River is one of Citarum tributary rivers. Cikapundung River has potency and function as raw material for drinking water, municipal flushing and natural drainage, electrical power plant as well as tourism object. The condition in alongside of Cikapundung River has already full of buildings with density level from low to high, from elite to slum settlement with poor sanitation. Most of citizens use Cikapundung River as disposal site for wastewater and solid waste.

For Cikapundung Kolot River, the main pollutant is from household activities. From Bandung City Environmental Protection Agency observation result, it is known that Cikapundung Kolot River water quality do not fulfill standard quality. In order to overcome pollution in Cikapundung Kolot River, West Java Environmental Protection Agency together with local community initiated the development of Community-Based Sewerage System (CBSS) with Tangki AG (from the initials of Agus Gunarto, who popularized it in Malang).

Kelurahan Batununggal is located around Cikapundung Kolot River with total area of 183,105 Ha and population of 12,109 people so that its density reaches 0.066 people per Ha. From all existing area, it is about 141,264 Ha used as settlement area. This must need special attention. Kelurahan Batununggal is categorized as area with high population density, with low-income level and poor environmental condition. For that reason, Kelurahan Batununggal requires Community-Based Sewerage System with Tangki AG.

The purposes of Community-Based Sewerage System with Tangki AG are to reduce the amount of domestic wastewater pollution and to improve community awareness in the conservation of water environment by changing community habit from disposing becomes collecting domestic wastewater. Domestic wastewater, which usually disposed directly into Cikapundung Kolot River, is now collected in Tangki AG to be treated first and then disposed into river. This mechanism could reduce river pollution load because of domestic wastewater and reduce the risk of disease occurrences because of poor sanitation. In addition, this system also improves economic ability of rural community especially the women who have great role in the economic activities.

Community-Based Sewerage System with Tangki AG was implemented for the first time in Tlogomas, Malang, East Java and was implemented in Bandung City. Population in Desa Tlogomas, Kabupaten Malang is about 315 people with total area of 10,000 m². Its most community still lack of awareness toward the beauty and hygiene of environment and this condition have potency to cause environmental pollution. Its community still has habit to dispose domestic wastewater into Brantas River or other opened areas without sanitation system and proper sewerage system.

The environmental condition with high potency of pollution because of domestic wastewater pushed the development of Community-Based Sewerage System with Tangki AG. This activity is important to support community culture to live in clean, beauty and prosperous environment. Community-Based Sewerage System with Tangki AG could decrease BOD value from 202 mg/L to 60 mg/L and COD value from 331 mg/L to 120 mg/L.

Community participation is seemed in the implementation of Community-Based Sewerage System with Tangki AG. The community have role as the subject in planning, development, operation and maintenance of the facilities. Active participation from the community improves community function as control to the development activity executed by the government so that the development would run well and useful for the environment and the community itself.

The initiator of Community-Based Sewerage System with Tangki AG in Tlogomas Malang was one of community members who concerned to his environment. Furthermore, this system was implemented in Bandung City. In Kelurahan Batununggal, like Tlogomas, diarrhea occurrences were also high and became dead cause as the result of poor sanitation system. This accident became accelerator that moving community in Kelurahan Batununggal to claim rehabilitation of sanitation facilities. Then, it was continued by the implementation of West Java Provincial Government program, which was implementing Tangki AG technology, as the effort to rehabilitate river in West Java, especially Cikapundung River.

Community participation in operation and maintenance of Community-Based Sewerage System with Tangki AG was showed by doing flushing once in a week, paying maintenance fee each month, checking and cleaning the facilities together. On the other hand, there is a high awareness from the community to ensure wastewater supply to the installation without disposing plastic or other materials that able to bother the process.

One of the purposes of Community-Based Sewerage System with Tangki AG is to improve economic ability of the rural community. Besides has function as wastewater treatment, this facilities also has economic function that could improve economic level of the family. After passing the last chamber, domestic wastewater has been clean and could be used as lele (a species of consumable fish) pond, while after passing the first chamber, it could be used as fertilizer.

REFERENCES

1. ADB. (2000). *Gender Checklist on Water Supply and Sanitation Projects*, Asian Development Bank, Manila.

2. Foley S., Soedjarwo A. and Pollard R. (2000). *Of the people, by the people, for the people: Community-Based Sewer Systems in Malang, Indonesia*. Available in the website: www.waspola.org (October 2006).
3. HSRID. (2004). *Domestic Wastewater Treatment System : A success story in Desa Tlogomas, Malang*, Human Settlement and Regional Infrastructure Department, Indonesia.