

## Summary Description of Waste Water Treatment Plant



Managed by the Bangkok Metropolitan Administration in Bangkok city, the Dindaeng Water Environment Control Plant operates a combined wastewater collection and treatment system with screening and grit removal, biological activated sludge with nutrient removal, and final clarification.

The 27,200 sq meter plant was established in the late 1990s and serves a 37 square kilometer area of Bangkok city, with 63km of sewer collection pipes. As the largest of 7 wastewater plants in the city, it was designed to collect and treat wastewater from the communities of eight districts that together have a population of 1.08 million people.

Once treated, 95% of the water is released into seven canals that ultimately flow into the Chao Phaya River as well as the Klong (Klong means canal) Sam Sen and Makkasan Ponds. The other 5% of treated water is reused for irrigation, gardening or other municipal purposes. Upon release, 90 % of the pollution load has been removed.



Privately operated by Utility Business Alliances Co. Ltd., the Dindaeng facility has a treatment capacity of 350,000 m<sup>3</sup> per day. All seven plants combined can treat only 40% of wastewater generated due to limited plant capacity to handle both wastewater and storm water runoff. During the wet season the river's flow is twenty times that of the dry season, causing a vast seasonal fluctuation in the pressure on the wastewater treatment system because of the stormwater flow.

## Scenario

USAID has been approached by the Government and private investors for support and has decided to provide funding to expand the 30 year old, government-owned Wastewater Treatment Plant in the city of Song Khla, in southern Thailand, which will be privatized after expansion and upgrade.

At present, this plant is very much similar in size as the Dindaeng Waste Water Environment Control Plant that participants will see in the field today, and conducts similar treatment activities. As the largest of 4 other water treatment plants in Yala, it holds a full treatment capacity of 200,000 m<sup>3</sup> per day but still stops short of being able to serve the fifteen enviroining districts that now depend on it for waste water treatment. This is because it was designed to collect and treat wastewater from ten districts and targeted 500,000 people, instead of the 1.0 million inhabitants it now serves.

Expansion and upgrade plans include doubling the size and capacity of the plant, and introducing more efficient and environmentally friendly technologies. This will mean building increasing the total size of the plant to 50,000 sq meters and installing 65 additional kilometers of sewer collection lines. It will also enable the wastewater management needs of the local populations from the fifteen districts to be finally met.

Some aspects to take into consideration when implementing such an expansion project may include:

- Wastewater treatment systems and associated infrastructure
- General concerns ♣ site selection, earthquakes and floods ♣ construction of buildings and structures
- Treatment ♣ system design & technology used, sludge management, use in agri/aquaculture, use of pesticides, energy consumption
- Social concerns and environmental liabilities

Based on your field observations during the site visit at the Dindaeng Wastewater Environment Control Plant, what do you think would be the environmental and social impacts of doubling the size and capacity of such a plant, as the scenario above proposes? What would be USAID environmental compliance process triggered by proposed activities? What would be some mitigation and monitoring measures that USAID implementing partners would have to take in order to prevent or attenuate these impacts? Please use the EMMP template (provided) to assist you and structure your discussion.

#### HOW IT WORKS

