

## Group 2

### 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 decided to expand the 30 year old, government-owned Wastewater Treatment Plant in the city of Song Khla, in southern Thailand. 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 environing 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 plans include doubling the size and capacity of the plant. 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
  - General concerns
    - Site selection
    - Construction of buildings and structures
  - Treatment
    - System design, sludge management, use in agri/aquaculture

Based on your field observations during the site visit at the Dindaeng Wastewater Environment Control Plant, what do you think would be the environmental impacts of doubling the size and capacity of such a plant, as the scenario above proposes? What would be some mitigation 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.