

Smart JAMP(2021) Pre-feasibility Study on the Introduction of an Advanced Sewerage Management System in ASEAN

Category of Issues in the Area



Target Area

- Denpasar City, Bali Province, Republic of Indonesia

Background and Purpose

- Sewage contains various substances discharged from the human body, including the new coronavirus, and is a valuable source of information that should be called a "record of human activities."
- Social implementation of a system to accumulate and analyze the information obtained from sewage systems will be beneficial in creating new value for sewage systems and promote the construction of smart cities that can respond to various public health risks.
- Bali, whose primary industry is tourism, has been severely damaged by the loss of human flow due to the corona disaster. It is necessary to grasp the infection status in real time in order to provide tourists with timely and appropriate information when the infection spreads.
- This study aims to develop a monitoring system and data platform that utilizes technologies which estimate the prevalence of infection and evaluate health status through the data of new coronaviruses detected in sewage (wastewater-based epidemiology).

Related Organization

- UPTD Wastewater Management (UPTD-PAL)
- Regional Development Planning Agency of Bali Province (Bappeda)
- Bali Health Service (Diskes)
- Department of Public Works, Spatial Planning, Housing and Settlement Areas, Bali (PUPRKIM)

Project Stage

- Pre-feasibility Study

Contents and Results

1. Feasibility study on wastewater-based epidemiology monitoring
 - Investigation of the situation of sewage facilities, their operations, and sewage analysis laboratories in Denpasar was conducted, and it was confirmed that sewage epidemiological monitoring is feasible in Denpasar.
 - Issues that the flow velocity and water quality of sewage affect the accuracy of grasping the infection status were confirmed. It was also confirmed that it is necessary to improve the accuracy by comparing and verifying the detection result and the actual infection status.
2. Development of a prototype information platform
 - The prototype of an information platform was constructed to collect and analyze information extracted from sewage, the number of clinic tests, data on human flows, meteorological data, etc., and to utilize the information for decision-making and information disclosure by the government.

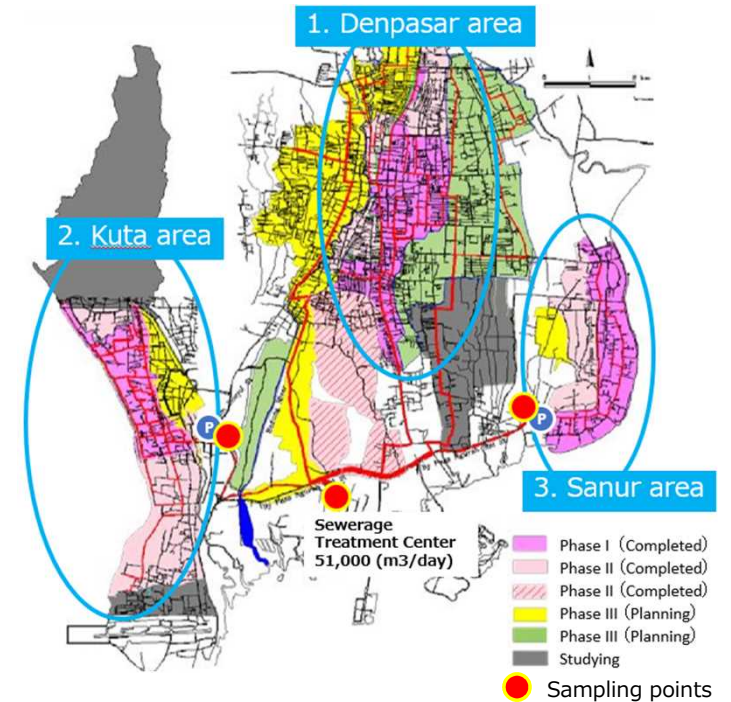


Figure 1: Denpasar Sewerage Development Project area and water sampling points



Figure 2: Situation of wastewater sampling