SOUTHEAST ASIA-EUROPE
JOINT FUNDING SCHEME FOR
RESEARCH AND INNOVATION

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Kasetsart University

Thailand

Nutrient recovery from swine wastewater by photobioreactor and bio-trickling filter

Topic 1

Brokerage Event – 9th Call

03 October 2024

My and my institution's area of expertise

Name: Wilasinee Yoochatchaval

Position: Associate Professor/Head of Department

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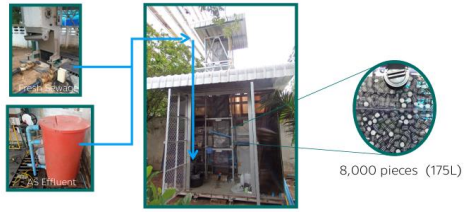
Faculties: Agriculture, Business Administration, Fisheries, Humanities, Forestry, Science, Engineering, Education, Economics, Architecture, Social Sciences, Veterinary Medicine, Agro-Industry, Veterinary Technology, Environment, Medicine, Nurse, Interdisciplinary, Integrated Science, Grad sch., International College

My and my institution's area of expertise

Expertise: Biological wastewater treatment

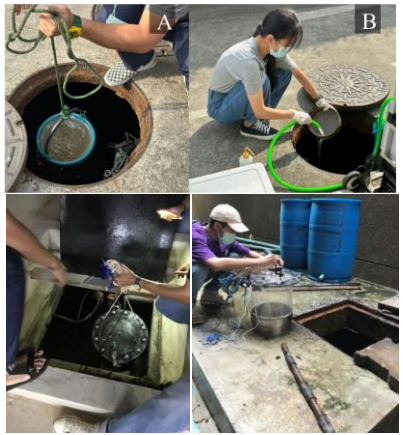
- Biofilter; trickling filter (Down Flow Hanging Sponge) for domestic WW
- Anaerobic treatment technology for industrial WW



DHS reactor for sewage treatment

Expertise: GHG emission from waste and wastewater, Climate-friendly treatment technology for waste and wastewater

- GHG emission from solid waste and wastewater management
- GHG emission reduction policy for the waste and wastewater sector



GHG emission from wastewater

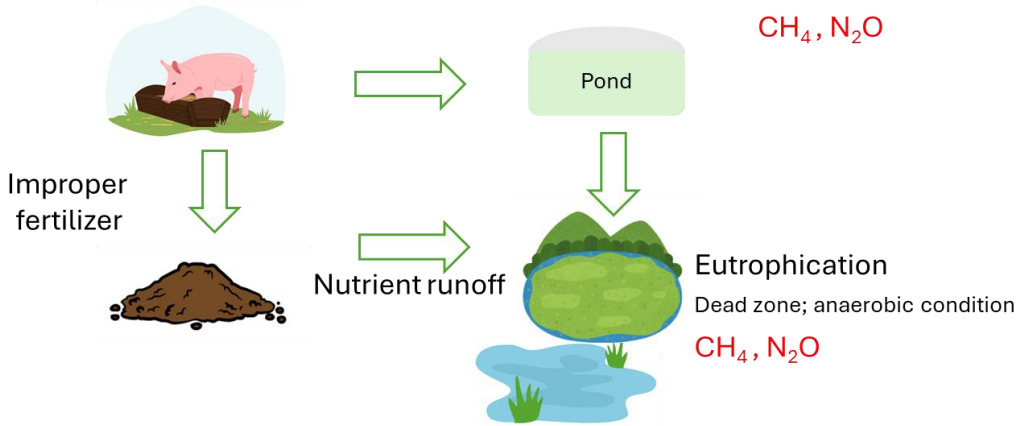
Challenge: Nurient remove/recover and GHG reduction

European Commission

My proposed Research Idea for the 9th JFS Call

Research Question:

- Agro-industrial wastewater contains a high concentration of nutrient (N,P).
- Recovery of nutrients is crucial to environmental pollution and climate-friendly.
- What are the sustainable recovery methods?



Proposed Project Activity: Nutrient recovery by Biological and Physicochemical process

Project Consortium

My organisation: Kasetsart University

Role: Biological treatment of swine wastewater, Nutrient recovery using the photobioreactor (Chlorella sp.), Water reuse by biotrickling filter

To the development of a photo-bioprocess intended to valorize swine leachates and process water as feedstocks for algae production.

(i) Optimizing the design and operation of the reactor
(ii) Identifying the most suitable operating parameters to obtain a stable and satisfactory wastewater treatment efficiency and algae productivity:

Project Consortium

Partners that we are seeking for our project consortium:

Region: Southeast Asia

Expertise: Microalgae, Nutrient recovery

Role: (i) Optimizing the design and operation of the Raceway Ponds

(ii) Identifying the most suitable operating parameters to obtain a stable and satisfactory wastewater treatment efficiency and algae productivity in the Raceway Ponds

Open for more discussion !!!

Region: Europe

Expertise: Microalgae, Nutrient recovery

Role: Psychrophilic condition for microalgae cultivation, biomass utilization