



SOUTHEAST ASIA-EUROPE
JOINT FUNDING SCHEME FOR
RESEARCH AND INNOVATION

Sathaporn Monprapussorn, Ph.D.
Department of Geography, Faculty of
Social Sciences, Srinakharinwirot
University, THAILAND

**Spatial planning of treated wastewater
reuse in agricultural irrigation under
climate change**

Topic 1: Wastewater treatment and reuse

Brokerage Event – 9th Call

03 October 2024



My and my institution's area of expertise

Name: Assistant professor Sathaporn Monprapussorn, Ph.D.

Position: Lecturer

Unit: Department of Geography, Faculty of Social Sciences

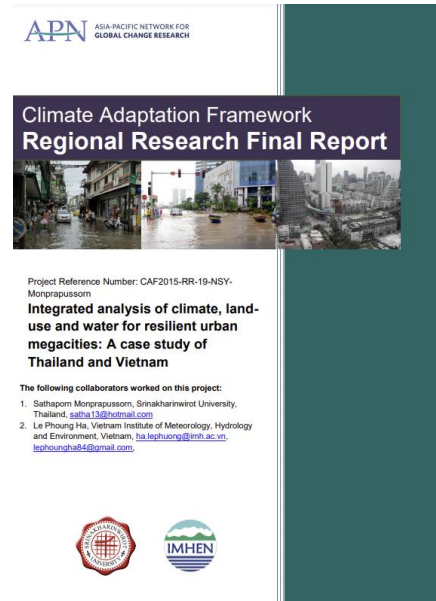
Organisation: Srinakharinwirot University

City: Bangkok

Country: THAILAND

E-Mail: sathaporn@g.swu.ac.th

Expertise: Climate change, spatial analysis water resources, ecosystem,



APN ASIA-PACIFIC NETWORK FOR GLOBAL CHANGE RESEARCH


**Climate Adaptation Framework
Regional Research Final Report**

Project Reference Number: CAF2015-RR-19-NSY-Monprapussorn

Integrated analysis of climate, land-use and water for resilient urban megacities: A case study of Thailand and Vietnam

The following collaborators worked on this project:

1. Sathaporn Monprapussorn, Srinakharinwirot University, Thailand, sath13@hotmail.com
2. Le Phuong Ha, Vietnam Institute of Meteorology, Hydrology and Environment, Vietnam, ha_lephuong@imh.ac.vn, lephuongha4@gmail.com



Rationale

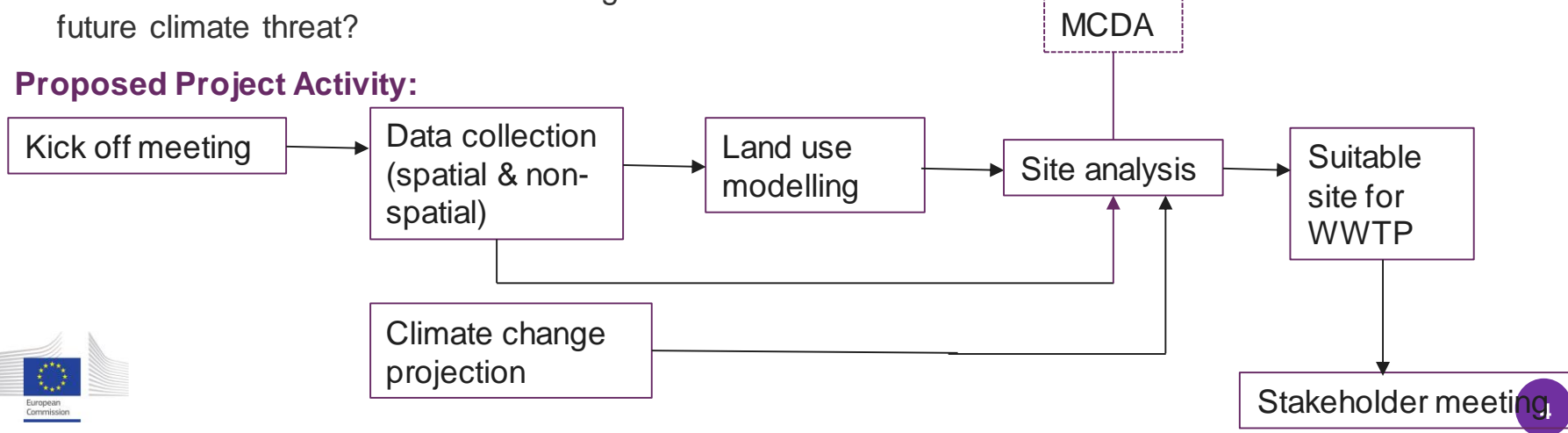
- The government has projected that the average rainfall across Thailand in 2024 will be 24% lower than normal.
- Specifically, the Eastern region experienced a more severe decline of around 60% in 2023.
- Imbalance water supply from increasing water demand.
- Water scarcity from climate change.
- Wastewater reclamation and reuse are challenges and opportunities.
- To satisfy SDG 6, 11, 13 and 15

My proposed Research Idea for the 9th JFS Call

Research Question:

1. Is treated waste water satisfy crop water needs?
2. Does future climate and land use change affect crop water needs /or wastewater reuse capacity?
3. Where is the suitable site for locating WWTP to increase reclamation of wastewater under future climate threat?

Proposed Project Activity:

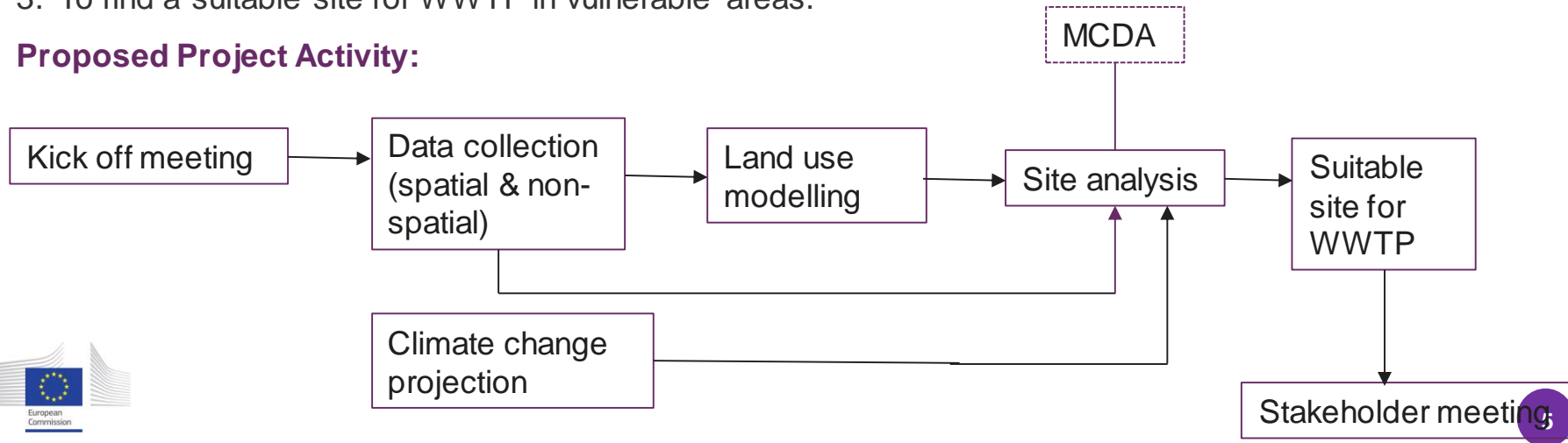


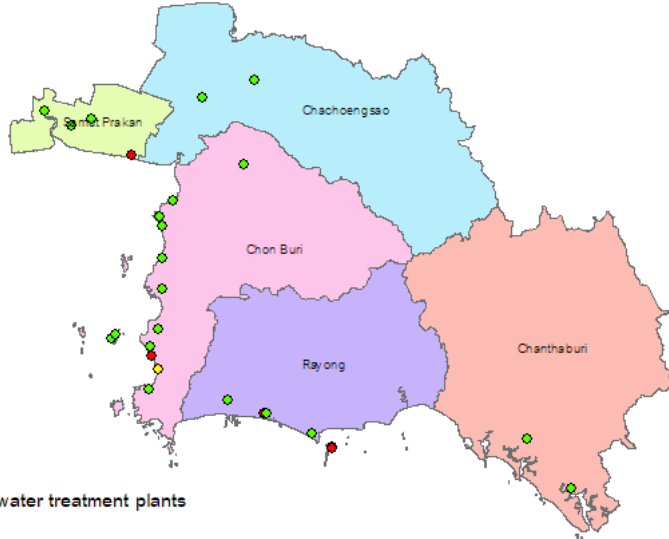
My proposed Research Idea for the 9th JFS Call

Research Question:

1. To assess and identify potential of treated wastewater reuse in agricultural area by using three comparative case studies
2. To model future climate and land use change (scenario based model) in a future (5 to 10 years)
3. To find a suitable site for WWTP in vulnerable areas.

Proposed Project Activity:







Wastewater treatment plants

WWTP

F6

-  CAN
-  NW
-  UN
-  W

0 5 10 20 30 40
 Kilometers

Objective 1

To assess and identify potential of treated wastewater reuse in agricultural area by using three comparative case studies

Objective 2

To model future climate and land use change (scenario based model) both short and long term

Objective 3

To find a suitable site for WWTP in response to climate change

My proposed Research Idea for the 9th JFS Call

Proposed Research Activity: Only if required, additional slide about Activity

1. Case study in each country will be selected during proposal development.
2. Spatial and non-spatial data collection (LULC, DEM, Geology, Groundwater depth, road, surface water, populated zone)
3. Climate projection (2020-2040) to get future temperature and rainfall data
4. Land use projection to get short and long term land use change (5 – 10 years)
5. Using MCDA technique (AHP) to find suitable site under climate and land use (water demand) change.

Project Consortium



My organisation: Srinakharinwirot University

Role: Handling project management aspects, coordinating with partners in term of research planning, meeting (on-site and on-line), allocating budget, etc.

Further existing partners (if any):

Partner 1: Institute for circular economy development (ICED), Vietnam National University – Ho Chi Minh City (VNU-HCM)

Expertise: Circular economy, water resource management

Role: Selecting case study and conducting research in Vietnam

Partner 2: Looking for (European country)

Expertise: Geospatial technique, wastewater chemistry

Role: Selecting case study and conducting research in their country

Project Consortium

Partners that we are seeking for our project consortium:

Region: Europe

Expertise: Description of Expertise

Role: Description of Role