



Developing rivers and fisheries

In the Kingdom of Thailand



- In 1902, the Hollanda Irrigation Engineer was hire by Thai Government for irrigation planning
- First Regulator in Thailand was built in 1916 with navigation lock, construct across Pasak River
- Supply water to irrigated area of 680,000 Rai in Central part of Thailand

Rama VI Regulator, Pranakorn Sri Ayudhaya Province



Fish Passage in Thailand



- Typical Fish Passage were applied to Irrigation Structure
 - Ice harbour
 - pool & weir

Freshwater Fishes of Thailand



- 837 Species of Freshwater fishes were recorded
- Status
 - Critical endanger : 18 species
 - Endanger : 42 species
 - Vulnerable : 155 species
 - Near threatened : 20 species

Deterioration of Freshwater Fishes

HELP!

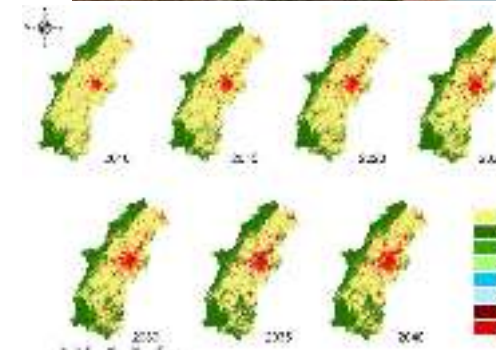
Freshwater fish are in trouble



Barrier Construction

Land-used Change

Over Fishing





Charles Sturt
University

Fish Passage Development timelines in Thailand (Low-head Fish Passage Initiative)



Fish Passage Mapping Workshop
SEAFDEC



Demonstration of Fish Passage
Construction
USAID, US-DOI, ACIAR, AFPS,
SEAFDEC, MRC



Fish Way Monitoring
(Huay Wang Chang)

Field Appraisal for
Barrier Prioritizing
In Thailand
Base on MRC Guideline



Fish Way Monitoring
(Huay Wang Chang)

2018

2019

2020

2021

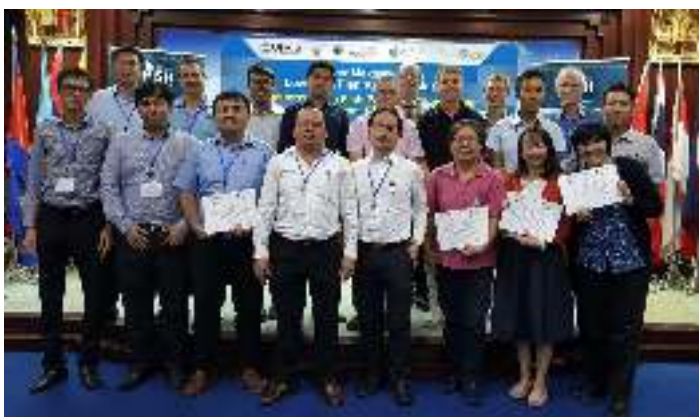
2022

2023

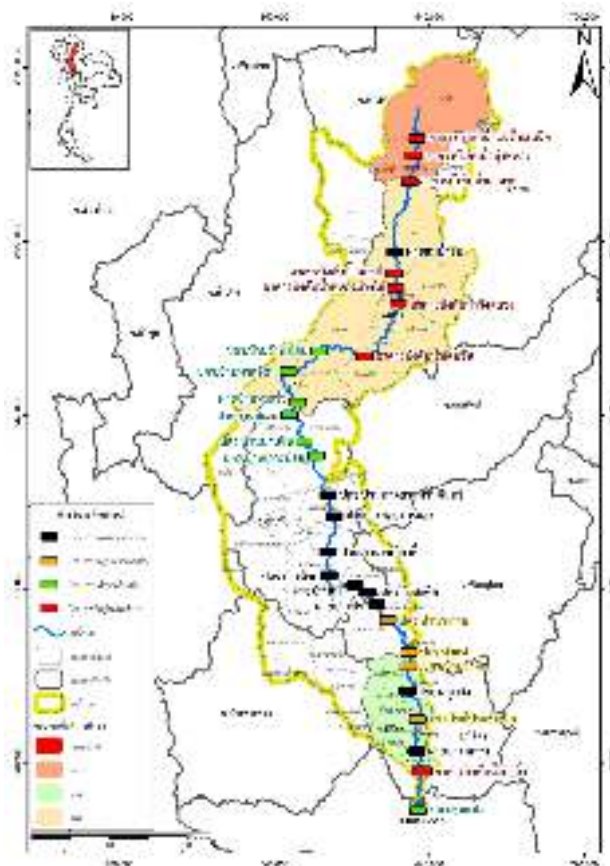
2024

Masterclass in Fish Passage
Prioritizing Workshop
SEAFDEC

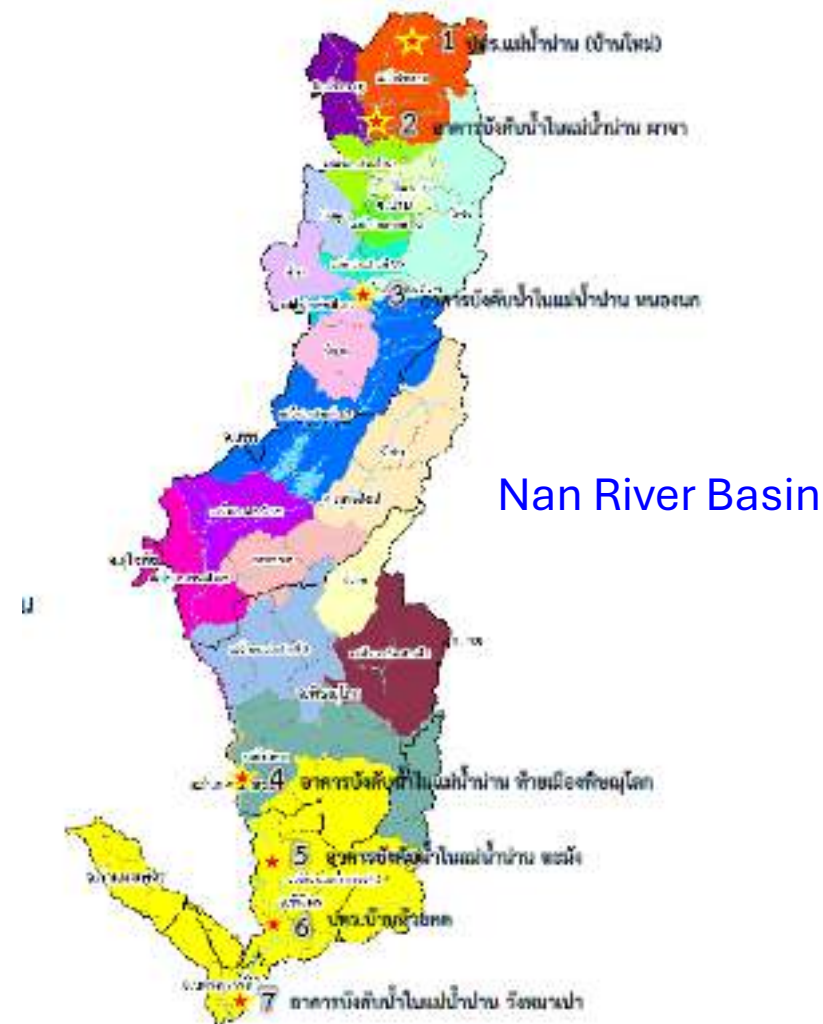
Masterclass in Fish Passage
Workshop
Cambodia, 26-31 Oct, 23



- ❑ The requirement of water development project dramatically increase, especially Regulator



Yom River Basin



Nan River Basin

Thailand Fish Passage Initiative

- ❑ The existing fish passage doesn't work properly, some of them without fish passage



**Had Saphan Chan Regulator
Sukhothai Province**



**Tha Nang Ngam Regulator
Phitsanulok Province**

**Surasawadee Regulator
Sakhon Nakorn Province**





Thailand Fish Passage Initiative



❑ The Fish Passage Initiative Committee is established in 2023

➤ 15 members (RID 10, DOF 5)

➤ Objective

- Scope fish passage initiative framework
- Proceed the framework
- Report the outcome to the Thai-Australian Co-operation Chair-Person





2. Road Map in Details



Proposed activities and Timeframe

Jan 2024-Jul 2025)

No.	Activity	Outputs/ Milestones	Due date of output/ milestone	Applications of outputs
1	Fish passage study tour in Australia	Visit by members of the FishTech team to Australia	Apr 2024	Visit by Thai team, and other FishTech partners, will assist with team dynamics but also allow connections to the broader FishTech team
2	Kick-off meeting	Meeting report and identification of pilot location	May 2024	Establishing team relationships and Australian team becomes familiar with study locations
3	Thai masterclass with RID and DOF	Masterclass completed with draft pilot design agreed to by participants	Jul 2024	Upskilled staff in irrigation and fisheries disciplines Thai-specific designs are developed
4	Design and construct pilot demonstration site	Thai RID team facilitates implementation of pilot site	Sep 2024 – Feb 2025	Pilot site selected close to Bangkok which is in close proximity to policy and decision makers
5	Research / Monitoring and Evaluation	Analysis on effectiveness of the intervention	Apr 2025 – Jun 2025	Proof of concept demonstrated in a scientific sense. Evidence-based policy and decision making
6	Final report to DFAT	Final report drafted and submitted to DFAT	Jun 2025	As required by DFAT

Additional item: **Fish Passage Guideline for Thailand *****



3. Study visit in Australia



❑ 6 Delegates attended the study tour in Australia 10-15 June, 2024



Yarrowonga



Stevens Weir



Stevens Weir



Gunbower Creek



Cohuna Weir



Torrumbarry Weir



Hum Dam



Ovens Weir



Penrith Weir



Parramatta



4. Fish Passage Investigation in Thailand

❑ The investigation of existing fish passage in Yom River Basin, Thailand



Had Saphan Chan Regulator
Sukhothai Province



Klong Krajong Rubber Weir
Sukhothai Province



Tha Hae Regulator
Phijit Province



Tha Nang Ngam Regulator
Phitsanulok Province

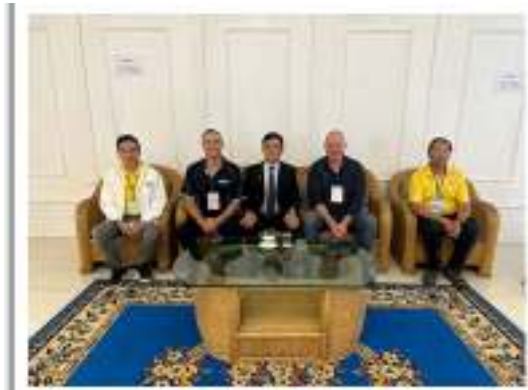


Sam Nyam
Flapped Gate
Phijit Province



4. Masterclass in Thailand

- ❑ The Masterclass is helded between 7-10 October,2023 in Sakhon Nakorn Province, Thailand (54 Participants RID 30, DOF 24)



❑ The fish passage concept design training





4. The best practice in Thailand



Demonstration Fishways: Learning Laboratories

Thailand's Fishway



TIWARAT THALERNGKIETLEELA

DEPARTMENT OF FISHERIES, THAILAND

Huai Wang Chang Fishway

“ **The Lower Mekong Fish Passage Initiative Project**” has implemented in collaboration with the US DOI/ ACIAR/ MRC / DOF Thailand and SEAFDEC in 2018

- ❑ The Huai Wang Chang boarded weir has been selected for fish passage demonstration in the river system according to the site selected criteria as Estimated construction cost, Site access, Feasibility of community to participate in fish passage management Local community agree to constructed the fish passage.
- ❑ The construction was started on December 2019 and completed on April 2020

Huay Wang Chang Weir



Location of demonstration fishway



Fishway Construction

December 2019



February 2020



January 2020



March 2020



APRIL 2020



OCTOBER 2020



Monitoring

- ❖ DOF and MRC monitored the fishway in 2023 and 2024
- ❖ Found 32-38 species migrated past the fishway
- ❖ Most of the fish was found ready to spawn in the early rainy season



What did you learn that will help you with future fish passes?

- IDENTIFYING POTENTIAL BARRIERS
- PRIORITIZATION
- FISHWAY DESIGN AND CONSTRUCTION
- MONITORING



Achievements and New Knowledge

- Meetings with communities to clarify the project and address public concerns of stakeholder in the construction area.
- Identified knowledge gaps and future research priorities which are necessary to help to rehabilitate degraded fisheries and improve the economic livelihood of river communities throughout Thailand.
- The major outcome arising from this work is that the prioritization, design, construction, and monitoring process successfully used in the Huai Luang River Basin will guide practitioners across Thailand, in the rehabilitation of rivers and wetlands which that provide food security and income to millions of people



Future plan : Fish Passage Initiative Activities in Thailand

Perfection

Demonstration

Expansion

- ❖ Huai Wang Chang Fishway could be the demonstration site for fishway awareness and educate people about the potential impact of water infrastructure development to fisheries resources and the use of fishway as a possible mitigation tool.
- ❖ Extending the low cost fishway installation should be initiated in local area due to it costs low budget for construction which can be allocated by the Local Administrative Organization
- ❖ Collaborate with RID to design fish passages in important fisheries area.

