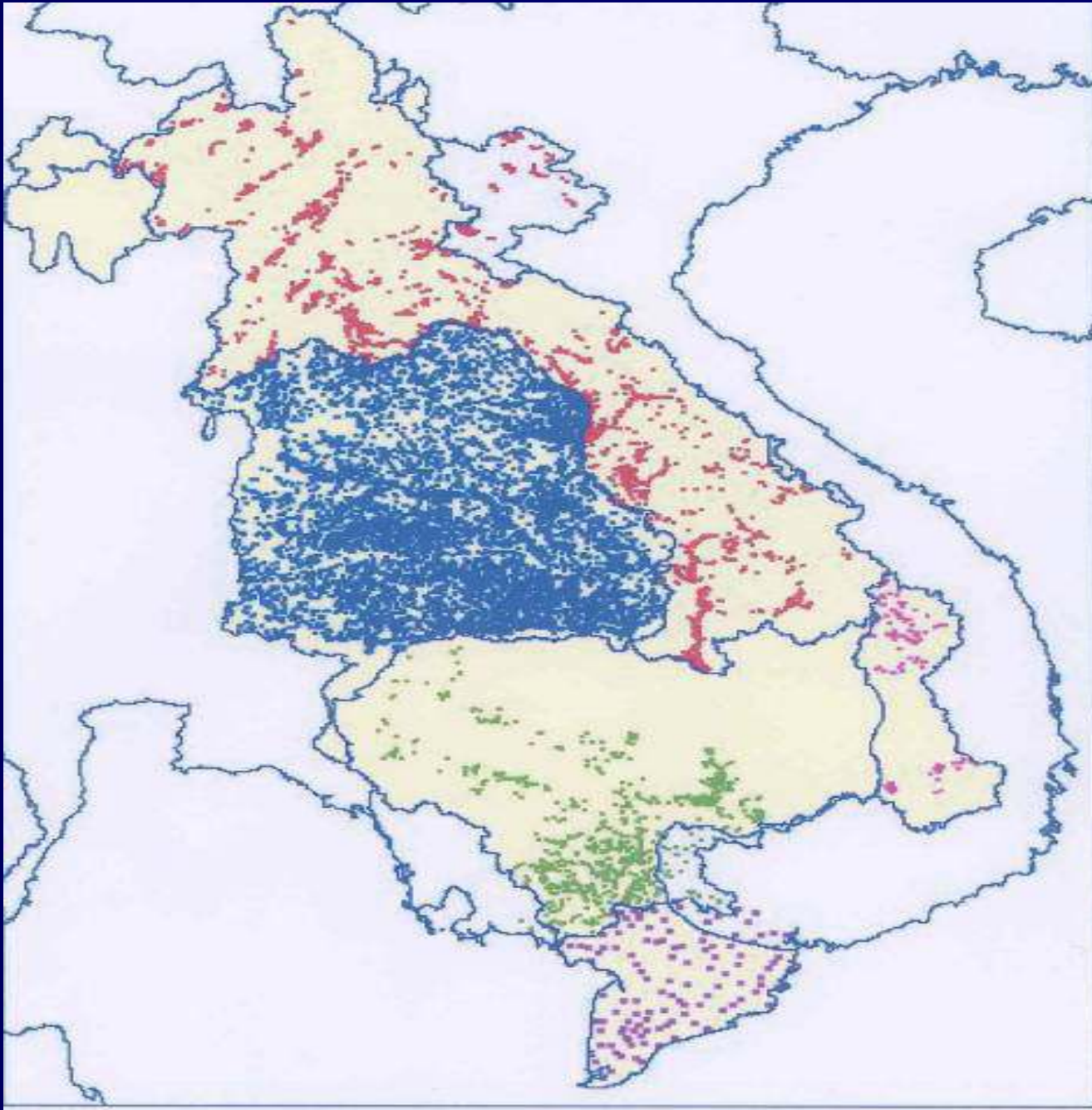




Fish Passage in Lao PDR

- not just fish, water and concrete

**Dr Oudom Phonekhampeng National
University of Laos**

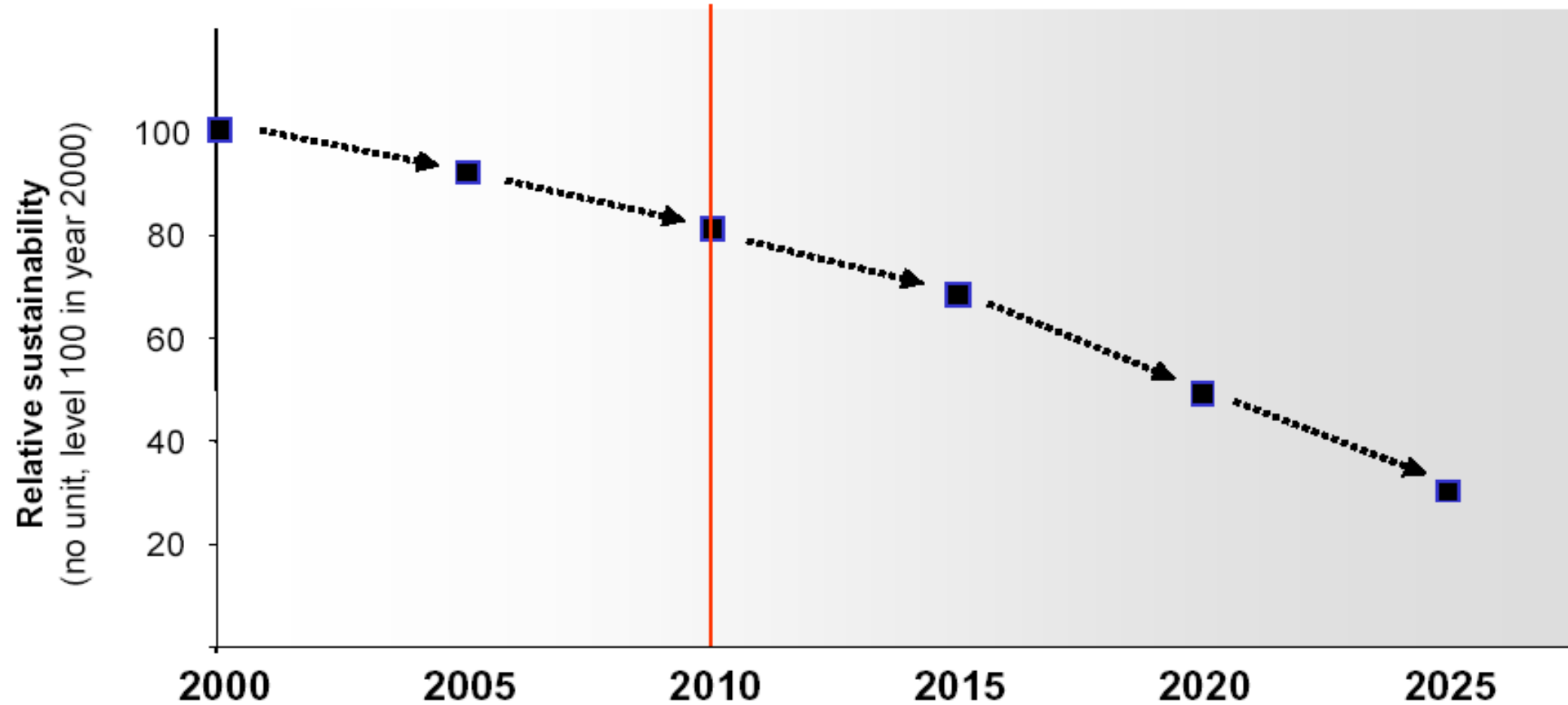


**The problem in
the early 2000's?**

**Thousands of migration
barriers Throughout the
Lower Mekong
Basin**

**Lots of barriers and no way
for fish to get past them**

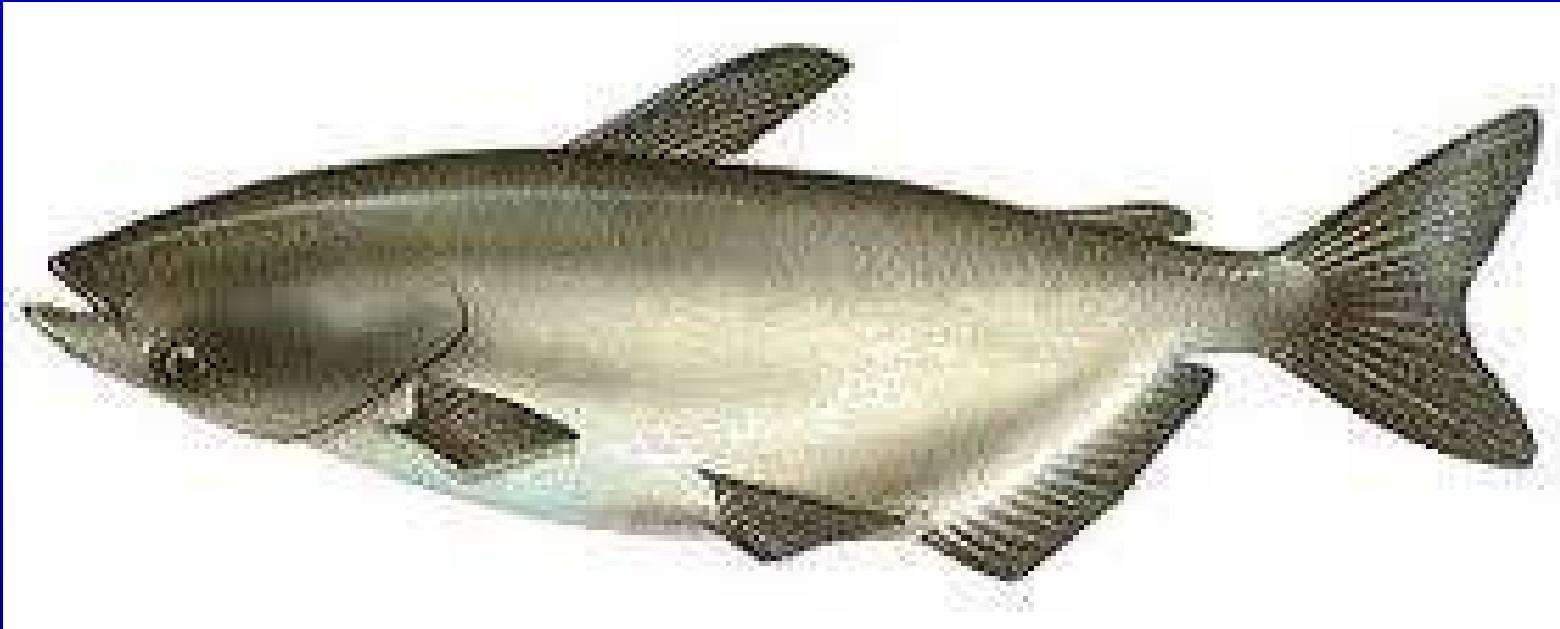
Relative sustainability



Capture fish production is expected to decline in the future ***even in the absence of mainstream dams***

A big challenge.....

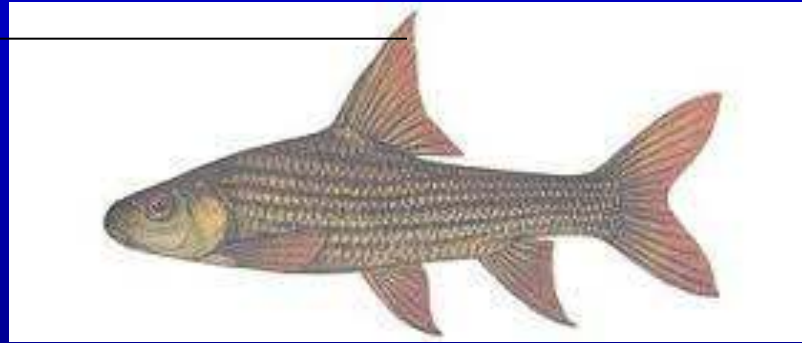
2000mm



30mm

Many different sizes and swimming abilities!

A big challenge.....so focus on
floodplain fish initially



600mm



30mm

Smaller size range of fish attempting to
access floodplain habitat.

Phase 1 Proof of Concept - can Lao fish
use fishways

Laboratory Approach



Fish do not always cooperate!







In the field, fish are actively migrating, much higher catches and many more species



We used a
field
approach



Most abundant species

Species name		Ecology	Control	100mm	200mm	Grand Total
1. <i>Parambassis siamensis</i>		Grey	819	1948	510	3277
2. <i>Barbonymus gonionotus</i>		White	160	1552	1494	3206
3. <i>Rasbora dusonensis</i>		Black	1	1567	1057	2625
4. <i>Barbonymus schwanenfeldii</i>		White	0	651	9	660
5. <i>Hampala dispar</i>		White	277	249	56	582
6. <i>Rasbora rubrodorsalis</i>		Black	252	248	81	581
7. <i>Xenentodon cancilla</i>		White	406	136	17	559
8. <i>Rasbora daniconius</i>		Black	28	303	169	500
9. <i>Paralaubuca typus</i>		White	62	262	24	348

Total Catch = 14,800 fish from 107 species collected in 168 hours sampling (over 21 days)

Next step - build and assess full sized fishway



Fishway Assessment - compare top to bottom species

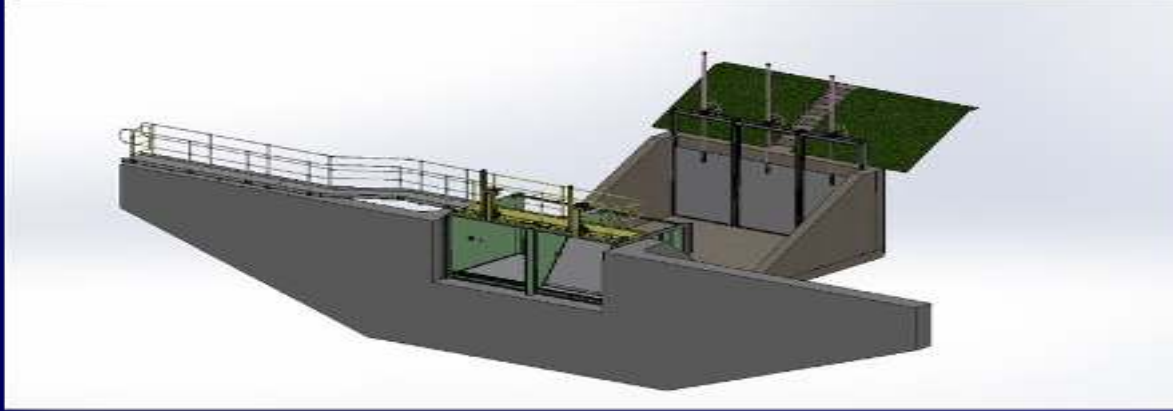


Over 100 species, including over 7 catfish species and probarbus, snakehead, chitala and other important species

Also educating staff during fieldwork



Upgrade existing gates and compare injury mortality rates



Achievements so far.....

- 1. Have performed biological assessments of four fishway designs**
- 2. Have raised awareness of fish passage issues at floodplain regulators**
- 3. Results have been accepted by international scientists**
- 4. Fishway design criteria is now being based on swimming ability of Mekong species....very important step!**



National
University of
Laos



Department of Agriculture and Forestry
(Dept. Irrigation and Dept. Livestock and Fisheries)

Phase 2 (2018 to 2025)

FishTech in Lao PDR – Lao need to learn how to design fishways and build demonstration sites as examples of how to build future fishways



Floodgates dominate floodplain/Mekong interface

Built to protect large rural and urban areas

Usually very high = expensive to built
fishways on them



Examples of
floodgates
around
Vientiane



- (approx.10,000 rural households upstream)
- 1hr drive from Vientiane
- ADB managed, with Netherlands funding, project to build fishway
- FishTech Team conducted Masterclass and provided concept plan and assistance with detailed plan
- The Team is also assisting LNMC Fish Passage Working Group to assess fishway effectiveness and socio-economic benefit
- Regularly used as a demonstration site by GoL agencies and MRC

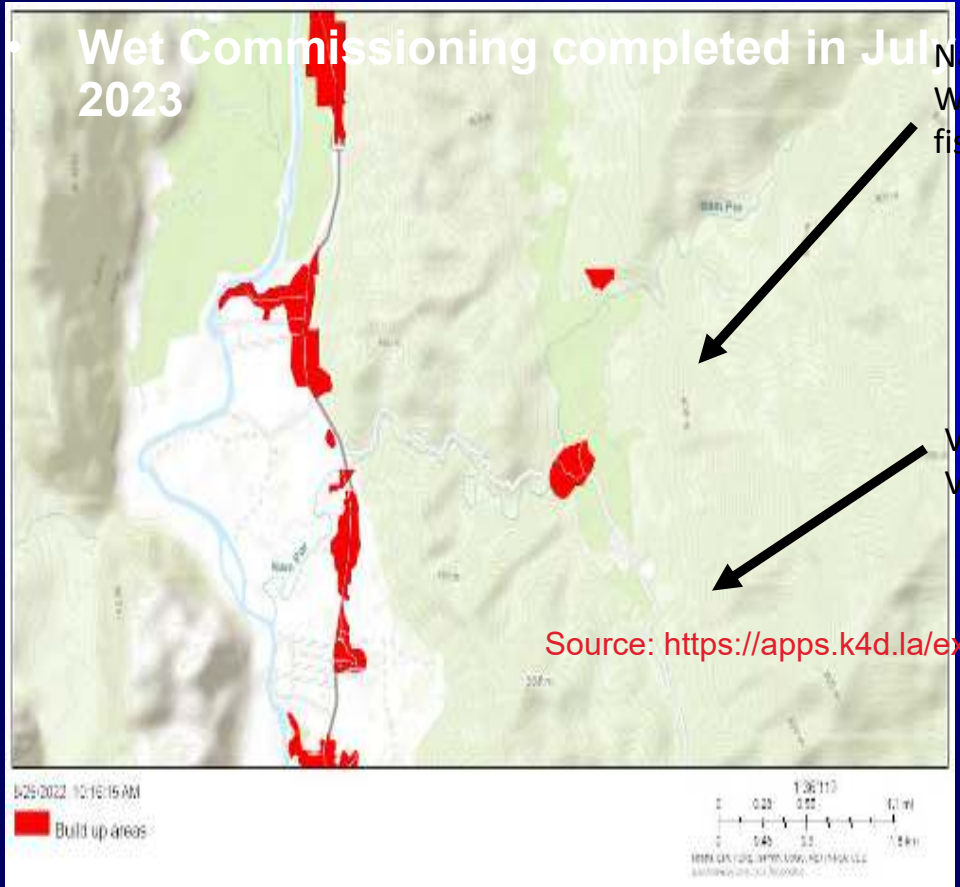


Alternative areas for FishTech Demonstrations Sites

- Vang Vieng within 1 hours drive from Vientiane
- No floodgates, but lots of irrigation schemes

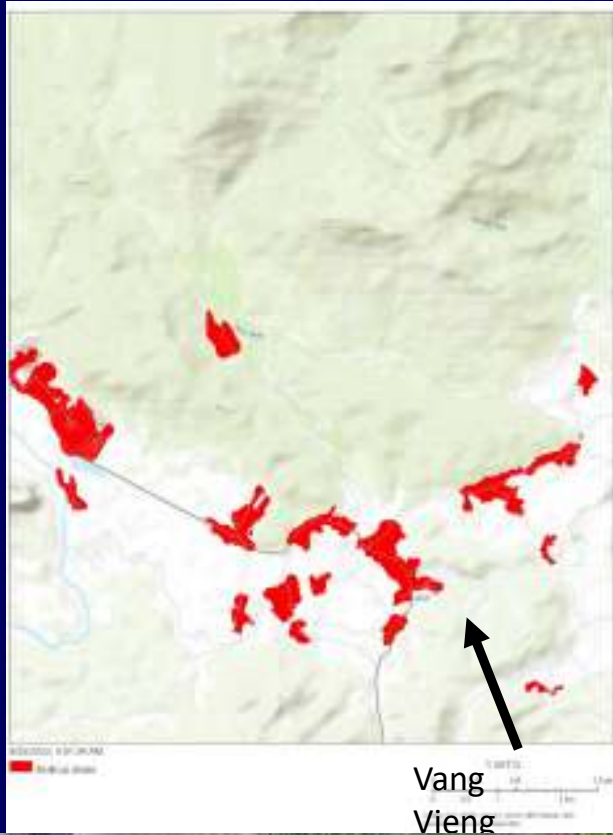


- Masterclass completed in Sept 2022
- Construction completed in June 2023
- Opening and handover to Province in July 2023



Nam Mone Fishway

- Masterclass completed in Sept 2022
- Construction completed in May 2024
- Opening and handover to Province in July 2024
- Wet Commissioning completed in 2024



Nam Kuang 2 Fishway

- Masterclass completed in Sept 2022
- Construction completed in May 2024
- Opening and handover to Province in July 2024
- Wet Commissioning completed in 2024



Note: This site is in a cascade of barriers on the Nam Kuang and the immediate benefits of restored fish passage at this site will be limited by that cascade. However, the Japanese Embassy in Lao requested the FishTech Team to assist with a fishway design for the next major barrier upstream and are currently seeking funds to build it in 2025.

Uptake by others:

In addition to the Japanese building their own demonstration site in Vang Vieng.

ADB have 2 irrigation development projects in Lao PDR:

1. One project currently underway in the 4 Northern Provinces of Lao where 14 fishways are being planned, and
2. One about to start in the provinces just south of Vientiane where 3 fishways are being planned



Summary of achievements so far

On-track to complete all project tasks

5 demonstration fishways completed

Spending within budget – construction budget 100% spent

Official openings by 2 Australian Ambassadors

Passing fish as per design criteria

Demonstration sites in use (by GoL, MRC, ADB, Local and International Visitors etc.)

What is working well

Partnership between NUOL, DOI and DLF (high level of cooperation)

Opportunities for overseas professional development courses

International technical assistance to local partners (timely and comprehensive)

Learning by doing (training of project staff across 2 Ministries)

Learning by showing (local and international stakeholders and the wider community)

Engaging women in what traditionally has been seen as a male dominated occupation
(3 out of 4 rising stars in the project are women)

What we need to improve (continue)

1. Capacity development within other agencies (MONRE, Water Resources, Public Works and Roads, Lao Women's Union etc.)
2. Raising awareness across whole of government and community (user-friendly promotion tools like videos, posters and social media)
3. Curriculum development in Lao Language (including other faculties within NUOL and Irrigation Colleges)
4. Integrating fish passage within wider river health issues (environmental flows, water quality, habitat protection and rehabilitation etc.)
5. Cost-benefit studies that capture more than number/kg of fish passed (health values, livelihood value and resilience following stress/shocks etc)
6. Gender and generation roles in managing all of the above

Thank You

Lao PDR FishTech Team:

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