2nd Lower Mekong Fish Passage Conference 2025

Fisheries challenges and opportunities in Cambodia

- Inland Fisheries Research and Development Institute, Fisheries Administration (MAFF)
- Presented By: Chann Aun Tob

- February 5th, 2025

Project: ACIAR-Fisheries Technology In South East Asia

- **Project Duration: 2021-2025**

(1) Critical Knowledge Gaps

(2) Motivations of Fishway River Development

(3) Scientific

(4) Integrate Gender Equality, Disability and Social Inclusion (GEDSI)

Outcome: Improved River & Fishery ecosystems

Advancing fish passage technologies and research in South East Asia

(5) Institutional Capacity Needs

(6) Policy Needs

Current situation of fish passage in Cambodia

River	Fish pass location	Type	Design discharge (m^3/s)	Environmental flow (m^3/s)	Status	Responsibility Authorities for Construction
Stung Pursat	Damnak Ampil Weir	Vertical Slot	4.71	Nd	Completed (JICA-MORAM 2019)	MoRAM and JICA Team
	Kbal Hong Weir	Australian Cone	0.02-0.36	Nd	Completed (MAFF-USAID-ACIAR-2019)	IFReDI (FiA)-MAFF, Pursat Adiministraion
	Damnak Choeur Krom	JapaneseHalf cone	Nd	2.17	Under construction (ADB-2019-2020)	MoRAM and ADB
Stung Pursat tributary, Boeung Khnar River	Wat Chre Diversion Weir	Japanese Half cone	>=0.18	>=0.18	Completed (JICA-MORAM-2019)	MoRAM and JICA
Stung Dountri	Dountri Weir	Japanese Half cone	>=0.79	0.79	Completed (JICA 2018-2019)	MoRAM and JICA
Stung Chinit	Stung Chinit Dam	Vertical Slot	0.668	2	Completed (ADB 2007)	MoRAM and ADB
Stung Stoung	Sam Seb Kanha Weir/30 December Weir	Vertical Slot	Nd	Nd	2007	MoRAM ….
Sesan River	Lower Sesan II Hydropower project	Nature-like	Nd	Nd	Completed (Royal Group-China 2017)	Royal Group and MoME
Boribo River	Lum Hach headworks	Japanese Half cone	0.88	0.74 m3/s + 0.14 domestic/industrial	Completed (JICA-MORAM 2019)	MoRAM ADB

Background

Primary Protein Source for 60 Million People

Past Situation of Irrigation System in SE Asia

Regulating water has wide ranging, typically negative impacts on aquatic ecosystems and their biodiversity

Chemical Fertilizer effect on the Environment and fishery

Some positive

Extension of aquatic regimes

Creation of wetlands and habitat

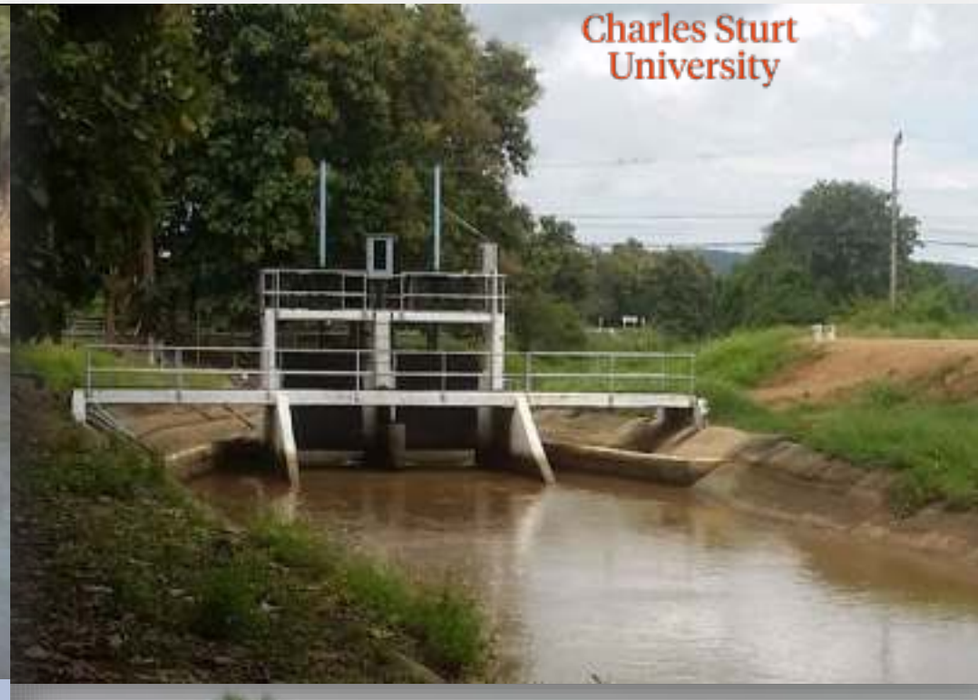
Mostly negative

Obstruction of fish migration and water connectivity

Changes to water flows and the loss of natural habitat.

Disruption of connectivity

Wetland degradation due to expansion of farmland



Structures block fish movement in the wet season as they move through a floodplain or upriver to spawn

Management measures

Hun Sen orders destruction of reservoirs near Tonle Sap lake

The Phnom Penh Post

BY KHOUTH SOPHAK CHAKRYA

07 Apr 10

PRIME Minister Hun Sen has ordered authorities to destroy manmade reservoirs around the Tonle Sap lake and ban farmers from raising crops and animals in the surrounding ecologically sensitive flooded forest areas.

The government last year ordered that all reservoirs surrounding the lake be destroyed, but relented after local farmers pleaded with authorities to allow them to cultivate rice for one more dry season. On Tuesday, Hun Sen ordered authorities to proceed with dismantling any remaining reservoirs.

"Now, it is time for us to recheck these problems and take measures to destroy the water reservoirs," Hun Sen said in a speech Tuesday, the final day of an annual Ministry of Agriculture, Forestry and Fisheries meeting.

Farmers say the reservoirs are needed to irrigate their crops.

Hun Sen acknowledged that a ministry report released Tuesday showed that the reservoirs boosted crop yields, with farmers enjoying a yield of 5 tonnes of rice paddy per hectare this past dry season – the national average is just above 2.6 tonnes per hectare, according to the UN's Food and Agriculture Organisation.

However, the premier said authorities must weigh the short-term gains against longer-term environmental damage. Authorities say the reservoirs impact fish habitats, jeopardising a resource that represents the Kingdom's main source of protein.

"I cannot accept any explanation that will lead the water in the Tonle Sap lake to be become shallow in the future," Hun Sen said.

Water resources have also become an issue for Cambodia and its neighbours along the Mekong River.

Some conservationists have said that dam projects in China are responsible for unusually low water levels this year.

However, Hun Sen, who returned this week from a summit of the Mekong River Commission in Thailand, reiterated the position of Cambodian authorities that the low levels have been caused by "global climate change".

"They should blame the angel or God, not China," Hun Sen said in his speech. ■

The Well-Known Challenge

Existing Hydroelectric Dams Impact Water Quantity, Timing, and Sediment Delivery

Irrigation Scheme, weir, and road also provide negative impact for fisheries resource

Background

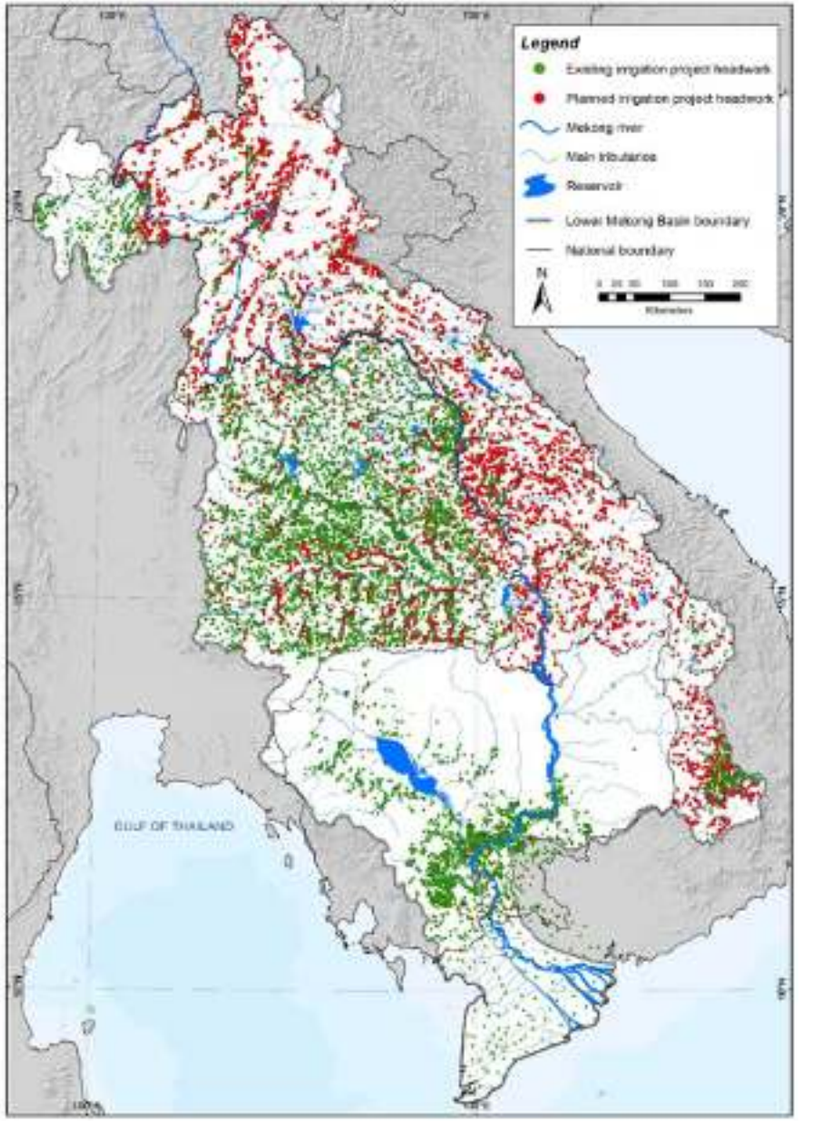
The Mekong Basin is the World's Largest Freshwater Fishery

The Lesser-Known Challenge

Rapid Irrigation Development

The Lesser-Known Challenge

The Scale of the Challenge



The Scientific Rationale for Fish Passage

Fish need to move to complete their life history –spawning, rearing, and surviving dry seasons.

Dams, weirs, roads, and rail can block this movement

Restoring the Tonle Sap Watershed

70% of Cambodia's fish production.

Two million employed.

The Beneficiaries

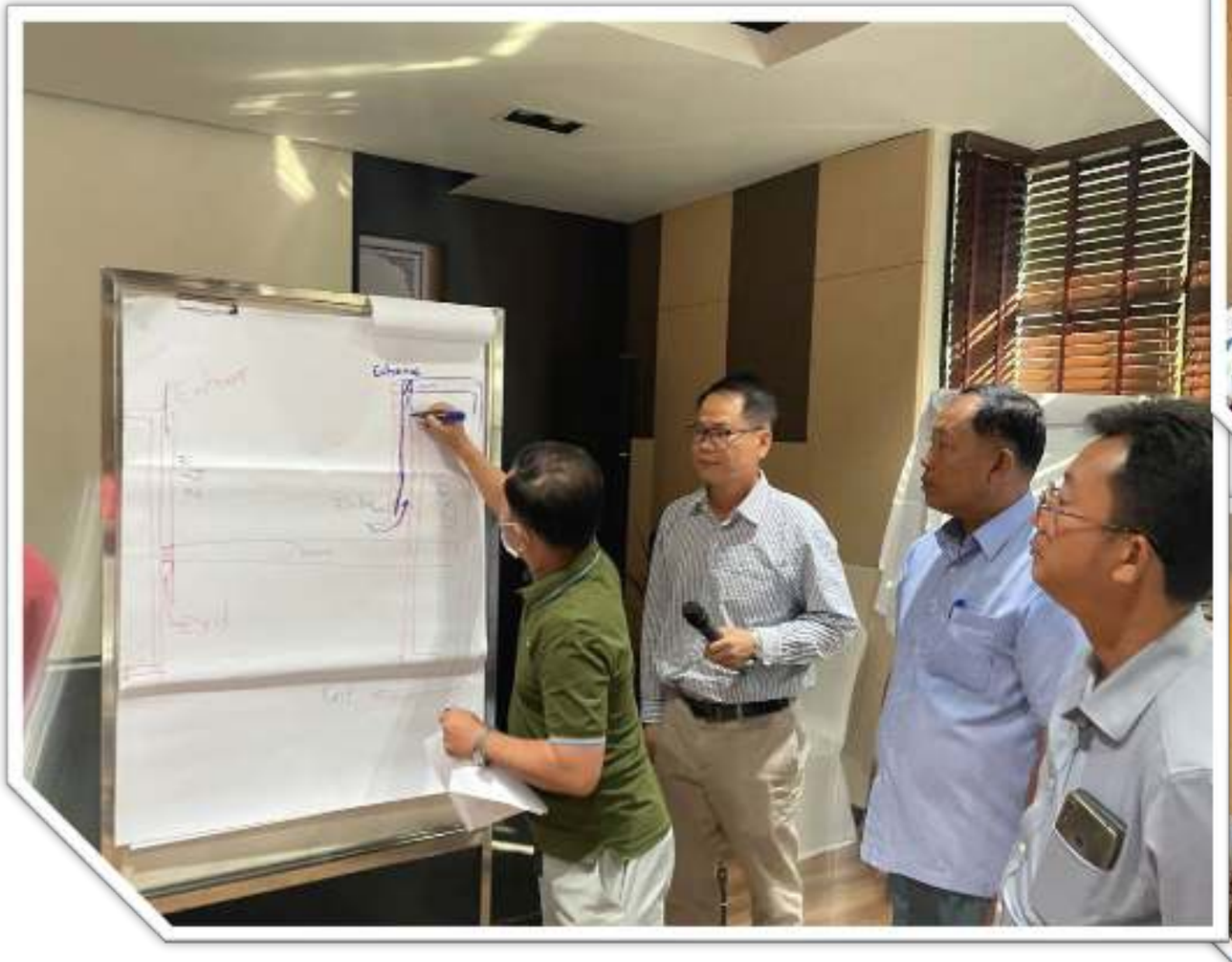
Cambodia FishTech Launch Event

(Held on 30-31 August 2022 at Tribe Hotel Phnom Penh)

Engaging with Demonstration Site of Stung Chhinit Fihsway In Kampong Thom

Opportunity

Masterclass Mentoring and Exercises



ADB, Representative attended in Masterclass, learned important fishway engineering and Fisheries Law (2006); many fishway plan under ADB initiatives

Social and Biological Surveying

FishTech-Students Exchange Viste at Sleng and Kbal Hong Fishway and other fishway passage barriers

On site entrance & Exit fishway mentoring during overflow time; Participants were divided into 2 groups; explaining to why the built fishway need to monitor by multiple agencies; participants observing fish jumping at bottom barrier trying to move upstream but not successfully pass the barrier; fish sapling at fishway indicates fish finding fishway entrance and exit based monitoring protocol

Barrier inventory and Prioritization for Fishway Construction

- ទ្វាទឹកព្រែកកំពីស រាជធានីភ្នំពេញ - PREAEK KAMPUES (Phnom Penh)



- ទ្វាទឹកស្វាយចេក ខេត្តកំពង់ឆ្នាំង - SVAY CHEK (Kampong Chhnang Province)



- ទ្វាទឹកសំណង់សឿ ខេត្តបន្ទាយមានជ័យ - (Pursat Province)



Opportunity of Fishery Recapitalization in Cambodia

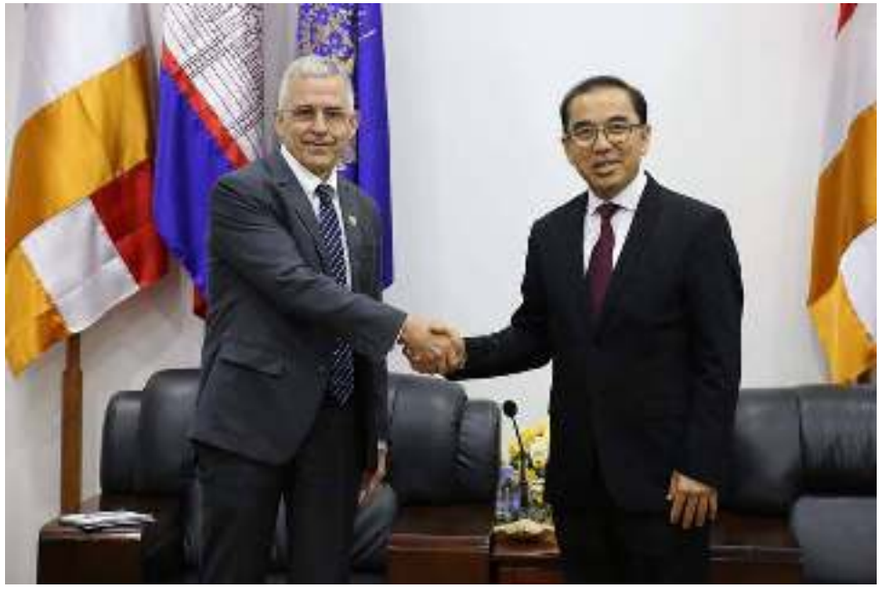
- Building More Fish Passage
- Present finding of prioritize barriers & mapping
- Data presentation of fish migration and social assessment
- Research partnership
- Monitoring Program

Addition and scaling Up Opportunity in Cambodia

- ADB-MoRAM Engagement for Fishway Installation (IWRM 2023-2027)
- Fishway Installation-World Bank: Cambodia Water Security Improvement
- MRC Demonstration Fishway in Lower Mekong Countries 2022-2025
- US Mekong Partnership-Smart Infrastructure Programme
- JICA Irrigation Program
- FAO_Sambou Trey Project

INITIATIVE Supported the revision of the ADB Fishway desing & Construction at Damnak Chheukrom Irrigation Scheme (Stugn Pursat)

USAID-DoI Policy Visit in Cambodia (2019)



- Supports to revision of Fishery Law in Cambodia
- Provides draft framework for fishway construction
- Continues to build 3 fishways
- Supported barriers assessment in 5 provinces
- Promote EU-FAO's participation
- Organised a Sub-national fish passage initiative in Siem Reap

MRC Parntership Engagement

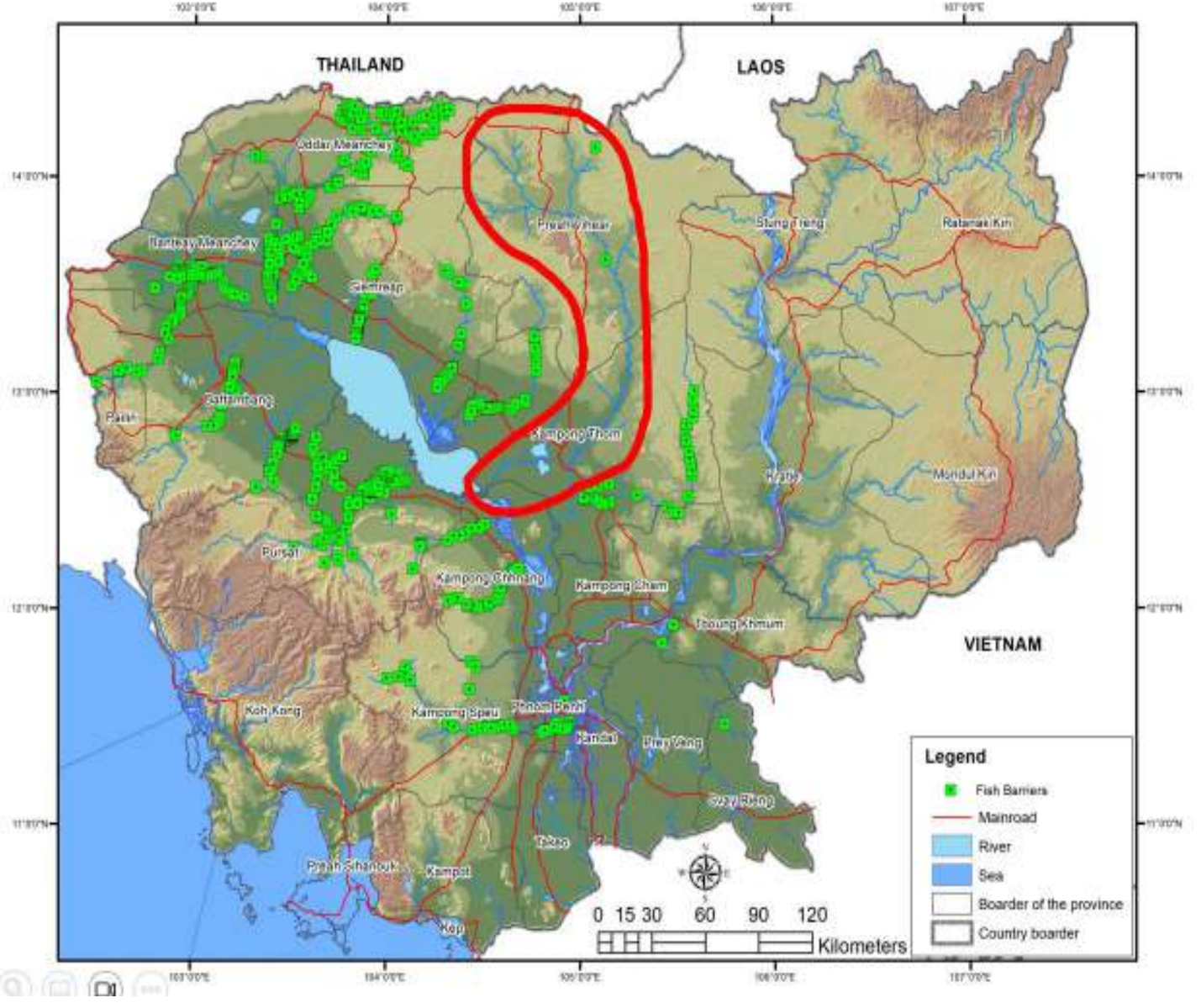
Organized a national consultation meeting supported by MRC

Promotes institutional fish passage planning and research with CNMC & MoRAM

Visited other fishways in Stung Pursat watershed to provide suggesstion to ensure fish can pass the structures


USAID
FISH MOVE TO SURVIVE
The Mekong River is home to more than 100 fish species. Many are valued for food. Others are very rare in Cambodia. Each year these fish move up and down the river to feed, spawn or seek deep pools to survive the dry season. Barriers like this irrigation weir block their journey. The result? Less fish and reduced fishing opportunities.
Map of Stung Pursat Watershed

Inventory of Potential Barriers in Tonle Sap Region updated 2024 (Over 1000 Barriers) –Potential to protect one of the last free (1 barrier) flowing rivers into Tonle Sap



Tonle Sap Lake faces several pressing environmental challenges. The number of dams has been increasing dramatically in the past few decades. The construction of upstream hydropower dams along the Mekong River may disrupt the natural flood-pulse system, reducing nutrient flow and threatening fish populations. These changes disrupt the delicate balance that sustains the lake's biodiversity.

Svay Chek Vertical Slot Fishway Construction Complete – Operations and Monitoring being planned conducted


Dam : Sleng (Cone bottom)
Date: 26/6/2024
Time: (6:30pm-7:30am)
Total weight: 1000g
R: 6


_Dam :Sleng(Cone)
_Date :25/06/24
_Time : 18:30_7:30
_location : Bottom (East)
_R: 6
_Tw :650g

Community forums-surveys at all Fishways (Social-GEDSI)

Participants on Community Forum on Svay Chek	
Male	135
Female	184
Total	319
Disabled: 12 Person