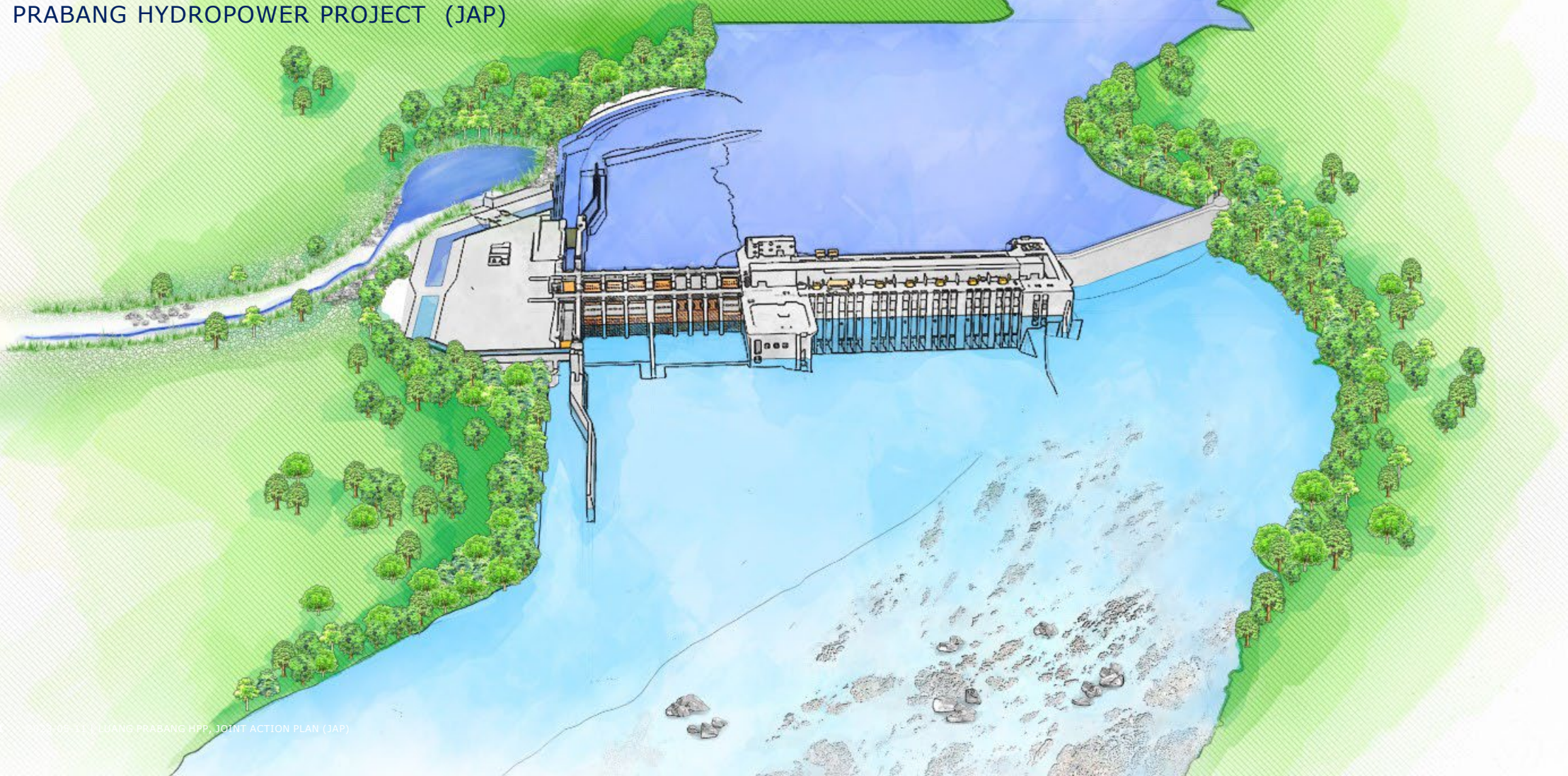


Luang Prabang HPP

JOINT ACTION PLAN FOR THE IMPLEMENTATION OF THE STATEMENT ON THE PRIOR CONSULTATION PROCESS OF THE LUANG PRABANG HYDROPOWER PROJECT (JAP)



Agenda

The background of the slide is a stylized illustration of a dam and river system. The dam is a long, grey structure with a central spillway. The river is depicted in shades of blue, flowing from the top left towards the bottom right. The banks are green with numerous small, circular tree icons. The overall style is clean and modern, with a focus on environmental and infrastructure themes.

Overview

Hydrology and Hydraulics

Preservation of Critical Habitats

Fish Passage Facilities

Dam Safety

Navigation Facilities

Cascade Operating Rules

Joint Action Plan - Overview

Phase 1: Initiation

- Coordination and communication between MRC and the host Country

Phase 2: Project Design

- MRC to work with host Country and its implementing agencies to address issues which may further improve the project's design and later operation

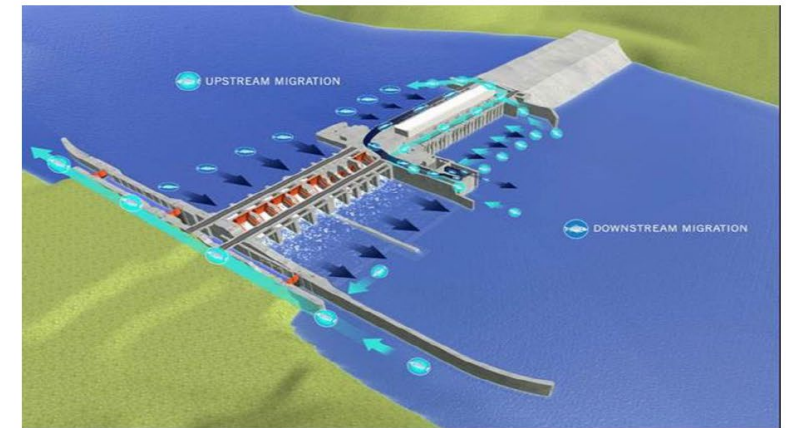
Phase 3: Project Construction (started January 2023)

- Detailed Design development and construction monitoring
- Ongoing environmental monitoring at the construction site (hydrology, sediment, fish etc.)

Phase 4: Operation

- Define set of monitoring and reporting parameters as part of the PWUM
(start January 2030)

Joint Action Plan for the Implementation of the Statement on the Prior Consultation Process of the Luang Prabang Hydropower Project



Mekong River Commission
30 June 2020

Hydrology and Hydraulics

Impact of Climate Change

- Climate change studies have been carried out

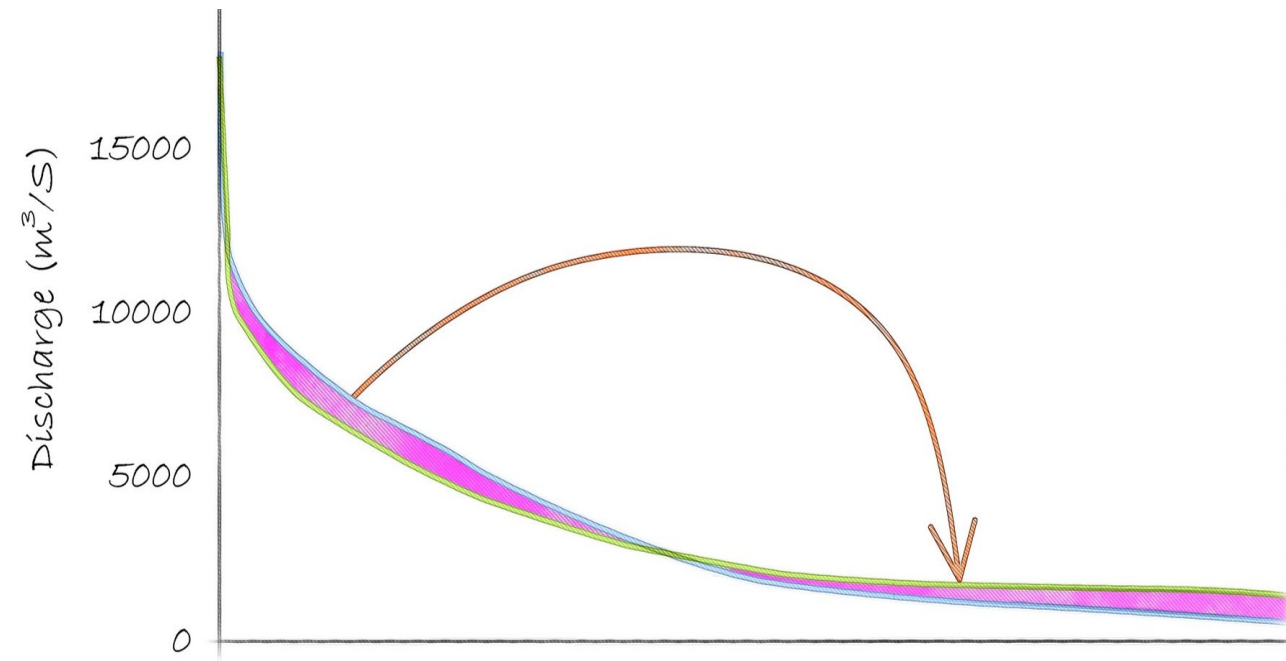
Operation of U/S Dams

- Lancang cascade is implemented in 68-years rainfall-runoff model
- No operation data available from operators in China

Impact of u/s dams on design floods

- Spillway capacity of u/s dam (Pak Beng) is taken into account
- PMF determined without u/s dams (conservative approach)

Flow Duration Curve at Luang Prabang



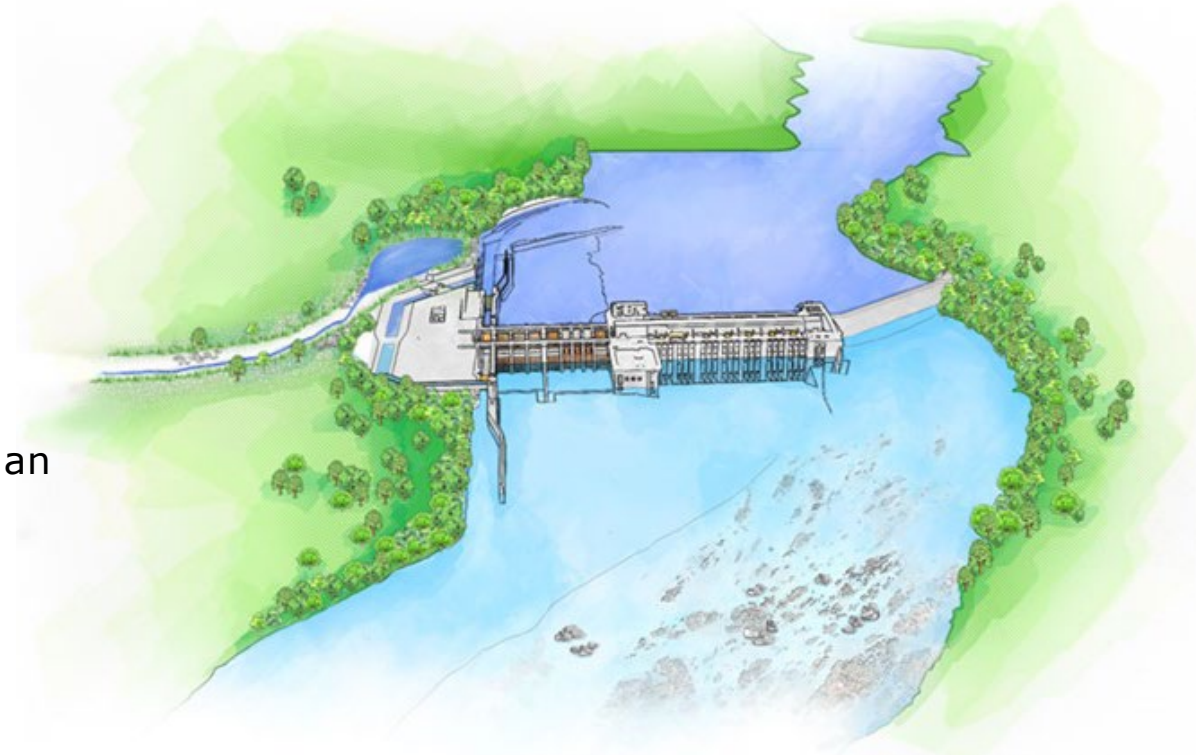
Preservation of Critical Habitats in the Remaining Free-flowing Section of the River

Potential scouring in d/s reach due to reduction of sediments

- Experience from Xayaburi: No significant change in sediment transport expected
- No influence on Nam Ou
- Sediment monitoring system will be established

Measures to protect critical habitat in that area

- Considered in Critical Habitat Assessment
- Mitigation measures implemented in Biodiversity Action Plan
- No construction activities along left bank rock outcrops



Fish Passage Facilities:

Experience from Xayaburi

- Experience and lessons learned are incorporated
- E.g. auxiliary units instead of pumping stations, no vertical slot pass, additional u/s migration on right bank, continuous d/s chute

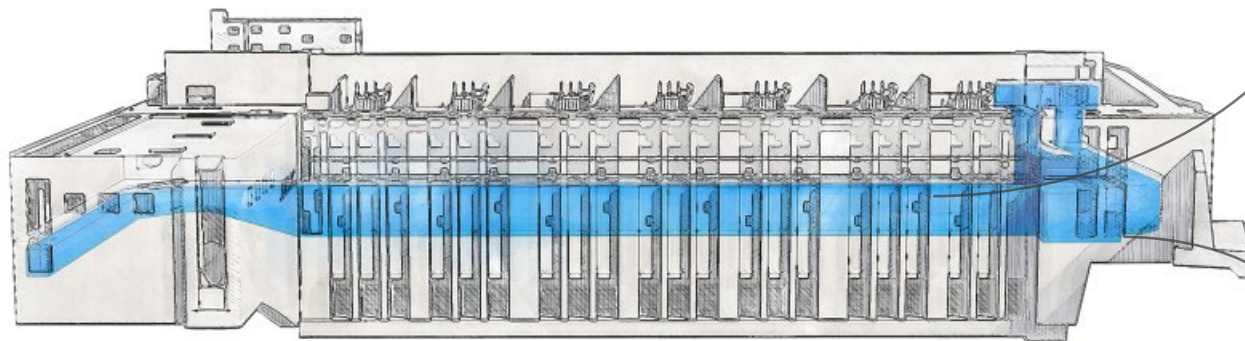
Submergence of entrances

- Considered and implemented, will be submerged even during pronounced low flow seasons

PH entrances above draft tube



Left pier ramp



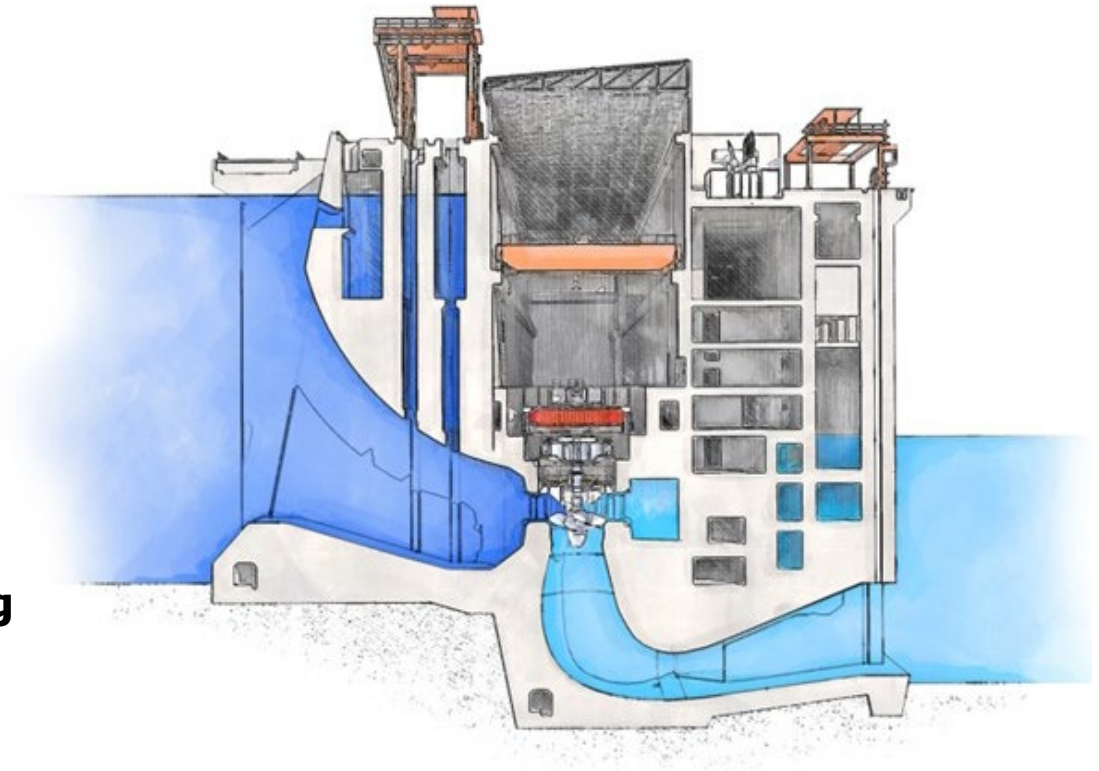
Fish Passage Facilities:

Reduce fish mortality through turbines

- Fish friendly turbines
- Reduced risk of blade strikes (unit size, runner diameter, number of blades, unit speed)
- Reduced shear stresses (min. gaps, no overhanging edges, smooth surfaces)
- Reduced risk of injuries (smooth surface, no sharp edges, turbulences at draft tube)

Practical measures to reduce risk of fish trapping on debris screen

- Still under investigating



Dam Safety Concerns

Dam Safety Review Panel

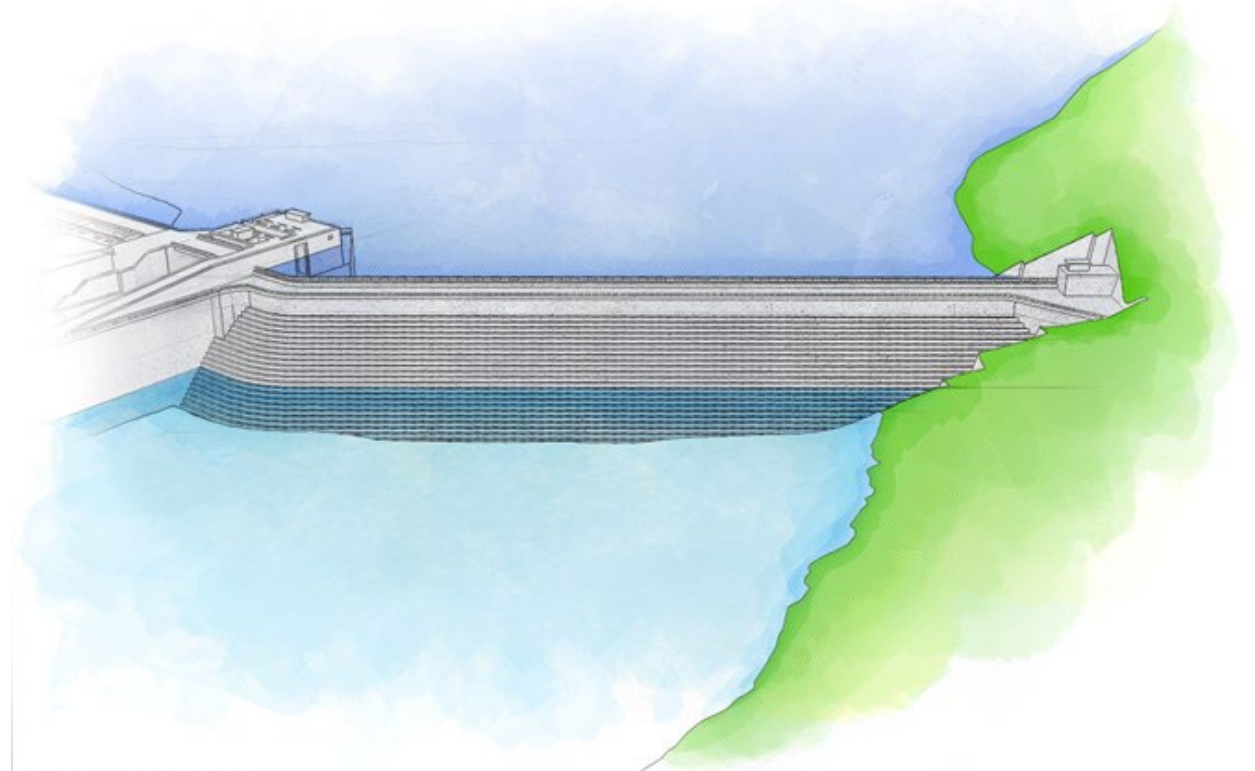
- ✓ Members: Anton Schleiss, Jean-Pierre Tournier, Ahmed Fouad Chraibi
- ✓ First Mission from September 25 to 28, 2023

LEPTS 2018

- ✓ Fully compliant with LEPTS 2018

Emergency Preparedness Plan (EPP)

- ✓ Prepared in compliance with intl. best practice
- ✓ EPP for construction phase approved by GOL



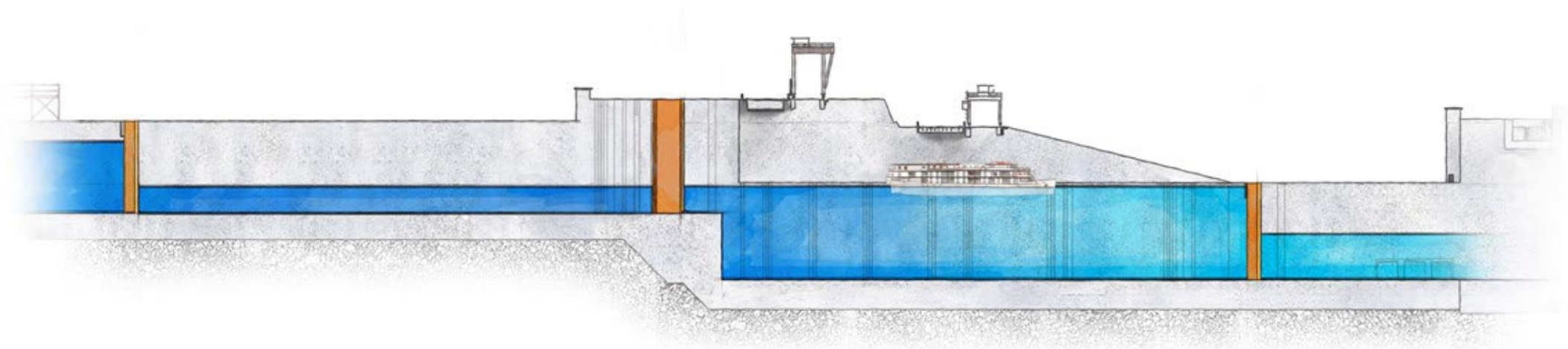
Safety and Reliability of the Navigation Facilities

Reliability of water filling system

- System is based on Xayaburi
- Hydraulically improved

Visibility inside u/s approach channel

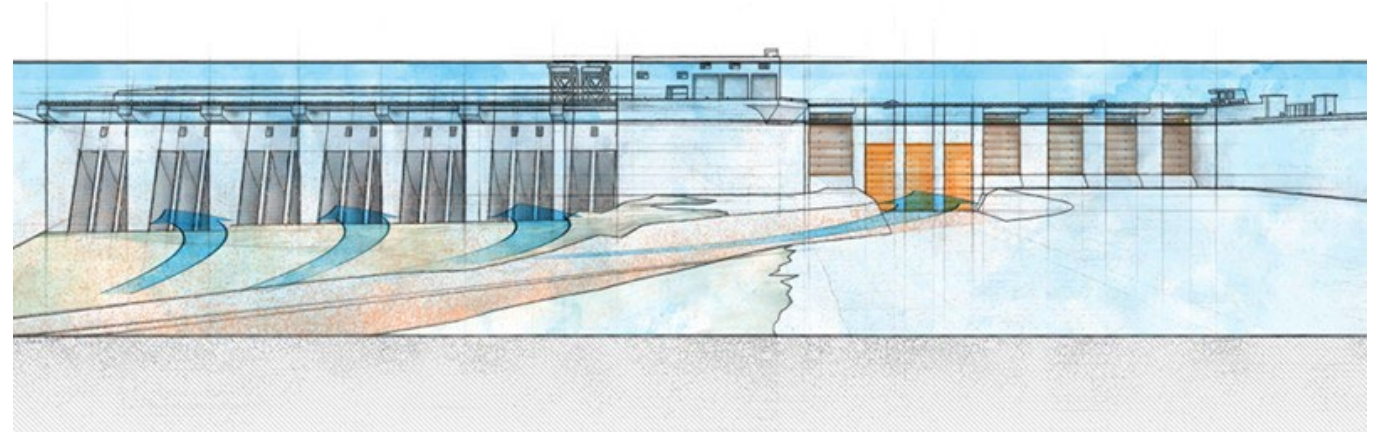
- Layout was improved, resulting in improved visibility



Development of Cascade Operating Rules

Sediment management

- Sediment routing foreseen
- System similar to Xayaburi HPP
- Powerhouse and LLO's primary devices



Downstream Drift of aquatic species larvae and eggs during critical migration periods

- Sufficient velocities in central river stretch
- Several downstream migration systems implemented



Development of Cascade Operating Rules

Potential impacts of extreme flood and drought events

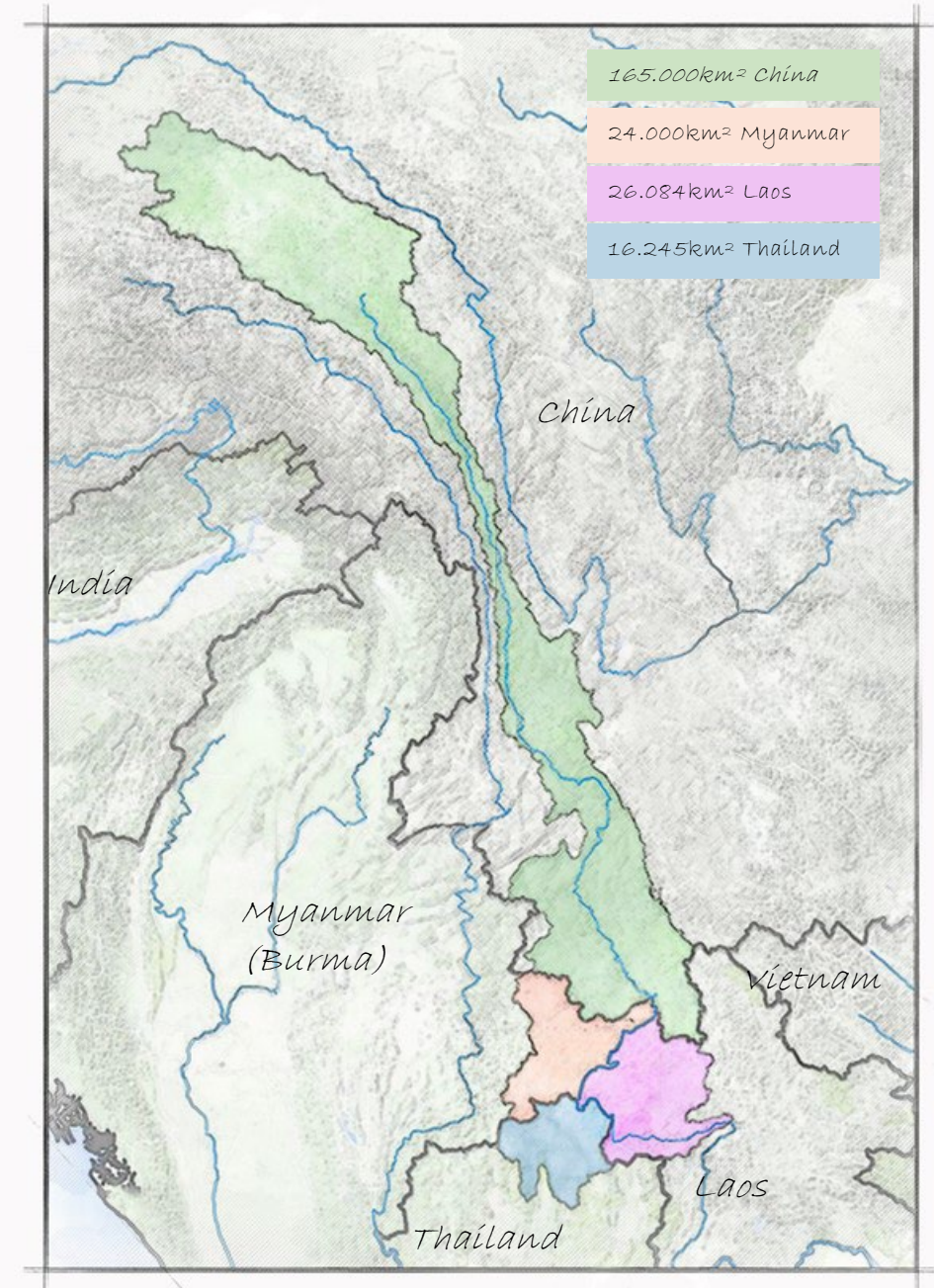
- Run-of-river plant -> inflow equals outflow
- Limited storage volume -> no drought and flood mitigation
- Improved flood forecasting system (Xayaburi system)

Risk of multiple failure of infrastructure on upper main-stream

- Impact of such a failure cannot be assessed (lack of information)

Warning scheme

- Alert to downstream communities defined in Emergency Action Plan
- MRC and all countries requested to prepare basin wide early warning scheme





Making Future