

Regional and National Training on PDG 2023
April to June 2023



Preliminary Design Guidance 2023





PDG 2023 Section 9

Riparian Communities and River-Based Livelihoods



Overview

Background: Why does the 2023 PDG include a new Section 9?

- Lessons learned from the MRC Procedures
- Lessons learned from the hydropower projects
- Lessons learned from other international standards

Contents of the Section 9 “Riparian Communities and River-Based Livelihoods”

- Objectives and Scope
- Risks
- Pre-project Monitoring and Analyses
- Design and Operational Guidance
- Project Monitoring and Adaptive Management



Background:

Why does the 2023 PDG include a new Section 9
“Riparian Communities and River-Based Livelihoods”?

Lessons learned from the MRC Procedures

- Existing **technical guidance and guidelines** on dam design, construction and operation have been developed and implemented by the MRC, MCs and project developers to avoid, minimise and mitigate the potential adverse impacts of the proposed projects.
- However, there is a gap regarding management of **longer-distance** (in many cases transboundary) livelihoods impacts, related to changes in the Mekong River.
- **Recent MRC work** such as ISH projects 306 and 11, the Council Study, and the Sustainable Hydropower Development Strategy (SHDS) has highlighted social issues.
 - *SHDS Strategic Priority 4: Enhance the livelihoods of hydropower project-affected river-based communities, particularly of women, children and ethnic minorities.*
- Due to the gaps in the MRC's guidance (i.e., PDG 2009), the developers, government agencies, and PNPCA reviewers have used **inconsistent approaches**.



Lessons learned from the hydropower projects

- The MCs' regulatory requirements generally focus on **local social impacts** (in particular, related to land acquisition and resettlement)
- However, ~24 million people live in a 15-km corridor along the lower Mekong, and a significant part of their **livelihoods is related to the river**.
- Typical **comments/issues identified in the MRC's Technical Review Reports** during 2015-2022 for the proposed projects:
 - ✓ Definition of affected communities **not based on impact pathways**
 - ✓ Baseline information on affected communities **limited or outdated**
 - ✓ Potential **cumulative impacts** not considered
 - ✓ Mitigation measures **without clear responsibilities and budgets**
 - ✓ **Residual risks** that may remain after mitigation not addressed
 - ✓ Lack of **continued monitoring and adaptive management capacity**

Examples for river-based livelihoods issues

River reach downstream of Sanakham HPP



Protected riverbank and aquaculture operations, in
Mueang Mie, Nong Khai province



River crossing at Wisit, Bueng Kan province

How will projects affect riverbank protections and valuable assets such as infrastructure, settlements, farmlands?
How will projects affect river use for floating aquaculture and transport?

Examples for river-based livelihoods issues

River reach downstream of Sanakham HPP



Riverbank gardens in Si Kai, Nong Khai province



Kang Kout Koo rapids

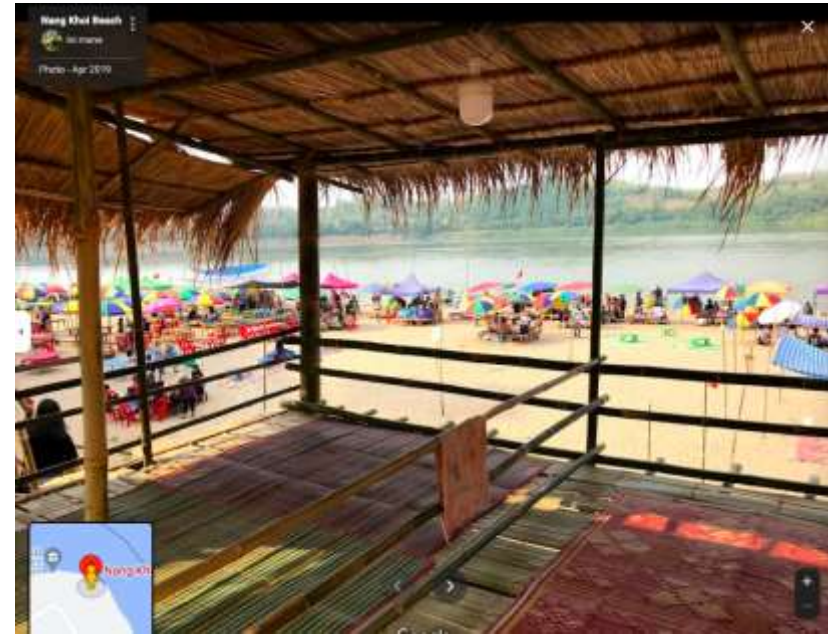
How will projects affect seasonal agriculture on riverbanks?
How will projects affect places that attract visitors?

Examples for river-based livelihoods issues

River reach downstream of Sanakham HPP



Roadside gravel deposits between SNHPP and Chiang Kha

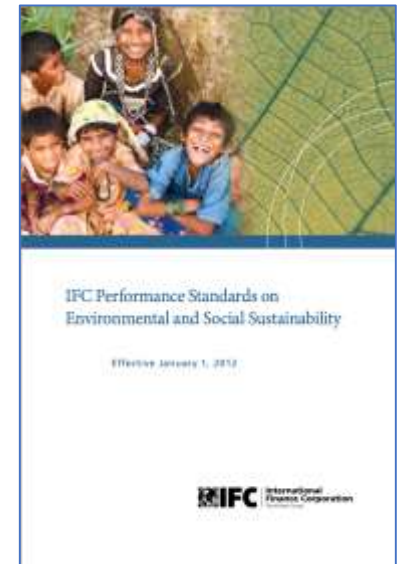


Riverbank restaurant between
SNHPP and Chiang Khan

How will projects affect livelihoods in sand and gravel extraction, and the construction industry?
How will projects affect beaches, sandbanks, or islands used for recreation and tourism?

Lessons learned from other international standards

- Increasing experience and focus on the **social impacts and public acceptance** of development projects, including hydropower projects
- Social mitigation requirements now reflected in all national regulations, the safeguards of international finance institutions, and voluntary standards
- **Hydropower Sustainability Standard (2021)** covers
 - ✓ Economic displacement (loss of livelihoods)
 - ✓ Physical displacement (resettlement)
 - ✓ Benefit Sharing
 - ✓ Community Health and Safety
 - ✓ Indigenous Peoples
 - ✓ Cultural Heritage
 - ✓ Labour and Working Conditions
 - ✓ Communications & Consultation





Contents of the Section 9

“Riparian Communities and River-Based Livelihoods””

Section 9.1 Objectives

- **Engage** directly-affected riparian communities in all phases of the projects development and operation in a participatory manner.
- Ensure that directly-affected riparian community livelihoods are **better** than, or at least restored to, pre-project levels.
- Implement these support measures, where feasible, **within existing institutional frameworks** (e.g. the MRC, the government at various levels, civil society organizations).
- Enhance existing, or create new, **transboundary cooperative mechanisms** as needed (e.g. to implement support mechanisms for transboundary riparian communities), such as through national, bilateral, regional and MRC-related frameworks.

Important concept: Attribution

Impacts are always cumulative.

Developers are responsible for the impacts that can be **attributed** to their projects.



Section 9.1 Scope

Focus

- A hydropower project changes the river system → resulting in changes to river-based livelihoods

Scope exclusions

- Local socio-economic impacts due to displacement of people, and impacts on people that are not related to the river (such as social disruption, construction nuisances, cultural heritage): covered under national regulatory regimes
- Public health & safety of riparian communities: mainly covered under sections 4, 5 and 7
- Macro-economic changes for the general population and potential trade-offs between national economic sectors and between countries: covered under MRC Basin Development Planning process (MA95 Article 2) and through GMS and ASEAN cooperative arrangements



Section 9.1 Definitions

Residual impacts

- Impacts that remain after all viable avoidance, minimization, and mitigation measures (as described in sections 2-8) have been applied

River-based livelihood

- Capabilities, assets and activities related to: harvesting of fish and OAAs, riverbank and floodplain agriculture, riverine transport, sand-mining, tourism; service provision in relation to these activities; and/or processing and trading activities in relation to these activities

Directly affected riparian community

- Those communities residing alongside, upstream and downstream of a hydropower project who have river-based livelihoods that are directly affected by changes in the river system

Vulnerability

- Inability to withstand adverse impacts from multiple stressors. Vulnerable groups are those people who by virtue of gender, ethnicity, age, disability, economic disadvantage, or social status may be more adversely affected by impacts than others and who may be limited in their ability to claim or take advantage of assistance and benefits



Section 9.2 Risks

Even if a project has followed the guidance in Sections 2 to 8, design and mitigation measures may not work perfectly, and thus there may be residual risks from a hydropower project.

Example:

- Even the best fish passage is unlikely to be 100% effective, and effectiveness is difficult to predict, thus making impacts on fisheries uncertain.

The following slide shows an overview of potential residual risks, and their consequences for livelihoods.



Potential residual risks	Potential livelihood consequences
Unexpected and extreme water releases from impoundments (as described in Sections 2 and 7).	Large (or consequences of dam break) releases can affect downstream assets, including infrastructure such as bridges, river ports, houses, farms and irrigation systems, etc.
Projects can affect sediment transport and geomorphology (as described in section 3).	- Sediment deposits in the impoundment backwater can become obstacles to navigation. - Erosion downstream of a dam or cascade can affect riverbank and coastal properties. - Sediment trapping in an impoundment can reduce the downstream availability of sand and gravel for construction. - Downstream incision of the riverbed can affect groundwater levels and agricultural productivity. - Fish habitats such as spawning grounds can be affected, thus reducing catch.
Projects can affect aquatic ecology and fish populations, both directly and indirectly (as described in Sections 3 to 6).	- Fish populations are affected by river fragmentation, habitat changes, and water quality changes. - Because of the unusually high dependence of people on fish and OAAs, this is an area of potentially major consequence (Nam et al., 2015). - While some riparian communities may benefit from increased fishing opportunities in impoundments and below dams, a majority are expected to experience reductions in subsistence and commercial fishing resources. This can affect food security and incomes, and disrupt socio-economic networks for fish processing and trading.
Projects can affect local and long-distance navigation (as described in section 8).	Changes in water levels, flow velocities, sediment transport, and the barrier effect of dams influence the type of craft that can be used, the cost of river transport, the availability of goods, the attractiveness for river tourism, as well as the safety of navigation.

Section 9.3 Pre-project monitoring and analysis

Methodology should follow good practices in Social Impact Assessment, regarding

- Baseline data collection, both for riparian communities living close to the project (primary surveys) and those upstream and downstream of project (secondary data from SIMVA and other sources, with complementary data collected only as required)
- Respectful and inclusive community consultation
- Analysis and impact prediction

Key results should include

- Locations, characteristics and livelihoods of project-affected riparian communities, disaggregated by ethnicity, gender and vulnerability
- Residual risks and their attribution to individual projects, **to inform design, operations, mitigation, and compensation decisions**



Section 9.4 Design and Operational Guidance

Mostly covered under sections 2 to 8, but

- mitigation is rarely designed to fully eliminate impacts
- mitigation may not work as intended
- impacts are cumulative, resulting from multiple projects which may or may not be using good practice mitigation approaches

Therefore, specific mitigation and compensation measures for socio-economic impacts may be needed.



Section 9.4 Design and Operational Guidance

In what cases should projects plan for mitigation and compensation measures?

- If risks to livelihoods for riparian populations are predicted, during project preparation
- If monitoring during project construction and operation confirms/detects impacts (see section 9.5)
- If such risks can be reasonably attributed to individual projects or groups of projects

The following slides show an overview of potential residual risks, and potential support measures to address them.



Potential residual risk	Potential support measures
Unexpected and extreme water releases from impoundments (as described in Sections 2 and 7).	• Measures to increase resiliency of infrastructure to changing water levels (e.g. through design of bridges, riverbank roads, boat ramps and river ports, water intakes for municipal use and for irrigation, pipelines, and power and communication lines) • Emergency planning and communications • Replacements of lost assets, including boats, livestock, etc.
Projects can affect sediment transport and geomorphology (as described in Section 3).	• Flushing and dredging to support navigation • Strengthening of river banks and dikes (e.g. levees, embankments) to protect high-value lands such as settlements • Adaptation or replacement of riverside infrastructure where affected, for example lowering of water intakes in case of riverbed deepening • Support in case of physical or economic displacement, such as equivalent replacement land and homes, and livelihood restitution or alternative livelihoods support (see below) • Access to alternative construction materials to replace reduced availability of sand and gravel, such as off-stream borrow pits

Potential residual risk	Potential support measures
Projects can affect aquatic ecology and fish populations (as described in Sections 5 and 6).	• Offsets to increase fish populations (improvement of fish passage and habitat in other parts of the river system; hatcheries and stocking, see Clause 247) • Access to the reservoir, boats and other fishing gear, and facilities for landing, cooling, processing and marketing • Alternative livelihoods support including training, equipment, credit schemes, job placement, and market development • Access to alternative food production options and markets, including high-value options such as fruit trees, aquaculture, dairy, etc.
Projects can affect local and long-distance transport (as described in Section 8).	• Alternative transport if impoundment or dam becomes a barrier (ferries, bridges, by-pass roads, bus services, etc.) • Safety measures such as marking of submerged rocks • Provisions to allow small craft to traverse dam.

Section 9.4 Design and Operational Guidance

Support measures should

- be proposed for priority impact areas
- directly relate to the residual impact (e.g. reduction in fish biomass), and ideally provide benefit for those riparian communities who are directly affected
- be demonstrably practical, feasible and cost-effective
- be fully covered by funding commitments
- aim for sustainable outcomes
- for domestic impacts, be identified in conjunction with National Agencies and the MRC
- for cross-border impacts, be identified in conjunction with the relevant Member Countries and the MRC, informed by MRC documents and frameworks, and based on bilateral or multi-lateral agreements negotiated between Member Country governments



Section 9.5 Project Monitoring and Adaptive Management

Specific monitoring to establish whether

- mitigation measures as described in sections 2-8 are effective
- socio-economic support measures are effective
- livelihoods are declining, stable or improving (using indicators and target groups initially identified during baseline studies)
- adjustments or additional support measures are required

Developer is responsible for monitoring, but may rely on publicly available data (e.g. SIMVA)

Where public data are insufficient to capture impacts, additional monitoring should be undertaken

Requires clarification of responsibilities, methods and costs with Member Countries, and potentially with other developers or third parties



Section 9.5 Project Monitoring and Adaptive Management

Example for adaptive management:

Baseline situation:

- river reach where 50% of the population get 50% of their income or protein from fish
- total profit from fishing (or replacement value of the protein) is USD 1 m/year
- good baseline data of the current situation, i.e. over several years, so that it is known whether there were any downward/upward trends or seasonal/annual variations

Hydropower project gets built just upstream

Developer is confident that their fish passage will work and the project will not affect the fishery

But continued monitoring shows a strong correlation between the time of construction and entry into operation, and a decline of the fishery: the value is now only USD 500,000/year.

Attribution of the decline to the HPP is clear - there is a residual impact of the HPP on the fishery. Building and operating the fish passage was not as successful as hoped.



Section 9.5 Project Monitoring and Adaptive Management

Operators of the HPP now have several options:

- try to fix the underlying problem (improve the fish passage)
- support or compensate the people affected by the residual impact
- or a combination of the two.

Design of compensation measures:

- typically, support for alternative protein sources and alternative livelihoods (perhaps fish or chicken farming)
- would need to target the same people that lost part of their income and protein
- should consider not just the owners of boats but also those affected by secondary effects - the crew members, traders, processors and in some cases, if the decline of the fishery is drastic and prices go up or availability goes down, even the customers of fish.



Section 9.5 Project Monitoring and Adaptive Management

So, in this example adaptive management means

- accepting responsibility for impacts, wherever they occur (even across borders),
- accepting that most mitigation measures (such as a fish passage) will not be 100% effective, but that it is difficult to say beforehand how effective they can be made,
- monitoring the right parameters,
- dedicating enough resources and management attention and time to corrective actions, such as livelihood restoration programs.

What does this imply for the MRC and the PNPCA process?

- MRC should insist that each developer makes a long-term commitment to dealing with residual impacts. Every project needs not just a quick social program during construction, but a continuing staff and budget for monitoring and management of social issues that need to be flexible, depending on the uncertain impacts of the project and the uncertain success of the initial mitigation measures. Mitigation sometimes needs to be seen as a trial-and-error process.
- To help developers and governments do this effectively, the MRC can contribute with facilitation of monitoring and mitigation arrangements, particularly across borders.



Take-Home Messages

River-based livelihoods will change

Developers should assume responsibility for the changes they are causing

Communities should be supported in adapting to change

Practical support measures are available

Member country governments and the MRC can facilitate the implementation of support measures, including for transboundary changes



Thank you

