Sri Lanka Banks' Association
Sustainable Banking Initiative

# Case Study

## Mini Hydropower – climate friendly but not devoid of environmental and social risk

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## Introduction


Image: Pixabay

This case study considers three banks with three different mini-hydropower projects. Despite hydropower being a climate friendly renewable energy source, they, including mini-hydro schemes, have attracted controversy over their environmental and social impact. Government is responsible for large hydropower schemes with the private sector taking on projects less than 10MW.

Environmental and social issues associated with hydropower projects depend heavily on the size, type, operating mode, and location of the project. Locations can often be sensitive due to steep terrain, biodiversity and socio-economic value meaning even mini-hydropower projects can have a significant adverse impact.

Environmental issues may include:

1. Conversion of aquatic and terrestrial habitats;
2. Changes in in-stream flows, including water, sediment and aquatic biota flows and impact on ecosystem services to local communities;
3. Connectivity and fish entrainment;
4. Stream morphology and sediment management;
5. Watershed management aspects;
6. General pollution prevention and control and reservoir management, which covers water quality and reservoir erosion, slope stability and sedimentation.
7. Climate change risk and more extreme weather events.

Social issues may include:

1. Land and water use conflicts and associated physical and/or economic displacement;
2. Community health and safety;
3. Cultural heritage loss;
4. Occupational health and safety;
5. Labour and working conditions;
6. Community acceptance.

The cumulative impact of hydro power projects also needs to be considered especially if there are similar developments in the same catchment and ecological zone. In Sri Lanka, it is the number of projects both completed and approved within the wet zone that has caused alarm among local communities, ecologists and interest groups.

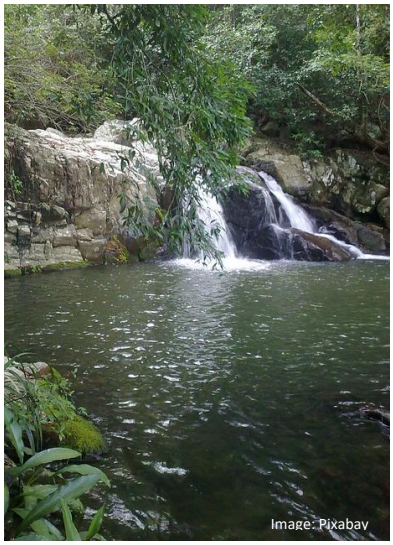
*The case is based on facts, but names have been changed for reasons of confidentiality.*

## The Projects


**Project A** involved a 4.5MW plant development with a total project cost of LKR 360 million. Four banks provided a term loan to be repaid in eight years with a one and a half grace period.

The location was not identified as being environmentally unique by the project environmental assessment. A village was located just upstream of the weir site. The approved weir height for the project was three metres. Other structures associated with the project included a channel path, forebay tank and power house. In-stream flows would be changed upstream of the weir from the impoundments, below the weir through reduced flows associated with diversion of water flows to the power house and downstream of the of the power house from the water discharge.

**Project B** was a development where the bank provided a six-year term facility for LKR 100 million. The project promoter indicated that the site location was bordering the Sinharaja Forest Reserve Buffer Zone. The Sinharaja Forest Zone comprises a core protected zone of tropical rain forest and buffer zone with a diversity of forest types and some human activity. Sinharaja is the country's last viable area of primary tropical rainforest and has been declared a National Wilderness Area, Biosphere Reserve and World Heritage site. More than 60% of the trees are endemic and many of them are considered rare. There is much endemic wildlife, especially birds, but the reserve is also home to over 50% of Sri Lanka's endemic species of mammals and butterflies, as well as many kinds of insects, reptiles, and rare amphibians.




Under **Project C** the developer was also seeking a term loan of LKR 100 million for the construction of a 1.5MW plant. The project was located on a waterfall on a stream originating from the Sinharaja Forest Zone. The waterfall is a known tourist destination among the local people and is associated with numerous legends.

All three projects had received approvals from the project approving agencies the Central Environmental Authority (CEA) and the Sustainable Energy Authority (SEA).

## Banks' E&S Risk Management

In the case of **Project A**, the loan application was prior to the bank establishing their E&S risk assessment process. The project was not categorised according to E&S risk and no E&S due diligence undertaken. The bank was comfortable with the reputation of the company Directors and the experience of the consulting engineers, contractors, and suppliers of the plant. The EPL and local authority approvals were obtained.

The banks that were approached for Project B and C both had E&S risk management systems in place. Both projects were categorised as medium risk.

For **Project B** the bank obtained the Letter of Approval by the CEA, the Energy Permit and Declaration as a Development Area from the SEA and a Letter of No Objection from the Forest Department. The bank decided to grant the loan with the following conditions:

1. All structural designs of civil work to be certified by an independent consultant acceptable to the bank;
2. The company to maintain in force all rights of ways and other requirements attached to permits issued and any requirements of the European Investment Bank (EIB);
3. To implement and operate the project in compliance with the laws of Sri Lanka and EIB's standards.

In the case of **Project C,** the bank had been working with several environmental interest groups as part of its community investment programme. One of the projects sponsored by the bank had been the research publication of a book on "Fresh Water Fishes" by the Wildlife Conservation Society of Galle. Due to this relationship the Wildlife Conservation Society alerted the bank to several environmental and social concerns with the proposed hydro-power project, including potential biodiversity, local livelihood and cultural heritage impacts. The information provided by the Wildlife Conservation Society after verification by the Head of CSR was communicated to the lending officers.

Despite the project having approvals from the CEA and the SEA the bank decided not to fund the project.

***E&S Risk Categorisation** – this is a process that categorises a client's operation or project to determine the level of E&S risk assessment that the bank should undertake. Projects are classified as High (Category A), Medium (Category B) or Low (Category C) depending on the type of activity, the location, sensitivity and scale of the operation or project. These aspects all have a bearing on the nature and magnitude of potential impacts of an operation or project.*

*For example, an operation that involves activities and is of a size that give it a medium risk profile might have its risk profile increased if it is sited in an environmentally or socially sensitive area. It could be argued that the three mini-hydropower projects should have been given a high E&S risk because of the sensitivity of their locations. Had they been classified with a higher E&S risk a more in-depth E&S risk assessment would have been triggered including determining whether there was broad community support for the projects.*


Source: https://www.wildlife.lk

## How do the three mini-hydro power projects compare?

*"Legal does not equate to legitimacy"*

Image: Pixabay

After the commencement of Project A, the area received an unexpected high rainfall, the highest in 35 years. The village upstream of the weir flooded and the water levels did not recede until a day after the rain which had not been experienced previously. The community, led by a retired school principal and local politicians, started to protest the project. The protests occurred in the context of a poor relationship that developed with the developer. Some of the issues undermining the relationship included the failure of the developer to create safe bathing areas to replace traditional bathing areas that were lost and to build a bridge for villagers to cross the river.

The protests resulted in the Minister of Environment visiting the site with CEA officials and the local community requested that the Minister close operations at the plant. It subsequently transpired that the height of the weir constructed was six metres not three. A violation of the approval conditions and possibly contributing to the slower dissipation of flood waters upstream.

Commercial operations were stopped and with no revenues being generated the project proponent defaulted on their loans.

In Project B two cases have been filed one with the Court of Appeal and the other with the Supreme Court by a group of environmentalists. They are challenging the approvals granted by the government authorities claiming that the project is located inside the Sinharaja Forest Reserve Buffer Zone and not outside it.

Due to the ongoing court case in the Court of Appeal the company has been unable to complete construction work and commission the plant on time. As such cash flows are not being generated and the company does not have the means to service the monthly instalments now due.

Project C has also hit the media headlines as interested and affected parties fiercely protest the development raising several concerns over the projects impact on a site of cultural heritage, local livelihoods, aquatic biodiversity, and water availability. The bank has probably protected itself from the credit risks experienced with Project A and B.

## Points of Reflection

This case study provides us with the opportunity to reflect on the outcomes and learning from three different experiences.

Mini-hydropower developments can make a positive contribution to a country's power supply and mix. It is a renewable and cleaner source of power. However, as demonstrated by these cases despite their small size, relative to large scale hydro power schemes, they can still be a source of conflict. The more sensitive the location the greater the risk of conflict.

Project A had a village located just upstream of the reservoir, Project B was close to and possibly in a protected area of high biodiversity value and Project C on a site of cultural significance as well socially significant in the day to day lives of neighbouring communities.

As a bank appraising a facility application the E&S risk management system needs to ensure that the E&S risk profile of a client's operation recognises the sensitivity of the site location. This may be due to unique environmental and/or social characteristics or the effect of cumulative impacts of other activities in the area. When any sensitive characteristics are flagged, they need to be looked at more closely. For example, the bank considering Project B noted that when a site is located near a protected zone/environmentally sensitive area, the site location needs to be confirmed a process which may involve input from other interested and affected parties.

A second lesson emerging from these cases is the importance of stakeholder engagement not only by the client but also for the bank. These include regulators, interested parties and most importantly parties likely to be directly affected by a client's operation or project. This engagement is important for:

1. Deepening the Bank's understanding of how an operation or project can or will affect others, their concerns and their perceptions. In Project C, the bank noted that proactive engagement with its stakeholders during their due diligence work flagged sensitive socio-economic issues that hadn't been highlighted by the client or the regulators.

2. Building and maintaining a good relationship from project concept stage, through construction activities and into the operations. This was something that the developer of Project A failed to do even managing to worsen the relationship over time. Good engagement by the project developer includes a robust grievance mechanism for receiving, responding, and resolving issues to avoid an escalation.

3. And ultimately creating shared value.

***Stakeholder Engagement*** *-stakeholder engagement is the basis for building strong, constructive, and responsive relationships that are essential for the successful management of a project's environmental and social impacts. Stakeholder engagement is an ongoing process that may involve, in varying degrees, the following elements: stakeholder analysis and planning, disclosure and dissemination of information, consultation and participation, grievance mechanism, and ongoing reporting to Affected Communities.* ***IFC PS No 1.***

Finally, we note the limitation of regulatory approvals in establishing whether a client is managing their E&S risks. A project may have received their approvals including those from the CEA but still present a risk. This can be due to a failure to comply with any conditions attached to the approvals as experienced in Project A with the height of the weir. Or be due to a clash between what a regulator deems acceptable and what broader society considers acceptable as experienced in Project B. Social impacts and particularly impacts to ecosystem services that have both an environmental and social impact are often more challenging to address than a straight forward environmental impact that has a technical fix.

For example, some communities neighbouring new mini-hydropower plants have been experiencing the drying up of their paddy fields, water resources and other livelihood impacts. It is these experiences that are leading communities to question whether their losses are worth the power generated from a 1 MW plant? And what constitutes adequate compensation for those losses particularly the disruption of an ecosystem service that has provided them, previous generations and could provide a future generation with their livelihood?


Source: https://www.worldwildlife.org/publications/living-planet-report-2016

## Additional Resources

**Biodiversity Sri Lanka**

Biodiversity Sri Lanka is a national platform entirely owned and driven by the private sector, established to promote strong engagement of the corporate sector in biodiversity and environmental conservation

https://biodiversitysrilanka.org/tag/mini-hydro-project/

**Centre for Environmental Justice**

www.ejustice.lk

**Small Hydropower Developers Association**

https://www.hydropowersrilanka.org/

**IFC Good Practice Note: Environmental, Health, and Safety Approaches for Hydropower Projects**

This Good Practice Note on Environmental, Health, and Safety Approaches for Hydropower Projects is a technical reference document that has been developed for IFC clients and other private sector companies and their consultants. This Note is intended to be used in conjunction with the Environmental, Health, and Safety (EHS) General and other Guidelines, as relevant, and IFC's Performance Standards to identify, avoid, mitigate, and manage EHS risks and impacts in hydropower projects.

https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_gpn_ehshydropower

**Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets**

This handbook endeavours to provide a comprehensive overview of good practice in stakeholder engagement, with a dedicated focus on stakeholder groups that are "external" to the core operation of the business, such as affected communities, local government authorities, non-governmental and other civil society organizations, local institutions and other interested or affected parties.

The handbook is divided into two parts: Part One contains the key concepts and principles of stakeholder engagement, the practices that are known to work, and the tools to support the delivery of effective stakeholder engagement. Part Two shows how these principles, practices and tools fit with the different phases of the project cycle, from initial concept, through construction and operations, to divestment and/or decommissioning.

https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_handbook_stakeholderengagement__wci__1319577185063

**IFC Good Practice Note: Managing Contractor's Environmental and Social Performance**

This Good Practice Note (GPN) is aimed at helping clients implement sound, consistent, and effective approaches, in compliance with IFC requirements, to manage the environmental and social (E&S) performance of their contractors, subcontractors, and other third parties working for the project. This GPN provides practical guidance to clients and contractors on the process of prequalification, solicitation, evaluation, contracting, and procurement to ensure adequate E&S management during construction, operation, and demobilization activities. Finally, it provides recommendations on how to manage project performance during the different phases of the services being provided by contractors (i.e., from mobilization to construction, operations, and maintenance) and how to monitor and report on contractor performance effectively.

https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_gpn_escontractormanagement

**Hydropower Sustainability Protocol** – for sharing with project proponents.

http://www.hydrosustainability.org/