



# Hydropower Sustainability Assessment Protocol

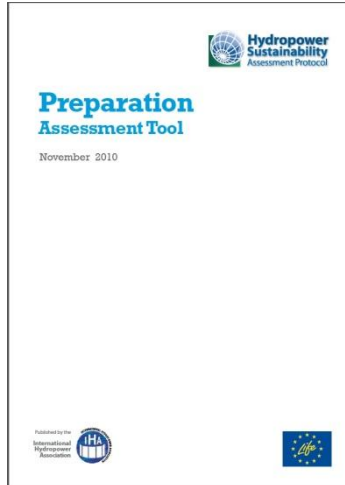
Promoting Integrity and Sustainability in Hydropower and  
Multipurpose Dam Projects

International Water Integrity Forum  
UNESCO-IHE, Netherlands  
5 – 7 June 2013





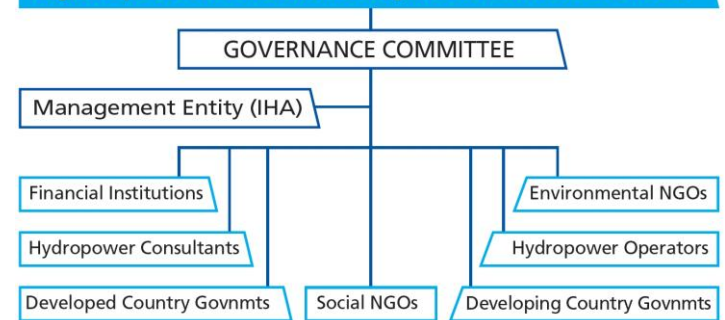
# The Protocol



A **framework** for assessing the sustainability of hydropower projects; a neutral platform for dialogue

**Governed** by a multi-stakeholder Council and Terms and Conditions

## Hydropower Sustainability Assessment Council



Lead Assessor Name: Simon Howard  
 Project Name: Big Dam Project  
 Project Stage: Implementation

Preamble Questions | Team | Assessment Information | Evaluation | Evidence

✓ I-1 - Communica...  
 ✓ I-2 - Governanc...  
 ✓ I-3 - Environme...  
 ✓ I-4 - Integrate...  
 ✓ I-5 - Infrastru...  
 ✓ I-6 - Financial...  
 ✓ I-7 - Project B...

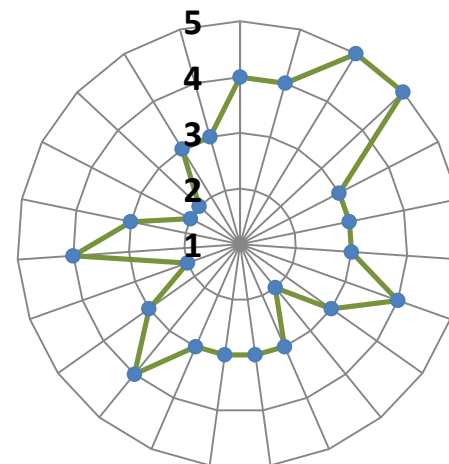
**I-1 - Communications & Consultation**

Relevant Background Information | Analysis | Associated Evidence | Scoring Summary

Good Practice (Level 3) | Best Practice (Level 5)

Assessment  
 Management  
 Stakeholder Engagement  
 Conformance/Compliance

A **consistent, globally-applicable** methodology

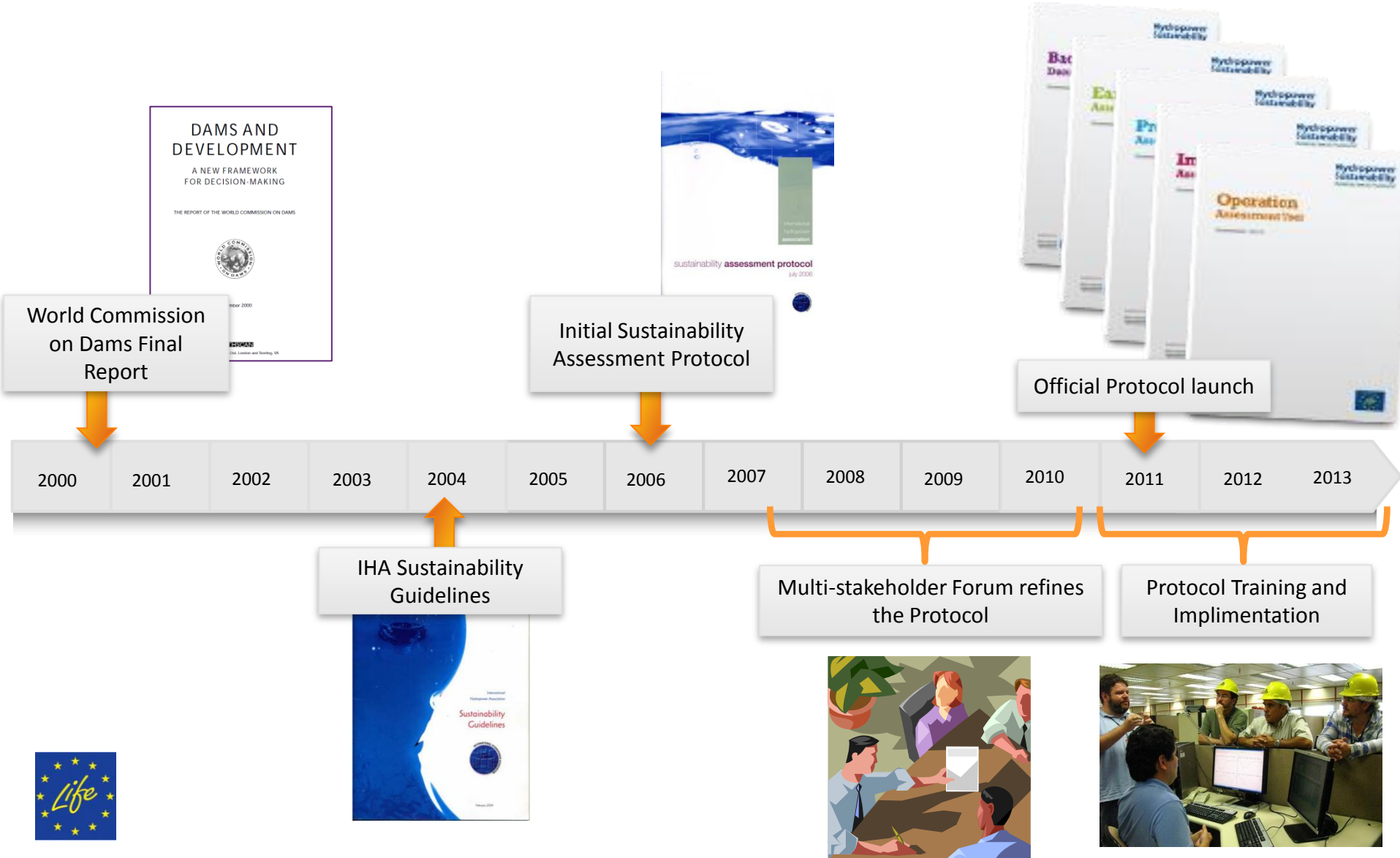


**Over 20** clearly-defined sustainability topics





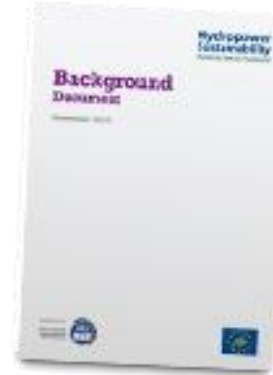
# Protocol evolution





# Protocol documents

Background document:



Four methodology documents for four stages of development:

Early stage

Preparation

Implementation

Operation





# Aspects of sustainability covered

The Protocol encompasses all aspects of sustainability

TECHNICAL	ENVIRONMENTAL	SOCIAL	ECONOMIC AND FINANCIAL	INTEGRATED
Siting and design	Downstream flows	Project affected communities and livelihoods	Economic viability	Demonstrated need and strategic fit
Hydrological resource	Erosion and sedimentation	Resettlement	Financial viability	Communications and consultation
Reservoir planning, filling and management	Water quality	Indigenous peoples	Project benefits	Governance
Infrastructure safety	Biodiversity and invasive species	Cultural heritage	Procurement	Integrated project management
Asset reliability and efficiency	Waste, noise and air quality	Public health		Environmental and social issues management





# Protocol criteria

Each topic scoring statement provides a statement for up to six criteria:

- Assessment
- Management
- Stakeholder engagement
- Stakeholder support
- Conformance / compliance
- Outcomes

3

**Assessment:** Issues that may affect indigenous peoples identified through an assessment process utilising impacts and effectiveness of management measures implementation appropriate to the identified issue

**Management:** Measures are in place to address indigenous peoples in relation to the project, and to meet formal agreements with indigenous peoples are put

**Stakeholder Engagement:** Ongoing and mutually agreed processes for indigenous peoples to raise issues and get feedback.

**Stakeholder Support:** Directly affected indigenous peoples going opposition to the plans for issues that specific

**Conformance/Compliance:** Processes and objectives that indigenous peoples have been and are on track to be met with respect to and any indigenous peoples related commitments

**Outcomes:** Plans provide for major negative impacts on their associated culture, knowledge, access to land and resources minimised, mitigated or compensated with no significant for positive impacts to be achieved.







# Topic structure

## I-6 Financial Viability

This topic addresses project financial management, including funding of measures aimed at ensuring project sustainability, and the ability of the project to generate the required financial returns to meet project funding requirements. The intent is that the project is proceeding with a sound financial basis that covers all project funding requirements including social and environmental measures and commitments, financing for resettlement and livelihood enhancement, and delivery of project benefits to project affected communities.

### Scoring:

- 1** *There are significant gaps relative to basic good practice.*
- 2** *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*
- 3** **Assessment:** An assessment has been undertaken of project financial viability, including project costs and revenue streams, using recognised models and including risk assessment, scenario testing and sensitivity analyses; and monitoring of the financial situation during project implementation is being undertaken on a regular basis.  
**Management:** Measures are in place for financial management of project implementation; plans are in place for financial management of the future operating hydropower facility.  
**Conformance/Compliance:** Processes and objectives relating to financial management have been and are on track to be met with no major non-compliances or non-conformances, and funding commitments have been or are on track to be met.  
**Outcomes:** The project or the corporate entity to which it belongs can manage financial issues under a range of scenarios, can service its debt, and can pay for all plans and commitments including social and environmental.
- 4** *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*
- 5** **Assessment:** In addition, project costs and revenue streams are fully detailed; and financial viability of the project has been analysed and optimised including extensive scenario testing, risk assessment and sensitivity analyses.  
**Management:** In addition, financial management plans provide for well-considered contingency measures for all environmental and social mitigation plans and commitments; and processes are in place to anticipate and respond to emerging risks and opportunities.  
**Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.  
**Outcomes:** The project can manage financial issues under a broad range of scenarios.

Statements of Description and Intent

Scoring Levels from 1-5 For each criteria

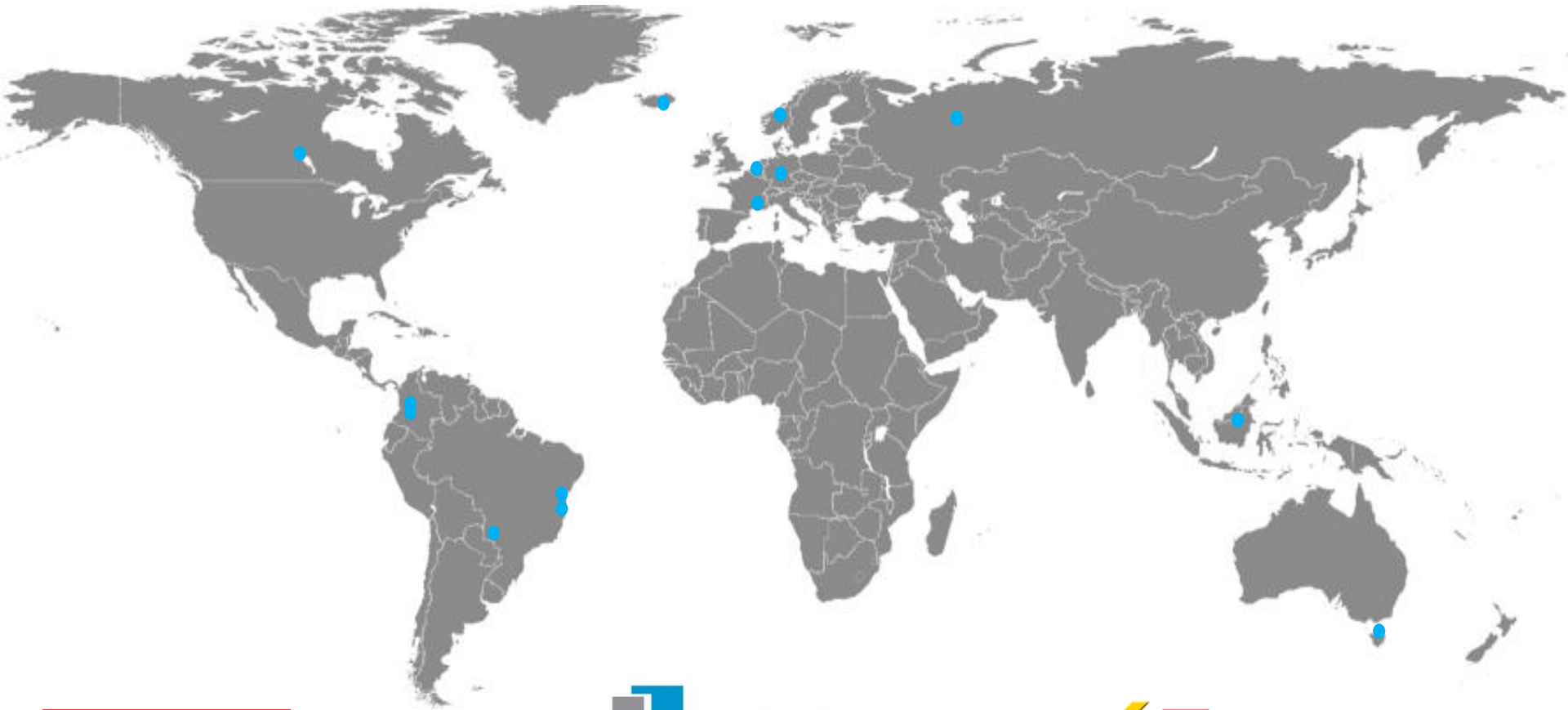
Level 3 - Statements of Basic Good Practice

Level 5 - Statements of Proven Best Practice

IMPLEMENTATION



# IHA Sustainability Partners



ODEBRECHT



epm<sup>®</sup>

Energia Sustentável do Brasil



Manitoba  
Hydro



Landsvirkjun

e-on



RusHydro



Hydro  
Equipment  
Association

Statkraft



ITAIPU  
BINACIONAL



ISAGEN  
ENERGIA PRODUTIVA

Hydro  
Tasmania  
The power of natural thinking





# Assessments to date

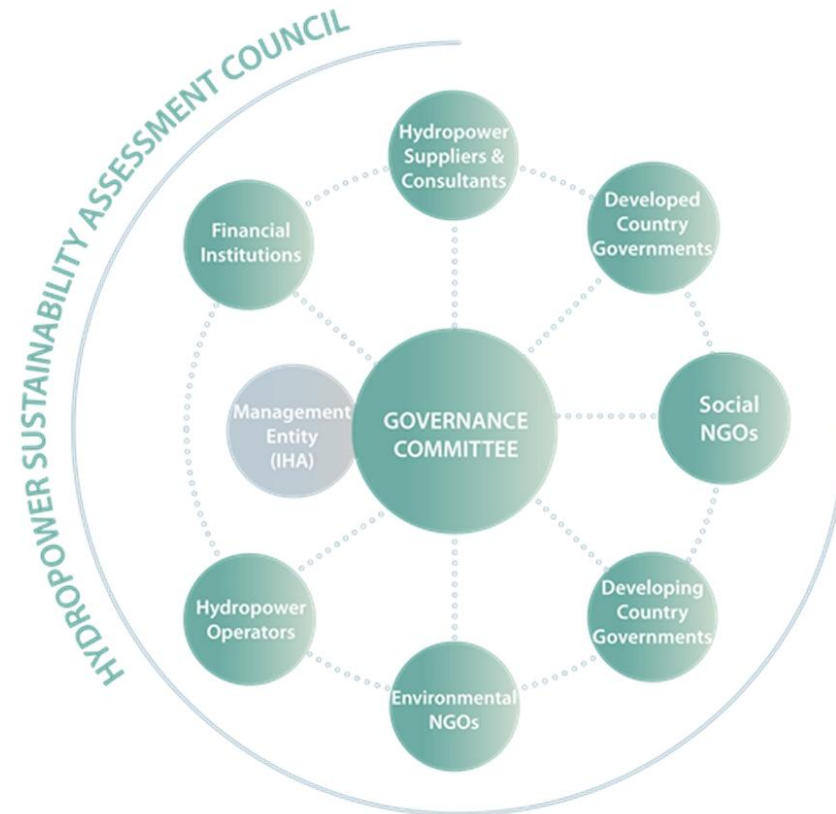
Shardara HPP JSC, Kazakhstan	Shardara	100 MW	Operation
Hydro Tasmania, Australia	Trevallyn	97 MW	Operation
Sarawak Energy, Malaysia	Murum	944 MW	Implementation
EON, Germany	Walchensee	124 MW	Operation
Landsvirkjun, Iceland	Hvammur	84 MW	Preparation
Statkraft, Norway	Jostedal	290 MW	Operation
Energia Sustentavel, Brasil	Jirau	3750 MW	Implementation
Manitoba Hydro, Canada	Keeyask	695 MW	Preparation





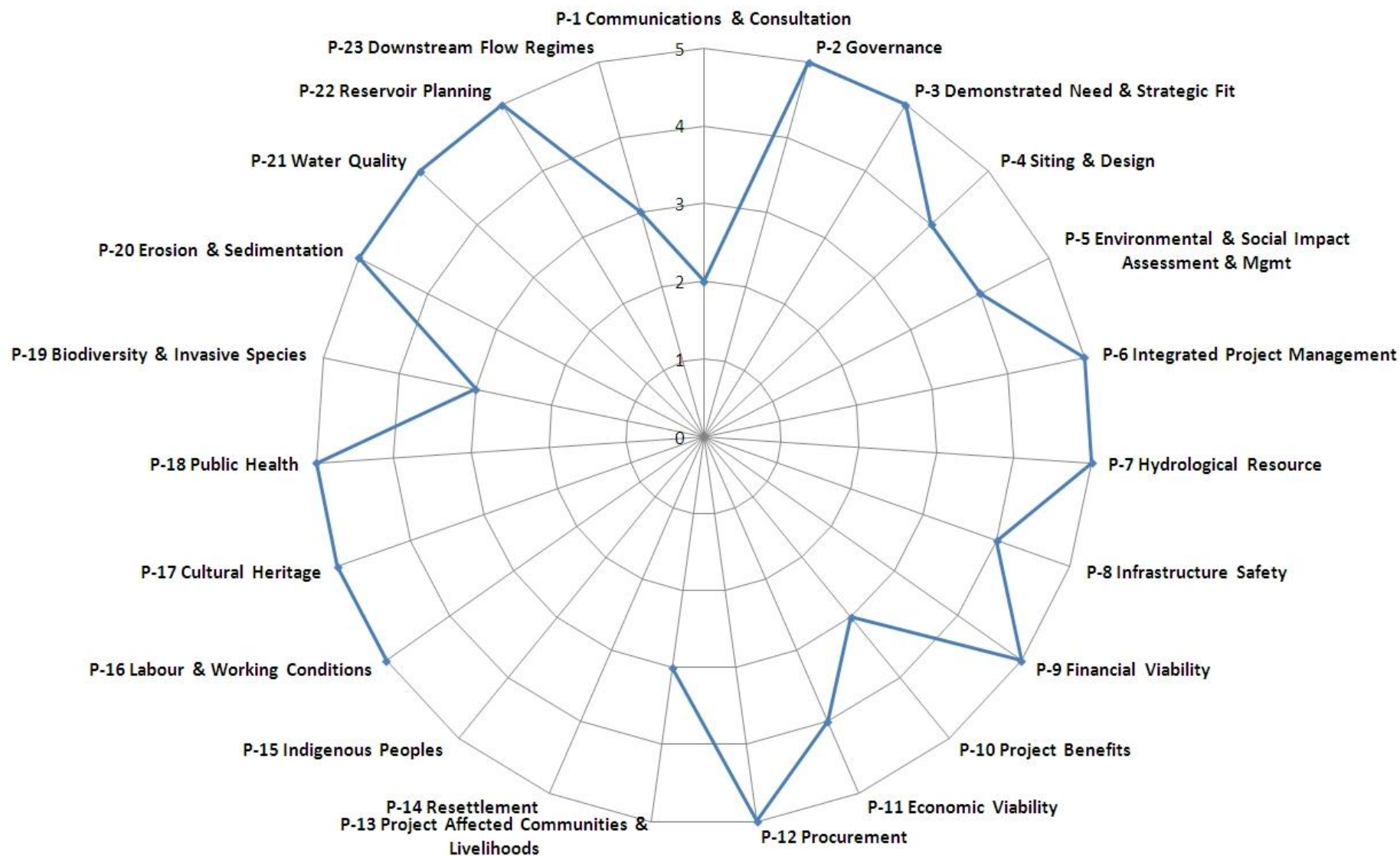
# Governance and Quality Control

- Governance
  - Terms and Conditions
  - Charter
  - Council
- Quality Systems
  - Accredited Assessors
  - Code of conduct and Licence
  - Experience and training
- Management
  - IHA acts as Management Entity
  - Provision of training
  - System for Assessor accreditation
  - Reporting Standards
  - Database of assessment





# Case Study – Results





# Case Study – Results

	Level 3: Significant Gaps against Basic Good Practice	Level 5: Significant Gaps against Proven Best Practice
Assessment	No significant gaps	<p><b>P5:</b> EIA and ongoing assessment process does not take broad considerations, risks and opportunities into account.</p> <p><b>P10:</b> Broad considerations not taken into account, No assessment to increase the development contribution.</p> <p><b>P11:</b> Assessment process does not take broad considerations into account.</p> <p><b>P19:</b> No assessment of invasive species and water-level impacts on Viðey Island.</p>
Management	<p><b>P1:</b> The absence of communications and consultation plans and processes developed for all project stages that set out communications and consultation needs and approaches for all stakeholder groups.</p>	<p><b>P10:</b> No process to anticipate and respond to emerging risks and opportunities regarding project benefits.</p> <p><b>P13:</b> No assessment of broader considerations and risks. No processes in place to anticipate and respond to emerging risks and opportunities.</p> <p><b>P19:</b> No reassessment of risks and opportunities since the EIA</p>
Stakeholder Engagement	No significant gaps	<p><b>P4:</b> Engagement of local residents specifically in siting and design.</p> <p><b>P10:</b> Inclusion of stakeholder groups in the assessment and planning of project benefits.</p> <p><b>P23:</b> No broad considerations in the downstream flow determination.</p>
Stakeholder Support	No significant gaps	No significant gaps
Conformance/ Compliance	No significant gaps	No significant gaps
Outcomes	No significant gaps	<p><b>P8:</b> There are no plans for addressing infrastructure safety beyond those of the project itself.</p> <p><b>P23:</b> Slow or no feedback on opinions / communication to/from stakeholders regarding the process leading to stakeholder dissatisfaction.</p>





# Report Text

## Management

### Analysis against basic good practice

***Scoring statement:** Communications and consultation plans and processes, including an appropriate grievance mechanism, have been developed at an early stage applicable to project preparation, implementation and operation that outline communication and consultation needs and approaches for various stakeholder groups and topics.*

A range of consultation processes have been undertaken from an early stage during project preparation (see 'Stakeholder Engagement' below). Direct links between landowners that will lose land and the contact details provided through newsletters and the lower Þjórsá website can be considered as a grievance mechanism for the preparation stage. The majority of stakeholders, interviewed during this assessment, though not all, felt able to contact Landsvirkjun directly to raise any concerns (via the website, letter or telephone). There are **no procedures to track and respond to grievances raised**, or plans for grievance mechanisms for the implementation or operation stages, but this is not considered to be a significant gap at this stage, as Landsvirkjun has enough time to develop such mechanisms in co-operation with other stakeholders.

Landsvirkjun developed a Communication and Stakeholder Engagement Plan for the preparation phase of the lower Þjórsá hydropower development in 2011, which sets out a process and tasks for communicating and engaging with local residents and elected representatives over a period of 6-11 weeks. **The plan has been on hold waiting** for the parliamentary decision on the National Master Plan.

However, **no plans for communications or consultation have been developed** that outline needs and approaches for the different stakeholder groups and topics, for the ongoing preparation stage, nor for the implementation and operation stages. It may be too early to develop these plans or processes for these later stages, but it is **not clear how any corporate or other process would prompt their development** or at what stage (contrast this with P-5 and the corporate processes that will prompt an environmental management plan). **This absence of communications and consultation plans for the later project phases, combined with the absence of a process or procedure which would prompt the development of such plans, is a significant gap against basic good practice.**







# Looking forward

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- The Early Stage Tool
- The Protocol in Africa
- Quality Control
- Thoughts on embedding sustainability in the sector

