

# Incorporating Sustainability into hydropower planning and development: The Hydropower Sustainability Assessment Protocol

Energy Sector Coordinating Committee Meetings  
April 2-3, 2014  
Bishkek, Kyrgyz Republic

Cameron Ironside, International Hydropower Association

# About IHA : Who we are

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**Not-for-profit organization, with members  
active in 100+ countries**

**One mission:**  
*advancing sustainable hydropower*

There are four key ways we achieve this:

Building a vibrant community

Creating a platform for knowledge

Advancing policies and strategies

Delivering value for members

# About IHA : Who we are ■■■■

- All parties with interest in hydropower: Investors, Financiers, Owners, Operators, Consultants, Specialists, Researchers, Equipment Suppliers, Contractors, Regulators, Agencies, Associations, Authorities and Academics...
- Public and Private Sector Organisations
- Individual and Corporate Members



# About IHA : What we do

## Vibrant community

World Hydropower Congress  
Regional forums  
Regional workshops  
Hydropower briefings



## Advancing policies and strategies

Leading role in industry-wide policy collaboration  
Active engagement in industry consultations  
Representation of industry to the wider world  
Partnerships with government, NGOs and financial institutions  
Participation in major energy, water and climate initiatives

-  Sustainability Protocol
-  IHA Offices
-  Forums and Congress

## Platform for knowledge

World hydropower database  
Hydropower Sustainability Assessment Protocol  
Annual Hydropower Report  
Green House Gas measurement guidelines  
Sustainability knowledge base

## Value for members

International presence (regional and national offices)  
Opportunity to shape industry strategy and activities  
Invitations to IHA business and members briefings  
Discounted registration fees for biennial World Congress  
Regular news and updates

# Role of hydropower worldwide



- Contributed to power systems for more than 100 years
- Provides ancillary services such as black start, grid and frequency regulation, load following, system optimisation capabilities
- Acts as an enabler for other, intermittent renewable energies
- Provides options in addressing the impacts of climate change, and water storage solutions

# Challenges for the sector



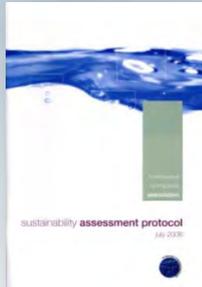
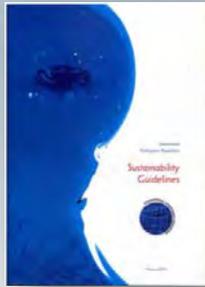
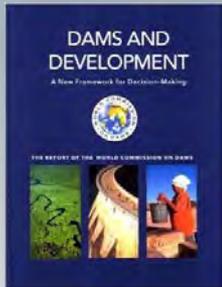
It is important recognise that any hydropower project will have impacts

Impact examples	Some solutions
Environmental: sedimentation, water quality, downstream flows, biodiversity impacts	Offset programmes, design features, integrated planning approaches, application of best practise learning
Social: resettlement, social licenses	Benefit sharing, livelihood enhancement
Public perception / acceptance: lack of social license	Communication
Financial: high upfront costs, cost overruns	Innovative financing schemes, financial-risk mitigation instruments

We know how to address most of these impacts at a project level – we need to assess where they are present, and implement the solutions

# Ensuring Sustainable Hydropower:

## The Hydropower Sustainability Assessment Protocol

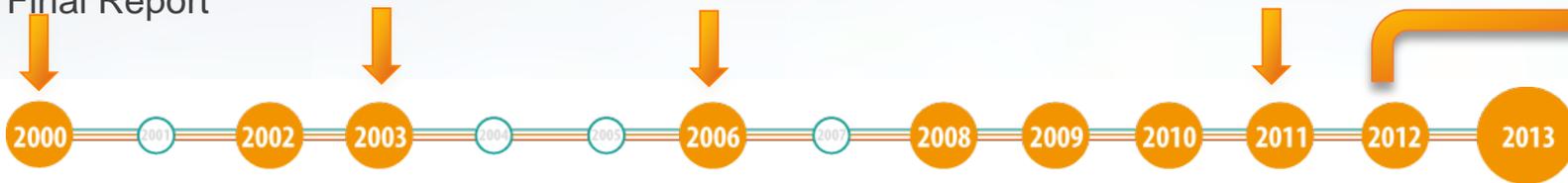


World Commission  
on  
Dams Final Report

IHA Sustainability  
Guidelines

Initial Sustainability  
Assessment Protocol

Official Protocol  
Launch

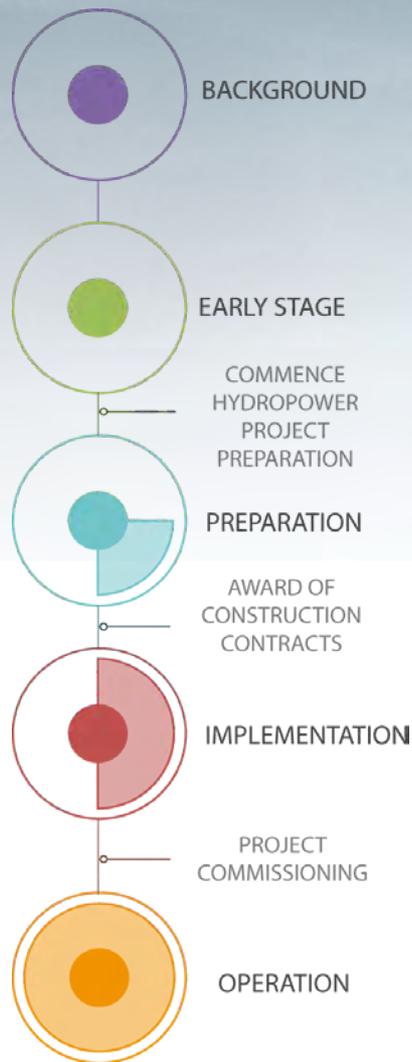


UNEP Dams and  
Development Project

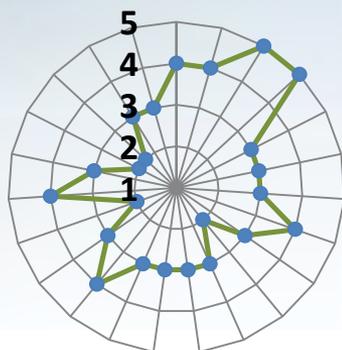
Multi-stakeholder  
Forum  
refines the Protocol

Hydropower Sustainability  
Assessment Council  
Protocol Training  
and Assessments  
Sustainability Partnerships  
Hydro4Life  
NORAD

# Hydropower Sustainability Assessment Protocol



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



Over 20 clearly-defined sustainability topics



Governed by a multi-stakeholder Council and Terms and Conditions

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

Preamble Questions | Team | Assessment Information | Evaluation | Evidence

✓ I-1 - Communica... | I-1 - Communications & Consultation

✓ I-2 - Governanc... | Relevant Background Information | Analysis | Associated Evidence | Scoring Summary

✓ I-3 - Environme... | Good Practice (Level 3) | Best Practice (Level 5)

✓ I-4 - Integrate... | Assessment

✓ I-5 - Infrastru... | Management

✓ I-6 - Financial... | Stakeholder Engagement

✓ I-7 - Project B... | Conformance/Compliance

A consistent, globally-applicable methodology

# Multi-stakeholder development

## Hydropower Sustainability Assessment Forum Members

### Developing Countries

Dr Yu Xuezhong, Research Professor, China **Institute of Water Resources and Hydropower Research, PR China**

Mr Zhou Shichun, Senior Engineer, China **Hydropower Engineering Consulting Group Co., PR China**

Mr Israel Phiri, Manager PPI, **Ministry of Energy and Water Development, Zambia**

### Developed Countries

Mr Geir Hermansen, Senior Advisor, Department of Energy, **Norad, Norway**

Prof Gudni A Johannesson, Director General, **National Energy Authority, Iceland**

Ms Kirsten Nyman, Policy Advisor for Sustainable Hydropower, **GTZ, Germany** (observer)

### Finance Sector - Economic Aspects

Ms Courtney Lowrance, Vice President, Environmental & Social Risk Management, **Citigroup Global Markets Inc**, representing the Equator Principles Financial Institutions Group

Ms Daryl Fields, Senior Water Resources Specialist, **The World Bank** (observer)

### Hydropower Sector

Dr Refaat Abdel-Malek, President, **International Hydropower Association**

Mr Andrew Scanlon, Representative, **International Hydropower Association**

### NGOs - Environmental Aspects

Mr David Harrison, Senior Advisor, Global Freshwater Team, **The Nature Conservancy**

Dr Joerg Hartmann, WWF Dams Initiative Leader, **World Wide Fund for Nature (WWF)**

### NGOs - Social Aspects

Mr Michael Simon, Lead, People, Infrastructure & Environment Program, **Oxfam**

Dr Donal O'Leary, Senior Advisor, **Transparency International**

**Forum Chair:** Mr André Abadie, Director, **Sustainable Finance Ltd.**

**Forum Coordinator:** Dr Helen Locher, Sustainability Forum Coordinator, **International Hydropower Association**

**Finance:** governments of Germany, Iceland and Norway

*2007 to 2010*

# Tailored approach

## Hydropower Sustainability Assessment Protocol

Background document:



Four methodology documents for four stages of development:

Early stage



Preparation



Implementation



Operation



# Sustainability topics 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

Complemented with a number of cross cutting topics

# Protocol topics (1)

	Preparation	Implementation	Operation
Communications and Consultation			
Governance			
Demonstrated Need and Strategic Fit			
Siting and Design			
Environmental and Social Impact Assessment and Management / Environmental and Social Issues Management			
Integrated Project Management			
Hydrological Resource			
Asset reliability and efficiency			
Infrastructure Safety			
Financial Viability			
Project Benefits			
Economic Viability			
Procurement			

# Protocol topics (2)

	Preparation	Implementation	Operation
Project Affected Communities and Livelihoods	●	●	●
Resettlement	●	●	●
Indigenous Peoples	●	●	●
Labour and Working Conditions	●	●	●
Cultural Heritage	●	●	●
Public Health	●	●	●
Biodiversity and Invasive Species	●	●	●
Erosion and Sedimentation	●	●	●
Water Quality	●	●	●
Waste, noise and air quality	●	●	
Reservoir Planning / Preparation and Filling / Management	●	●	●
Downstream Flow Regimes	●	●	●

# 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 commitments formal agreements with indigenous peoples are put

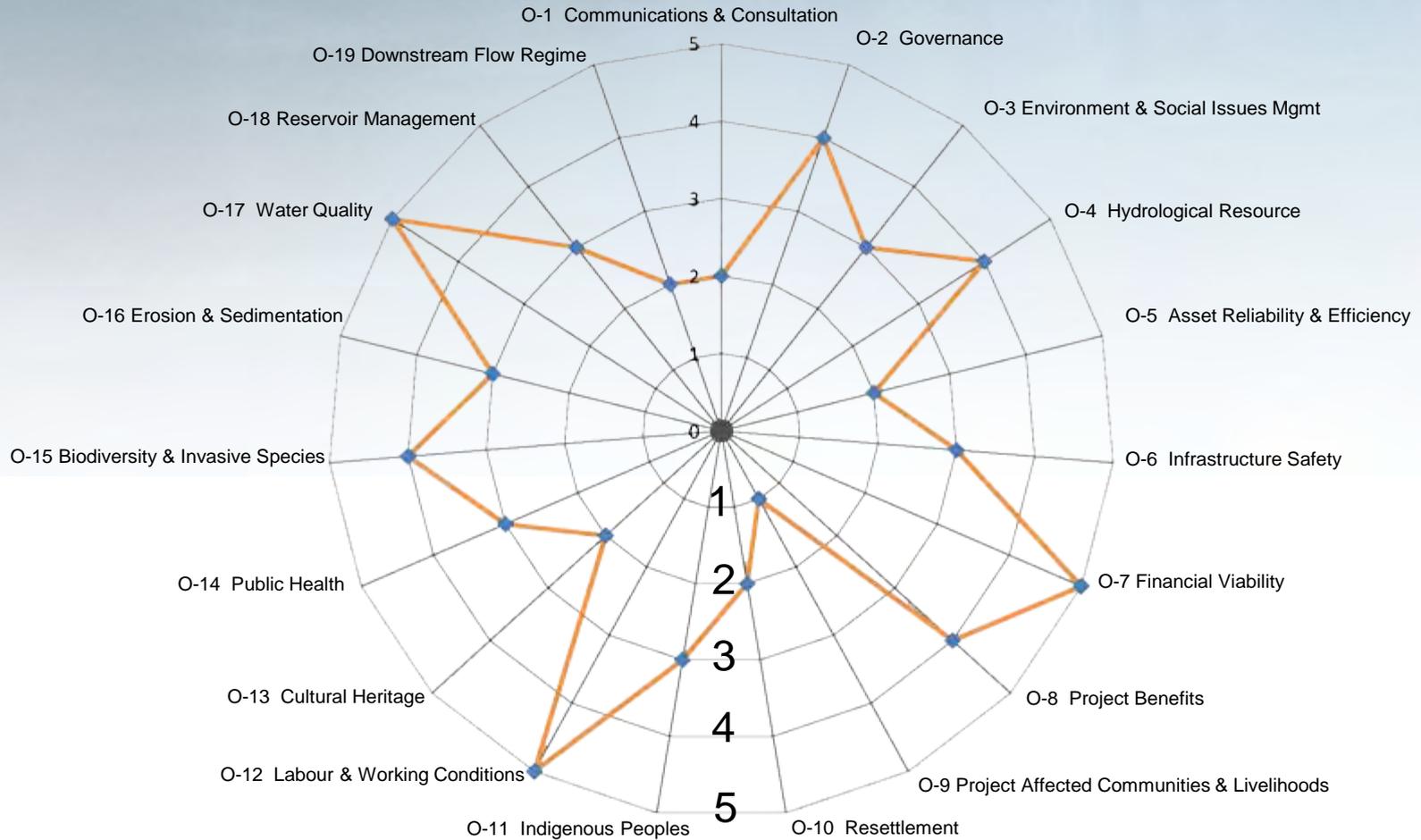
**Stakeholder Engagement:** Ongoing and mutually beneficial indigenous peoples to raise issues and get feedback.

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

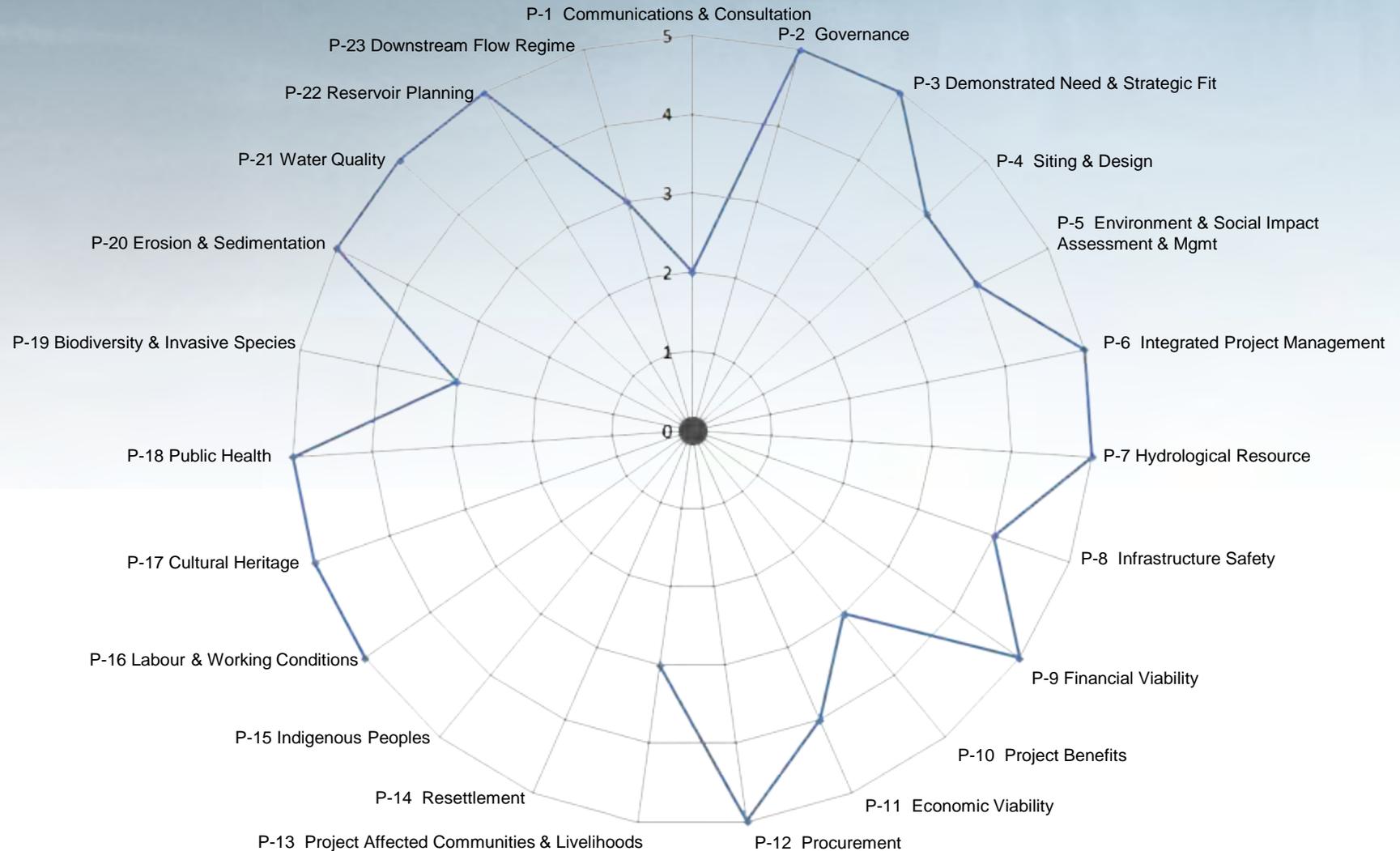
**Conformance/Compliance:** Processes and objectives indigenous peoples have been and are on track to be met with requirements and any indigenous peoples related commitments

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

# Sustainability Profile: Presentation of results



# Using the Protocol: Levels of understanding



# Using the Protocol: Topic analysis



	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>

# Using the Protocol: individual criteria 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.*

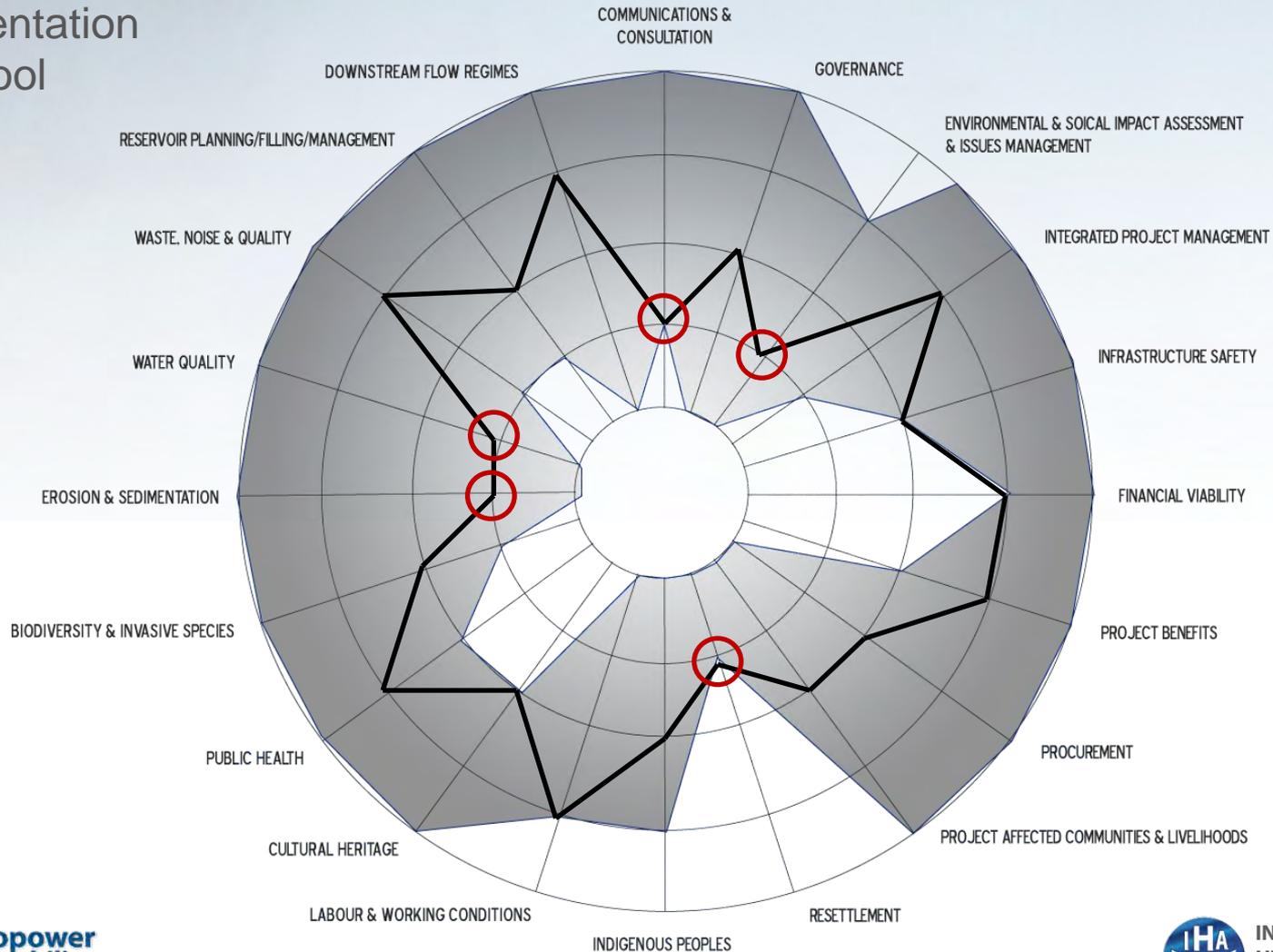
A range of consultation processes have been undertaken from an early stage during project preparation (see 'Stakeholder Engagement' below). Direct links between landowners that will lose land and the contact details provided through newsletters and the lower Þjórsá website can be considered as a grievance 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.**

# Range of Protocol results observed to date

## Implementation Stage Tool



# Application of the Protocol



# Case Study: Jirau

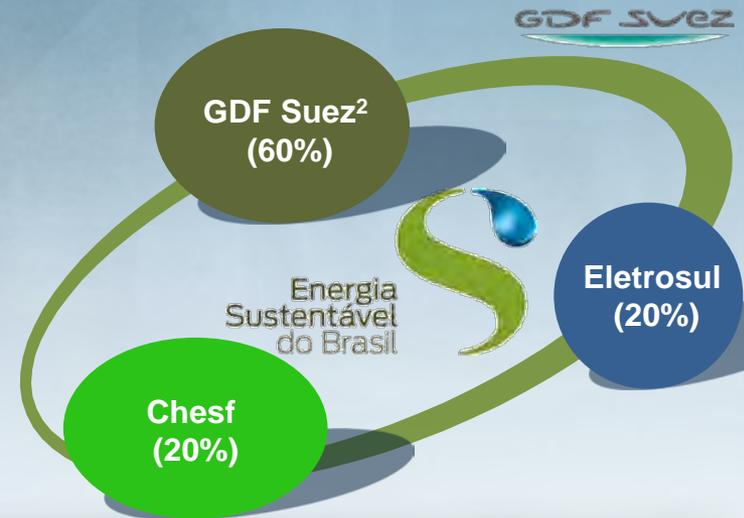
Project of public interest, developed as Public Private Partnership with domestic development finance (NAMA)

Located at Ilha do Padre on the Madeira River, municipality of Porto Velho, Rondônia state

Run of River plant off 3.750 MW allows to supply electricity to 10 million households

Construction period Q4 2008 – 2015 with COD of 1<sup>st</sup> turbine mid 2012

First Hydro Power Plant to conduct official Protocol Assessment for the implementation phase



# Case Study: Jirau

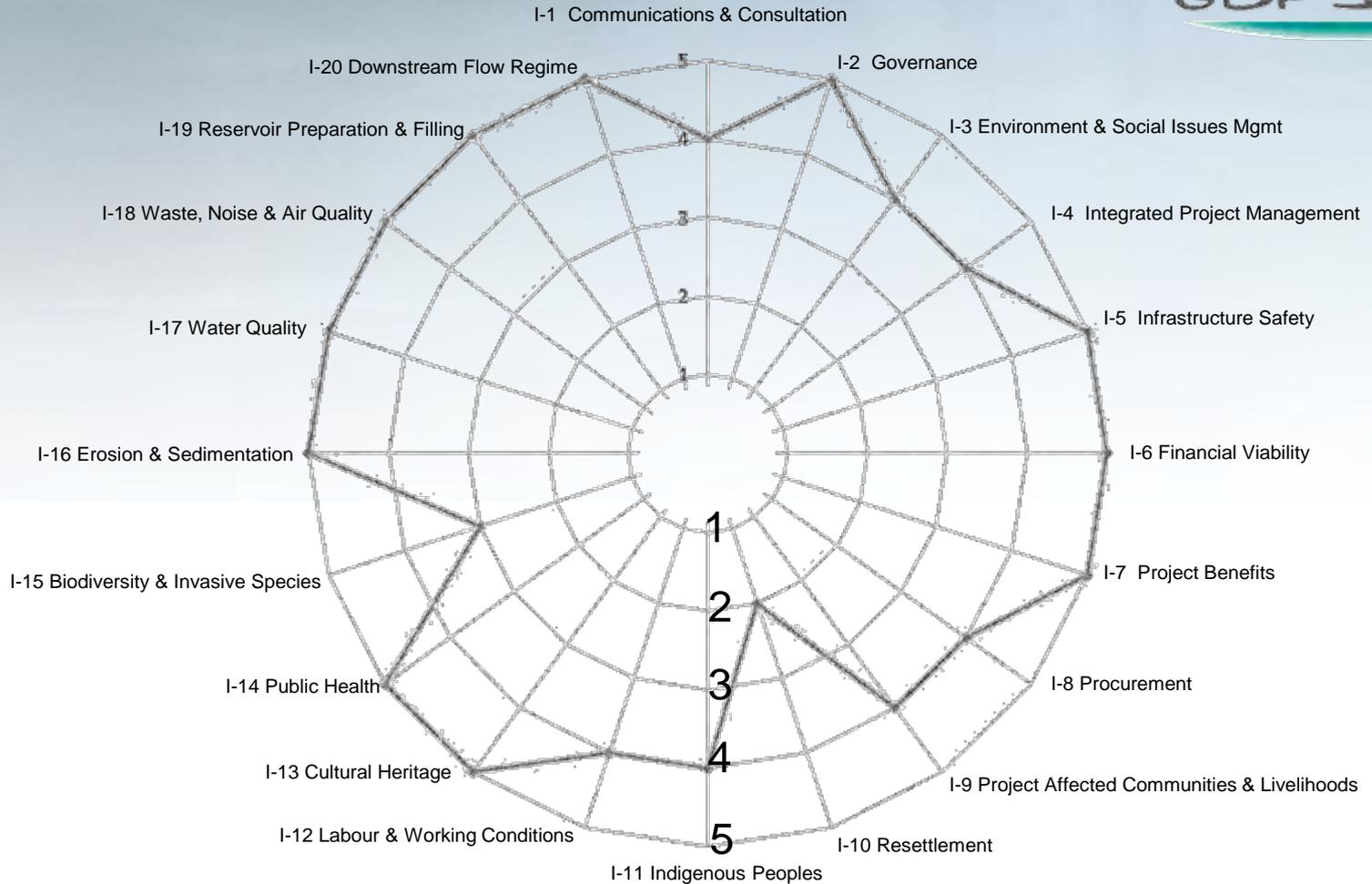
## Motivations for engaging with the Protocol

GDF SUEZ

Global background:	Motivations for the Jirau HPP
Hydropower (HP) shall double by 2050 if we were serious about climate change mitigation (IEA).	Basis to request Annex-I Party approval to use CERs in EU and Australian ETS as alternative to WCD.
HP potential located in developing countries with fast growth.	Independent, professional assessment of socio-environmental performance to identify opportunities for improvement.
HPs energy storage and fast response capacity are important to match supply from intermitting NCREs.	Improve communication and relationship with distant stakeholders (general public, ideological NGOs & finance community).
High capital costs and long construction time increase due to controversial discussions of sustainability.	Give visibility to enhance & consolidate socio-environmental project benefits.

**Poor regulatory environment, cost of financing, concerns about sustainability and lack of markets or support for project benefits are key barriers.**

# Case Study Jirau: Sustainability profile



# Case Study: Jirau

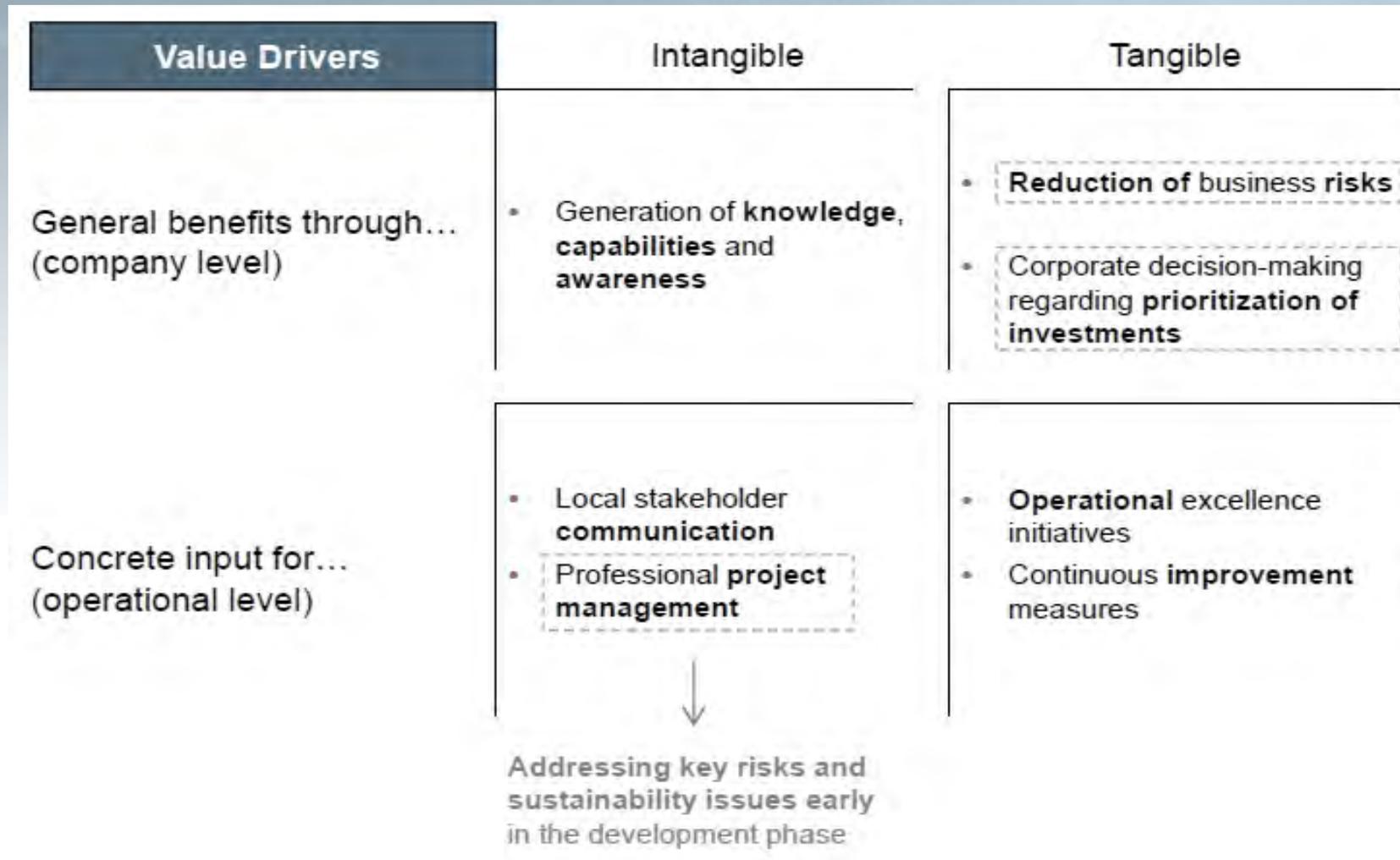
## Added value for the company



	ESBR found:
Comprehensive synthesis, with a concise summary of performance	<p>“The Protocol is a concise, well designed tool”.</p> <p>“The fact that aspirations, values and priorities behind the criteria are diverse and comprehensive allows new aspects of the project to be seen”.</p>
Third party judgement	<p>“Its value is in the process of re-evaluating and questioning programs and practices in the light of the criteria which have been defined in an independent multi-stakeholder process with diverse and international backgrounds”.</p>
Information management	<p>“It can substitute multiple other requirements and audits rather than being an expensive additional task”.</p> <p>“An assessment prompts diligent tracking and documentation on all aspects. It is not enough to have ambitious programs and practices, they also need to be referenced and auditable”.</p>

# Case Study: E.ON

## Synopsis of Protocol Value



# Case Study: Murum

## Motivation for using the Protocol

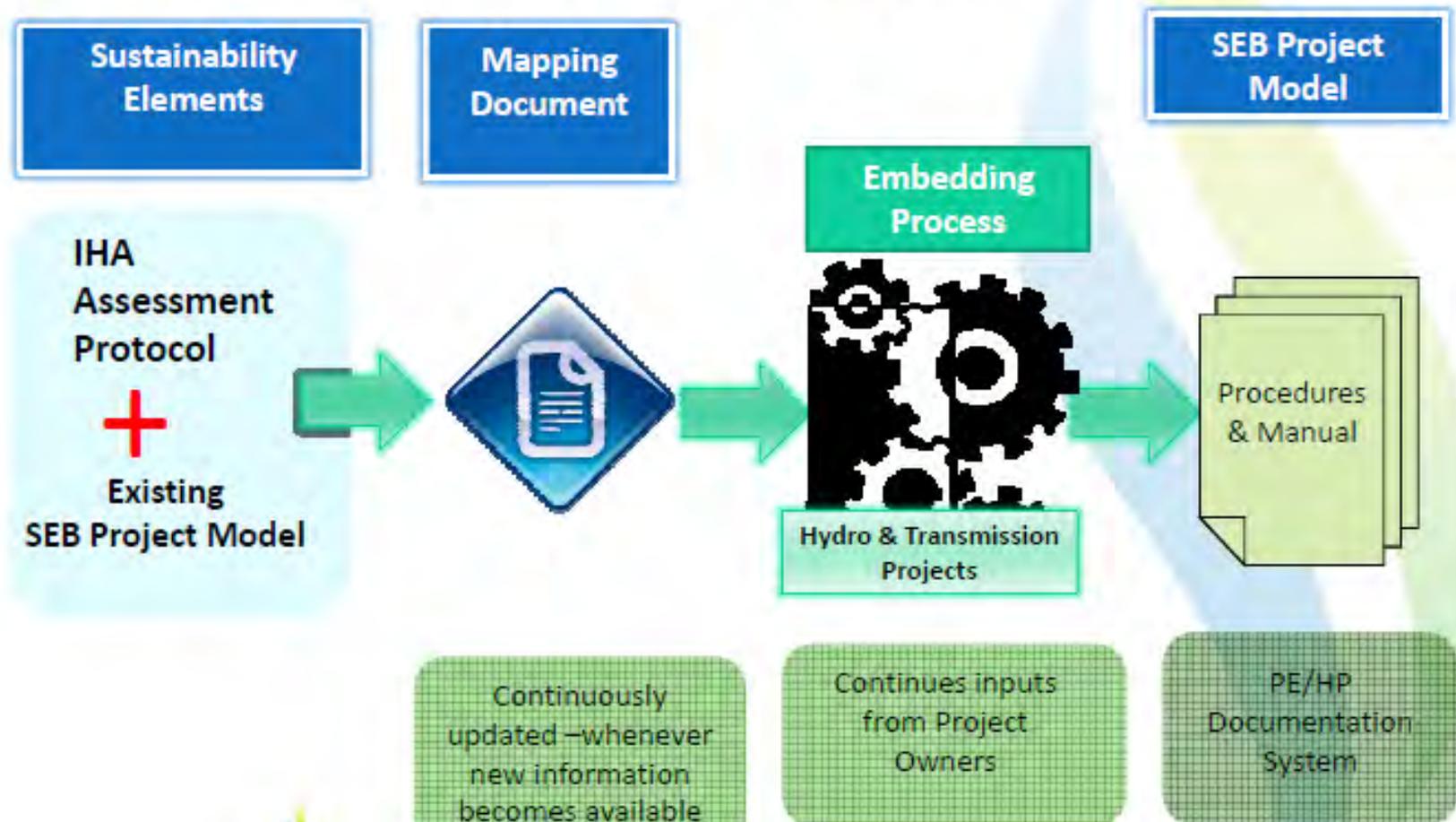
### Why?

- **Preparing SEB's Hydro projects for the next IHA assessment**
- **Commercial interests**
  - Access to capital financing (e.g. Over 60 leading banks has adopted IFC Performance Standard and Equator Principles)
  - Good reputation (e.g. Low environmental loading)
  - Energy intensive investors
- **Effective processes** by adopting more consistent, holistic and standard approaches
- **Engage stakeholders/communities positively**
- **Preparation for Annual Sustainability Report**
  - Means of Communication
- **Enhance risk management & enhance brand protection**
- **Evolving environmental policies (National & Internationally)**
  - Corporate Governance Report (Malaysia)
  - Environment ,Social and Governance Reporting (Hong Kong)

# Case Study: Murum

Incorporation into business systems

## Overview of Embedding Process



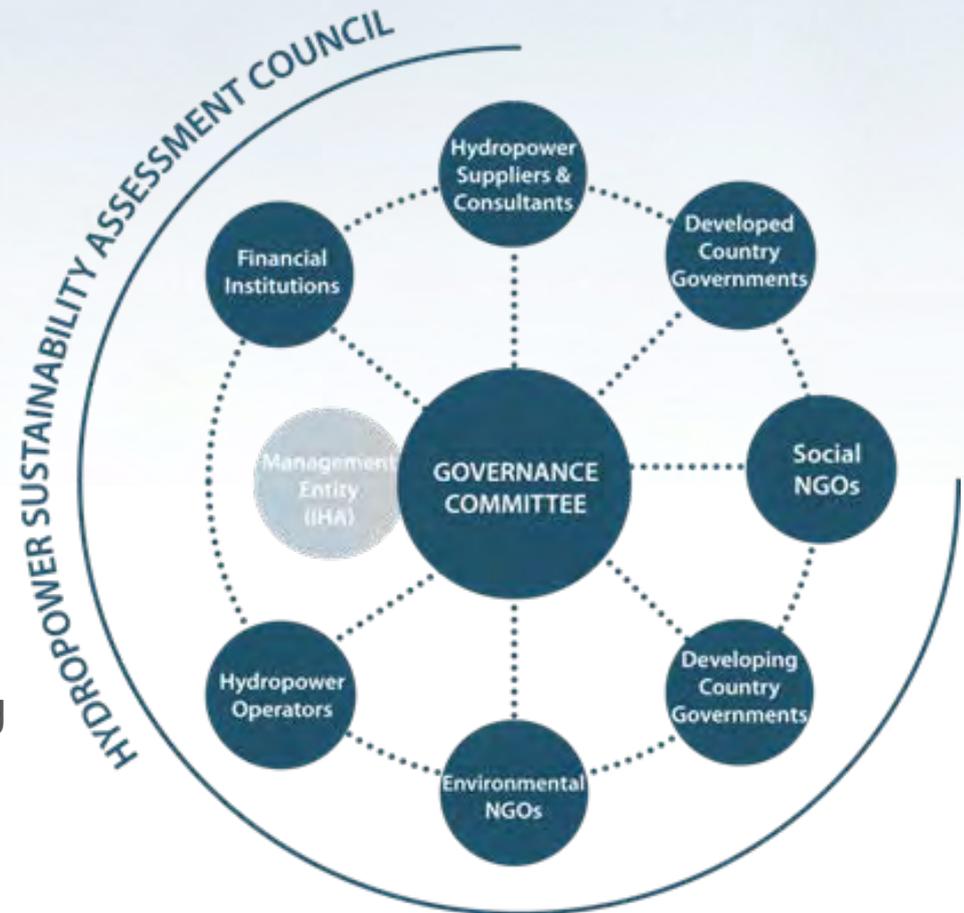
# Governance and quality control

## Hydropower Sustainability Assessment Council

- Hydropower Sustainability Assessment Council, governed by a **Charter**
- **Terms and conditions** for use of the Protocol defining official use

## Accredited Assessors

- Only **Accredited Assessors** (AA) authorised to use the Protocol commercially
- Stringent qualifying criteria, training and systems ensure AA maintain **highest quality of assessments, and uniformity of results**



# Training and capacity building

Various training courses provided on the theory of the Hydropower Sustainability Assessment Protocol and its application



Courses tailored to suit:

- Hydropower developers
- Regulators
- Civil society
- Accredited Assessors
- Sustainability Partnerships

# Training and capacity building

## Training typically entails:

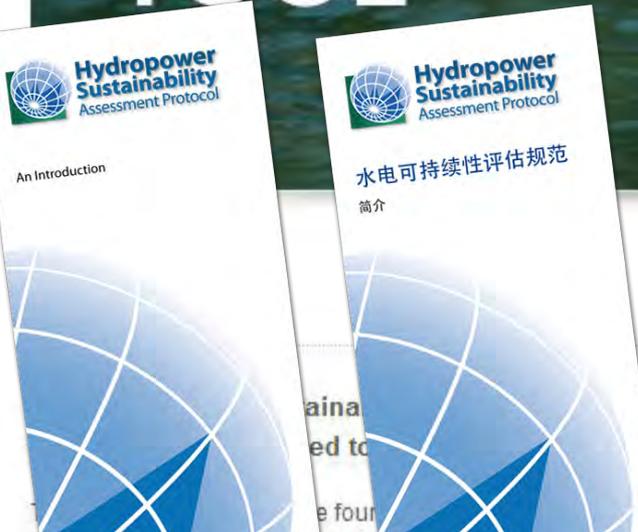
- What the Protocol is and how it works
- How to use the Protocol
- Roles for different stakeholders
- How to incorporate the Protocol into business systems
- The Protocol as a common language for problem solving

## Sustainability Partnerships are really useful means of starting to use the Protocol:

- The Partnerships are designed around a project to be assessed
- They are made up of three elements: training, pre-assessment and then assessment of the selected project
- All project stakeholders are involved in the training, and the results can be shared
- Enables practical demonstration of the value of the Protocol

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# WORLD-LEADING SUSTAINABILITY TOOL



Download the Protocol

Protocol is an enhanced sustainability assessment performance in the hydropower sector.

development: Early Stage, Preparation,



# Thank you

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