



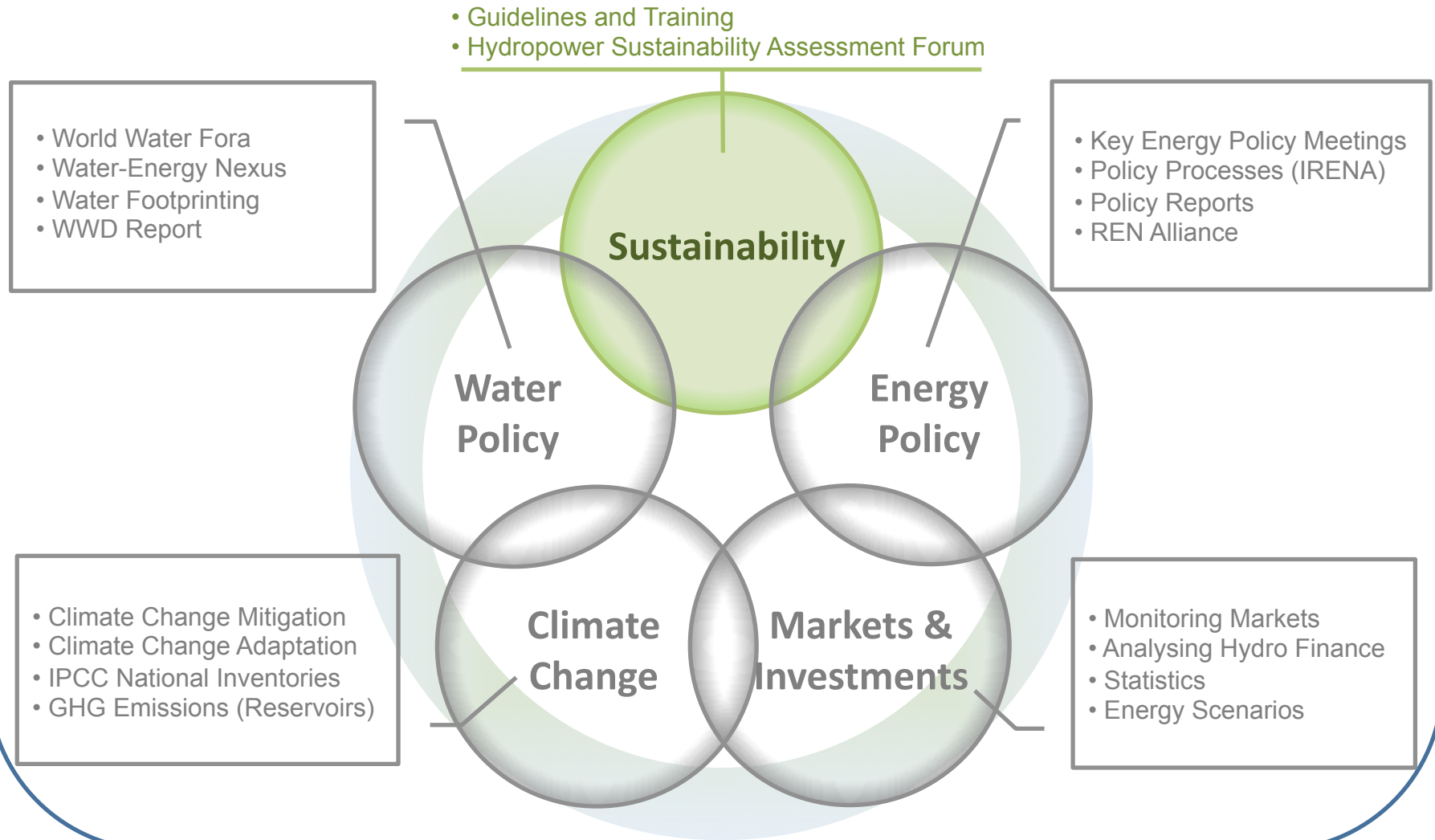
Bangkok, 24 September 2010

Sustainable Hydropower Financing in the Mekong River Basin

SUSTAINABILITY ASSESSMENT PROTOCOL

Roger Gill, Vice President, International Hydropower Association

IHA's Work Programme: Sustainability





WILL THEY
EVER GET IT
DAM RIGHT?

YOU TELL ME..!



Hydropower Sustainability Assessment Forum



The HSAF is a group of representatives from different sectors who have collaborated with IHA since March 2008 to review and recommend enhancements to the IHA Sustainability Assessment Protocol (2006) as a tool to measure and guide performance in the hydropower sector.



Members of the Hydropower Sustainability Assessment Forum

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, Manager Business Sustainability, **Hydro Tasmania**

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

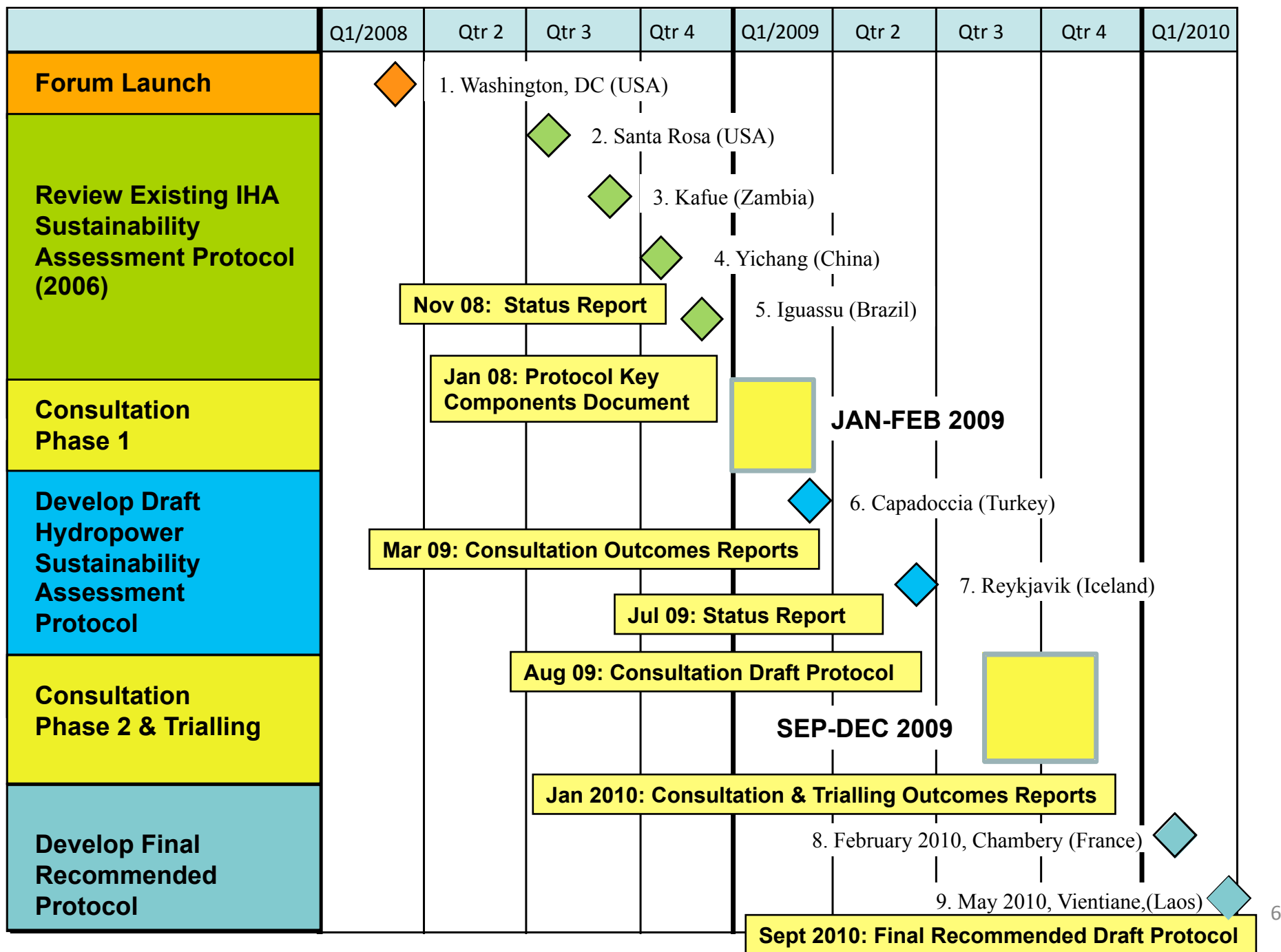
- Mr Michael Simon, Lead, People, Infrastructure & Environment Program, **Oxfam**
- Dr Donal O'Leary, Senior Advisor, **Transparency International**

Forum Chair

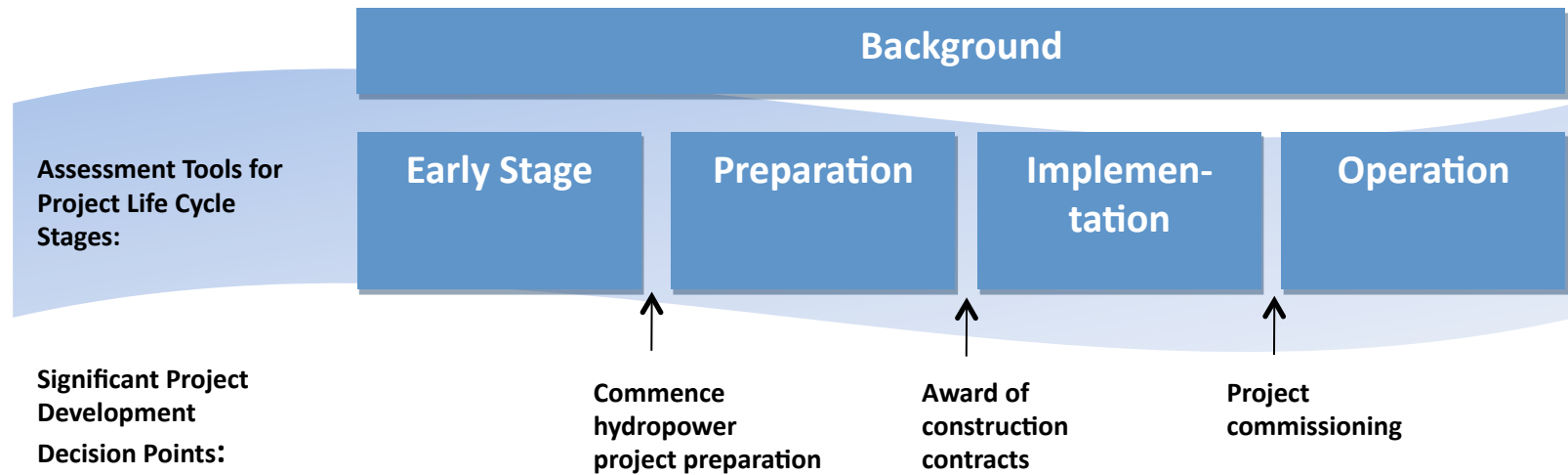
- Mr André Abadie, Director, **Sustainable Finance Ltd.**

Forum Coordinator

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



Protocol Structure



Draft Protocol Trials

- Early Stage – three
- Preparation – six
- Implementation – eight
- Operation – seven

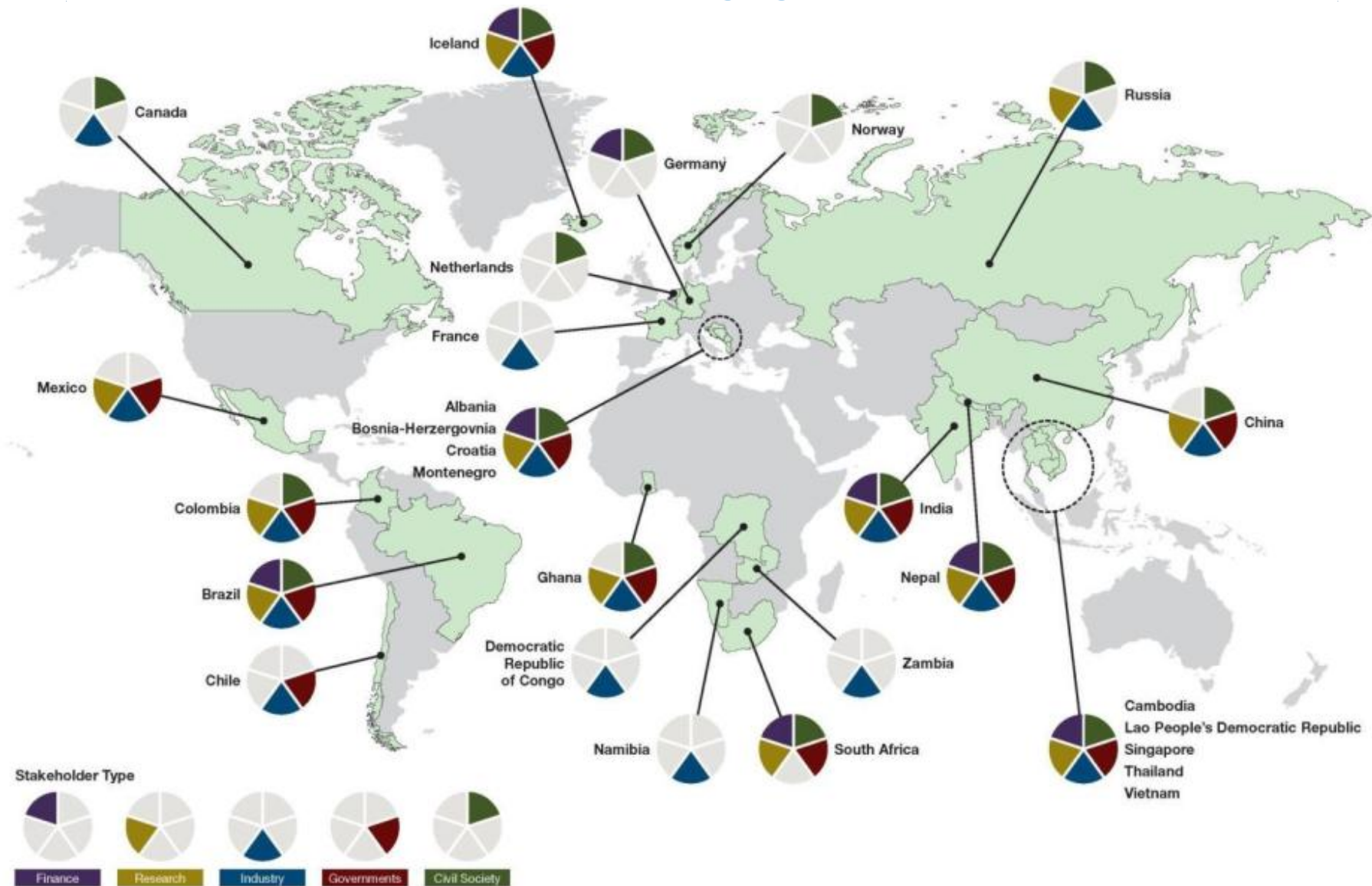
Translations

Information Materials – French, Khmer, Lao, Serb/Croat, Thai, Vietnamese

Full Draft Protocol – Mandarin, Portuguese, Russian, Spanish



HSAF Stakeholder Engagement Activities



The interest group following the initiative comprises 1,933 individuals

Example of Range of Topics

Integrative	Environmental	Social	Technical	Economic / Financial
Demonstrated Need	Downstream Flow Regimes	Resettlement	Siting & Design	Financial Viability
Policies & Plans	Erosion & Sedimentation	Indigenous Peoples	Hydrological Resource	Economic Viability
Governance	Water Quality	Public Health	Infrastructure Safety	Project Benefits
Integrated Project Management	Biodiversity & Invasive Species	Cultural Heritage	Asset Reliability & Efficiency	Procurement

Topics in the Early Stage

- preliminary screening tool, to assess the strategic environment from which proposals for hydropower projects emerge
- differs from the other three assessment tools in that it is an assessment guide but not a scoring protocol

ES-1 Demonstrated Need

ES-2 Options Assessment

ES-3 Policies & Plans

ES-4 Political Risk

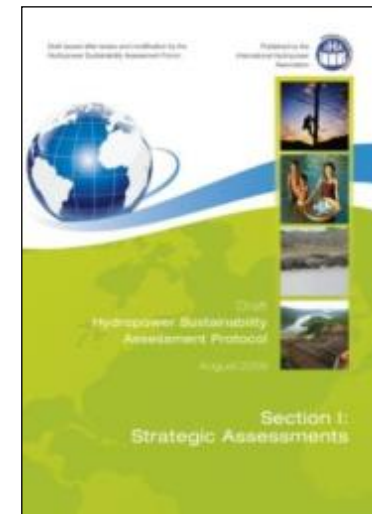
ES-5 Institutional Capacity

ES-6 Technical Issues & Risks

ES-7 Social Issues & Risks

ES-8 Environmental Issues & Risks

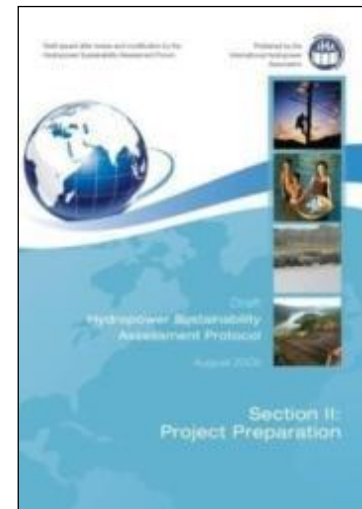
ES-9 Economic & Financial Issues & Risks



Topics in the Preparation Stage

P-1: Consultation & Communications
P-2: Governance
P-3: Demonstrated Need & Strategic Fit
P-4: Siting & Design
P-5: Environmental & Social Impact
Assessment & Management
P-6: Integrated Project Management
P-7: Hydrological Resource
P-8: Infrastructure Safety
P-9: Financial Viability
P-10: Project Benefits
P-11: Economic Viability
P-12: Procurement
P-13: Project-Affected Communities & Livelihoods
P-14: Resettlement
P-15: Indigenous Peoples
P-16: Labour & Working Conditions

P-17: Cultural Heritage
P-18: Public Health
P-19: Biodiversity & Invasive Species
P-20: Erosion & Sedimentation
P-21: Water Quality
P-22: Reservoir Planning
P-23: Downstream Flow Regimes



Topics in the Implementation Stage

I-1: Consultation & Communications

I-2: Governance

I-3: Environmental & Social Issues Management

I-4: Integrated Project Management

I-5: Infrastructure Safety

I-6: Financial Viability

I-7: Project Benefits

I-8: Procurement

I-9: Project-Affected Communities & Livelihoods

I-10: Resettlement

I-11: Indigenous Peoples

I-12: Labour & Working Conditions

I-13: Cultural Heritage

I-14: Public Health

I-15: Biodiversity & Invasive Species

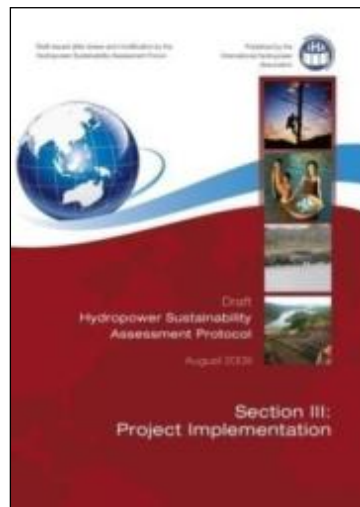
I-16: Erosion & Sedimentation

I-17: Water Quality

I-18: Waste, Noise & Air Quality

I-19: Reservoir Preparation & Filling

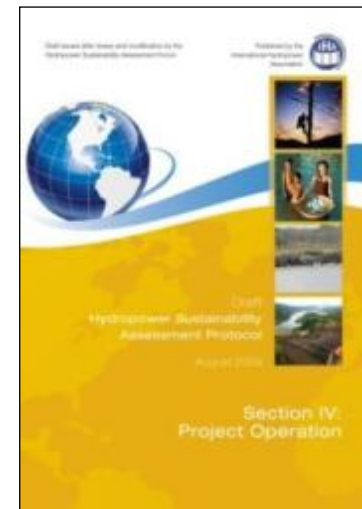
I-20: Downstream Flow Regimes



Topics in the Operation Stage

O-1: Consultation & Communications
O-2: Governance
O-3: Environmental & Social Issues Management
O-4: Hydrological Resource
O-5: Asset Reliability & Efficiency
O-6: Infrastructure Safety
O-7: Financial Viability
O-8: Project Benefits
O-9: Project-Affected Communities & Livelihoods
O-10: Resettlement
O-11: Indigenous Peoples
O-12: Labour & Working Conditions
O-13: Cultural Heritage
O-14: Public Health

O-15: Biodiversity & Invasive Species
O-16: Erosion & Sedimentation
O-17: Water Quality
O-18: Reservoir Management
O-19: Downstream Flow Regimes



Statements of Description & Intent

Typical Protocol Topic

Assessment Guidance Notes – definitions, examples, etc

0-17: Water Quality

This topic addresses the management of water quality issues associated with the operating hydropower facility. The intent is that water quality in the vicinity of the operating hydropower facility is not adversely impacted by activities of the operator; that ongoing or emerging water quality issues are identified and addressed as required; and commitments to implement measures to address water quality are fulfilled.

Scoring:

Scoring Levels from 1-5

- 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:** Ongoing or emerging water quality issues have been identified, and if management measures are required then monitoring is being undertaken to assess if management measures are effective.
 - Management:** Measures are in place to manage identified water quality issues.
 - Conformance/Compliance:** Processes and objectives in place to manage water quality issues have been and are on track to be met with no significant non-compliances or non-conformances, and water quality related commitments have been or are on track to be met.
 - Outcomes:** Negative water quality impacts arising from activities of the operating hydropower facility are avoided, minimised and mitigated with no significant gaps.
- 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, identification of ongoing or emerging water quality issues takes into account both risks and opportunities.
 - Management:** In addition, 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:** In addition, water quality in the area affected by the operating hydropower facility is of a high quality; or the facility has contributed or is on track to contribute to addressing water quality issues beyond those impacts caused by the operating hydropower facility.

Assessment Guidance:

Water quality issues examples at the operation stage include: reduced oxygenation, aseasonal temperatures, stratification potential, pollutant inflow, nutrient capture, algal bloom potential, release of toxicants from inundated sediments, chemical or waste spills, etc.

Assessment processes for water quality may be built into other plans and processes, e.g. visual inspections undertaken for operational purposes.

Measures to address water quality at the operation stage may include, for example: aeration features to address dissolved oxygen levels; water management measures such as to ensure adequate water circulation and through-flow; vegetation management to address organic decomposition; addressing pollutants from non-project activities such as sewage, wastes, contaminated sites, etc.

Avoid, minimise, mitigate and compensate is a concise expression for what is understood to be a sequential process. Measures to avoid or prevent negative or adverse impacts are always prioritised, and where avoidance is not practicable, then minimisation of adverse impacts is sought. Where avoidance and minimisation are not practicable, then mitigation and compensation measures are identified and undertaken commensurate with the project's risks and impacts.

Water quality opportunities may include, for example: addressing pollutants from non-project activities such as sewage, wastes, contaminated sites; groundwater stabilisation, improved water quality through oxygenation or temperature dispersion; new technologies; new service providers; partnerships with community waterway health monitoring groups; participating in or forming catchment management groups to address water quality issues at the catchment level; etc.

Potential interviewees: power station or company environmental manager; government representative (e.g. from environment department), independent expert

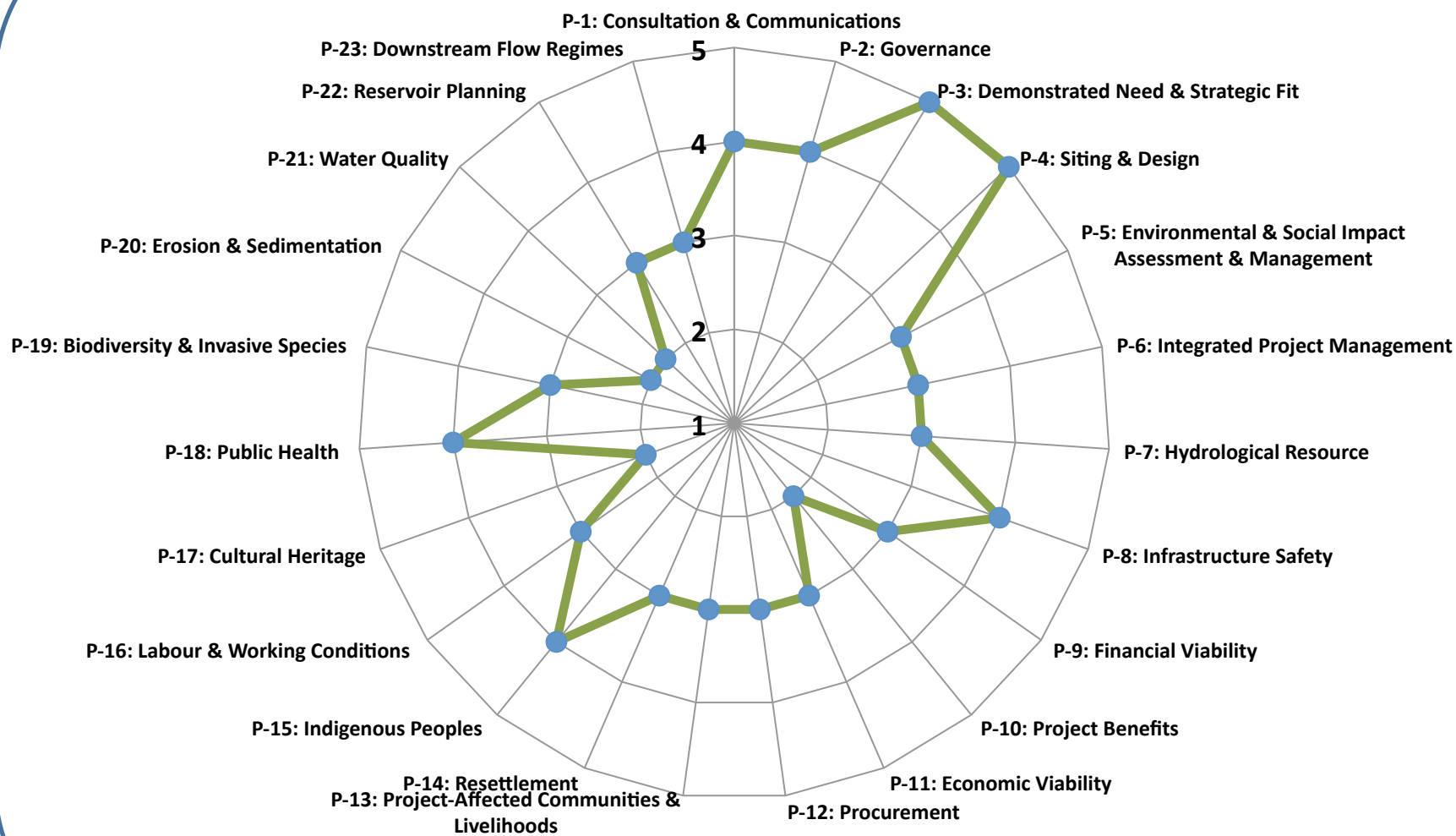
Examples of evidence: water quality monitoring reports; water quality management plans

Examples of Potential Interviewees & Evidence

Level 3 - Statements of Basic Good Practice

Level 5 - Statements of Proven Best Practice

Sustainability Profile: An Example of How Results Could be Presented



Present Status and Next Steps

- As of the 1st September, the Forum members have completed their objective, and presented a **Recommended Final Draft Protocol** for consideration on adoption (in the case of IHA) and endorsement/support from Forum organizations and observers.
- **Terms and conditions** of Protocol use will be negotiated prior to decisions of Forum organisations on adoption and endorsement.
- Meetings and dialogue with Forum members will progress on design of the **follow-on process** (e.g. governance, management, consultative entities).
- A three-year phase of work (up to the end of 2013) is planned to cover:
 1. **Developing training materials** and conducting intensive training activities
 2. **Protocol applications** with a range of **Sustainability Partners** throughout the world
 3. **Capturing results** in a database for learning, calibration, and possible review of the Protocol