Overview on best practices and the way forward

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Jean-Étienne Klimpt

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- Introduction
- World Bank study on «Quality Management of Safeguards in Dam Projects»
  - -Key factors of success
  - -Main reasons of failure
- Best Practices:some examples
- Conclusion:the way forward

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- Introduction

Since its beginning Hydropower has delivered huge benefits and has supported economic and social development at national, regional and most of the time local level and created very often new healthy ecosystems.

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- Introduction (Suite)

But some projects have being surrounded by controversy and active and fierce opposition due to their significant environmental and social impacts.

Impacts on biodiversity, on downstream habitats, on population settlements and livelihood, on cultural and natural heritage and on poor and tribal populations…

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Introduction (Suite)

Since the last 30 years we have learned how to plan, design, built and operate better hydro projects.

-World Bank Safeguards. International Energy Agency Guidelines, World Commission on Dams principles and core values, and the new International Hydropower Association Sustainability Guidelines.

-«Good» projects are more and more recognized and documented

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World Bank study on «Quality Management of Safeguards in Dam Projects»

- -Key factors of success
- -Main reasons of failure

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- The World Bank has entrusted Hydro-Québec International (V Roquet&Ass and J-E klimpt) with the tasks of:

  a) undertaking case studies on successful dam projects

  b) preparing generic terms of reference to guide users involved in the planning and implementation of such projects

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Criteria used to select the 8 case studies

- projects that are said to be a success in quality management of environmental and social issues
- when possible, projects that used and still use a formal EMS
- projects in developed and developing countries
- projects of different size and type

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Selected cases

- **Akosombo**1962-1965 Ghana 1,072 MW reservoir:8482 km^2
- **Arrow Lakes**1999-2002 Canada (British Columbia)185 MW
- **Chilime**1995-2003 Nepal 22.1 MW run-of-river
- **King River**1983-1992 Australia (Tasmania)144 MW reservoir:54 km^2
- **Kukule** 2003 Sri Lanka 80 MW run-of-river Reservoir:88ha
- **Palmiet**1983-1988 South Africa 400 MW pump storage Reservoirs:73.4 and155.4 ha
- **Sainte-Marguerite-3** 1994-2003 Canada (Québec)
- 882 MW Reservoir:253 km2
- **Salto Caxias** 1995-1998 Brazil (Parana)1,240 MW reservoir:144 km2

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Four types of persons were interviewed by local consultants

- A representative from the dam owner or operator
- A representative of a national NGO or local NGO or other civil society organization that was involved with the project
- A government representative from the body which emitted the permit for the project construction and/or operation and was responsible for the monitoring of the project environmental and social performance
- A representative from the local, affected populations

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- The case studies were documented on the basis of a semi-directed survey questionnaire designed to explore the four major project stages (options assessment, planning and design, construction and operation) and how and why quality objectives were and are being met.

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Main lessons learned

from the 8 Case Studies

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- The main lessons learned from the 8 cases studies were that factors of environmental and social success or failure were rather similar from one dam project to another, irrespective of their geographic location or development context.
- No big surprises. fits perfectly with what I learned in my long career with Hydro-Québec

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Main Factors of Success

- *Commitment of dam owner, builder and operator to deliver environmental and social quality*, which includes:
  - Strong upper management commitment
  - Strong commitment of the on-site project manager
  - Demonstrated will to resolve unexpected impacts and issues
  - Dedicated funding and dedicated staff
  - Transparency and integrity.

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Main Factors of Success (suite)

- *Community and local population involvement,* which includes:
  - Public participation in the decision process
  - Community involvement from the start
  - Involvement and pressure of national and local NGOs
  - Well organized communities
  - Presence of a complaints committee
  - Presence of monitoring and follow-up committees
  - Excellent and open communication.

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Main Factors of Success (suite)

- *Good environmental and social management plan,* which includes:
  - Good EIA-SIA and EMP & SMP/RAP
  - Clear environmental and social guidelines
  - Clear documented targets and commitments
  - Impacts and mitigation/compensation measures monitoring
  - Transparency and integrity.

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Main Reasons for failure

- Lack of commitment from the project owner and upper management
- Lack of dedicated funding and staff
- Unexpected impacts and lack of will to solve them
- Lack of scientific and baseline knowledge
- Lack of monitoring by environmental authorities

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Main Reasons for failure (suite)

- Lack of options assessment and EIA-SIA and EMP & SMP/RAP
- Lack of awareness by affected families
- Lack of recognition of affected people's representatives
- Poorly documented commitments and promises
- Local communities not well organized to defend their rights
- Vague environmental and social targets

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Main Reasons for failure (suite)

- Lack of community involvement from the start
- Lack of consultation program and poor communication processes
- Inadequate compensation
- Community divisions created by compensation agreement and package
- To short negotiation and approval process for agreement
- Lack of NGO pressure
- Lack of monitoring of impacts.

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A project can be seen as successful

- When it meets its economic and financial targets
- When it meets its technical expected performances
- When it maximizes its positive output and minimizes its environmental footprints
- When it meets commitments and promises made to local communities
- When governments, local authorities ,local population, ngos and the dam owner agree to say that it is a success and no major controversy arises

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Best Practices:

some examples

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- Credible project Justification.
- Base on up to date (energy, land use, water, poverty alleviation, economic and social development) governmental policies adopted through a participatory process at the national or regional level (province or state)
- Base on a comprehensive options assessment considering demand and supply side options

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- Proper site selection and design

- Base on the best environmental and social guidelines taking in count each country specific situation
- Avoiding or minimizing population resettlement ,land flooding, modifications to rare or endangered species habitats, impacts on Indigenous communities, impacts on exceptional landscape and cultural heritage, impacts on downstream up to the river estuary……
- Improving local impacted population livelihoods
- Maximizing the project output (MW-TWH or cubic meters of water storage)
- Minimizing reservoir sedimentation and optimizing flood management
- Allowing the best multi usages combination

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- Sufficient expected rate of return to be able to provide
  - Adequate resources for implementation up to the best standards of mitigation and long-term compensation and/or benefit sharing arrangements with the affected communities.
- and to sustain
  - Adequate environmental minimum flow and reservoir drawdown environmental management
  - Adaptive environmental and social management during the project expected life.

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- Good EIA-SIA and EMP&SMP/RAP

- Environmental Management system with clear environmental and social targets to be monitored and measured

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- Commitment of management to quality

- Personal Upper Management Commitment
- Key Managers selection taking in count capacity to be socially and environmentally responsive
- Managers financial incentives
- Quality control framework with external audits
- Dedicated funding for compensation and mitigation

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- Public participation from onset of project planning
  - Inclusiveness and transparency
  - Negotiated outcomes far better that imposed ones with time limits and costs constrains clear stated from the start.
  - Assistance to local impacted communities
  - Follow up and complaints credible committees

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- Flexible, proactive and adaptive approach
  - despite best planning and studies unexpected problems will arise
  - Who can predict what modifications to the operational and environmental parameters will be needed during 50 years of operation?

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- Monitoring of environmental and social management plans
  - implement an EMS at company or hydro plant level
  - Set environmental and social performance targets and monitor them.

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Conclusion

the way forward

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- The world need to develop clean and renewable energy sources.
- Hydro potential is to important in many countries to be set aside
- However we have to continue to improve the way we develop hydro projects

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- Many good examples of good practices exist around the world
- Hydro-Québec,Coppel,Hydro-Tasmania,Columbia Power,Eskom,Ceylon Electricity Board and others have demonstrated that, with commitment to quality,successful project can be build and operate

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- The IHA sustainability guidelines ,the WB safeguards and part of the WCD guidelines
  provide guidance to countries which want to develop their hydro potential in a sustainable way.
- China success with dealing with the sedimentation challenge on the loess plateau
  is a good example of what can be improved
  through science, will and wisdom
- Countries should develop their own set of guidelines and criteria using all the knowledge available on the international scene,

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Thank you

Jean-Étienne klimpt