Water identity, intercultural dialogue, and the implications of financing: different aspects of assessing large water infrastructure projects

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While large water infrastructure can provide for growing energy demands, raise living standards and boost economic growth, there is increased public concern with environmental and social impacts and the exclusion of marginalised groups. Case-studies in Asia and Northern Australia show the contemporary interface between local communities and industrial development often lack transparent and participatory assessment of options. The three papers presented in this special session show that that the results include distrust between actors and rejection of projects by affected communities. Strong statutory decision-making frameworks are key to fair and sustainable outcomes while the effectiveness of mitigation measures and resettlement plans determine whether such projects aid or destroy identity and livelihoods.

Blockading the Baram: will establishing a "water identity" for Indigenous people assist the equitable assessment of large infrastructure projects?

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Sarawak on the island of Borneo has a romantic albeit brutal history. It is also part of a biodiversity hot spot that is on the verge of tipping over from logging and large water infrastructure projects. One of these is a controversial 2400 MW hydrodam, which has operated at a fraction of its capacity since it was recently commissioned. Another 12 hydro-dams are proposed, with the next in line on the Baram River, the second longest in Sarawak, Malaysia. These dams are part of the Sarawak Corridor of Renewable Energy (SCORE) held up as a template for the South East Asian Region.

About 90% of the 388 square kilometre area potentially flooded by the Baram dam belongs to Indigenous Peoples or *Orang Asal*. If the dam is built, about 20,000 *Orang Asal* in more than 26 villages would be displaced. Although the project has neither been formally

approved nor a Social and Environmental Impact Assessment carried out, access roads are being built, land cleared and title extinguished. In protest, communities have maintained two blockades since October 2013 and mounted a court challenge to the government's extinguishment of the land rights near site.

This paper analyses legal cases determining native land rights, environmental and water legislation, citizenship and representation rights, resettlement practices and free prior and informed consent. Results show that native land rights are being systematically undermined by government actions, livelihoods are not adequately considered, resettlement is highly problematic while the *Orang Asal's* very identity is threatened. These findings are in line with many international examples where large infrastructure projects have been built on Indigenous land, thereby raising the question whether a concept of "water identity" in such circumstances will support a more equitable consideration of competing interests.

Intercultural dialogue needed in assessments of large infrastructure developments, a case-study from Fitzroy, Western Australia

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Nyikina Indigenous Australians are the Traditional custodians of the Fitzroy River. Our identity and wellbeing is constructed through our deep and enduring relationship with this river catchment. The presentation showcases a proposal for an 8000 sqkm coal mining province on the Fitzroy River in the Kimberley region of Western Australia. This mine has the potential to destroy connected living water systems, environmental and cultural heritage as well as impact on broader social and human health and wellbeing of neighboring communities. The Case Study recognised the political and economic conflicts of development and champions a process for building collective wisdom, water governance and management. The approach requires investment to be permanent, accessible, and regular such as the process advocated by the United Nations Educational Scientific and Cultural Organization (UNESCO) in support of sharing the cultural diversity, science and education of all peoples of the world. This requires consideration of scientific and philosophical bases of intercultural dialogue and action.

The Case Study method is participatory and action oriented. The study is reliant on an extensive scientific, community and legal network to build a body of evidence which combines Indigenous traditional knowledge and western science to promote and communicate science to policy and evidence based practice. Film is used as a tool to communicate grounding the case study in the lived experience of the people most impacted by this industrial development.

The contemporary interface between Indigenous peoples of the world and industrial development is a murky environment that is shaped by biased laws, manipulative politics and marginalisation of honesty, dialogue and science. This case study advocates for strong statutory water governance and management frameworks as the key to fair and sustainable outcomes to promote identity, diverse culture and conservation economies and livelihoods.

Measurements, meanings and modernity: Understanding impacts of hydropower development

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The purpose of this paper is to exemplify how conceptions of modernity and management influence the way in which knowledge concerning river basin planning is produced and negotiated and by whom. The paper asks: what kinds of meanings do the processes of impact assessment hold for governance of river basins?

Using case studies from Southeast Asia, the paper argues that modernity through control of the river flow has shaped the ways in measurements of impacts have been established, whereby scientific and traditional knowledge of the basin are often pitted against each other. Identifying, measuring and addressing expected and actual impacts from river basin development, in particular hydropower projects, pose significant challenges in anticipating uncertainties as well as establishing causal links between a variety of impacts across spatial scales. The uses of environmental impact assessment, strategic environmental assessment and cumulative impact assessment methodologies are discussed.

However, the key tenant of the paper is that these methodologies and processes of engaging them are bound in a socio-political context, making it vital to understand local people's lifestyles, cultures and livelihoods to comprehensively evaluating the environmental and social impacts of a project. It is pointed out that indigenous communities often possess significant knowledge of their local environment, potentially more so than can be acquired from short-term scientific studies, which may be based on inadequate baselines with limited longitudinal data, or inappropriate application of ecological theories to local settings. The paper discusses the ways in which problem framing through plurality of (Western) scientific and traditional knowledge-bases could address unforeseen impacts and contingencies to accommodate them.