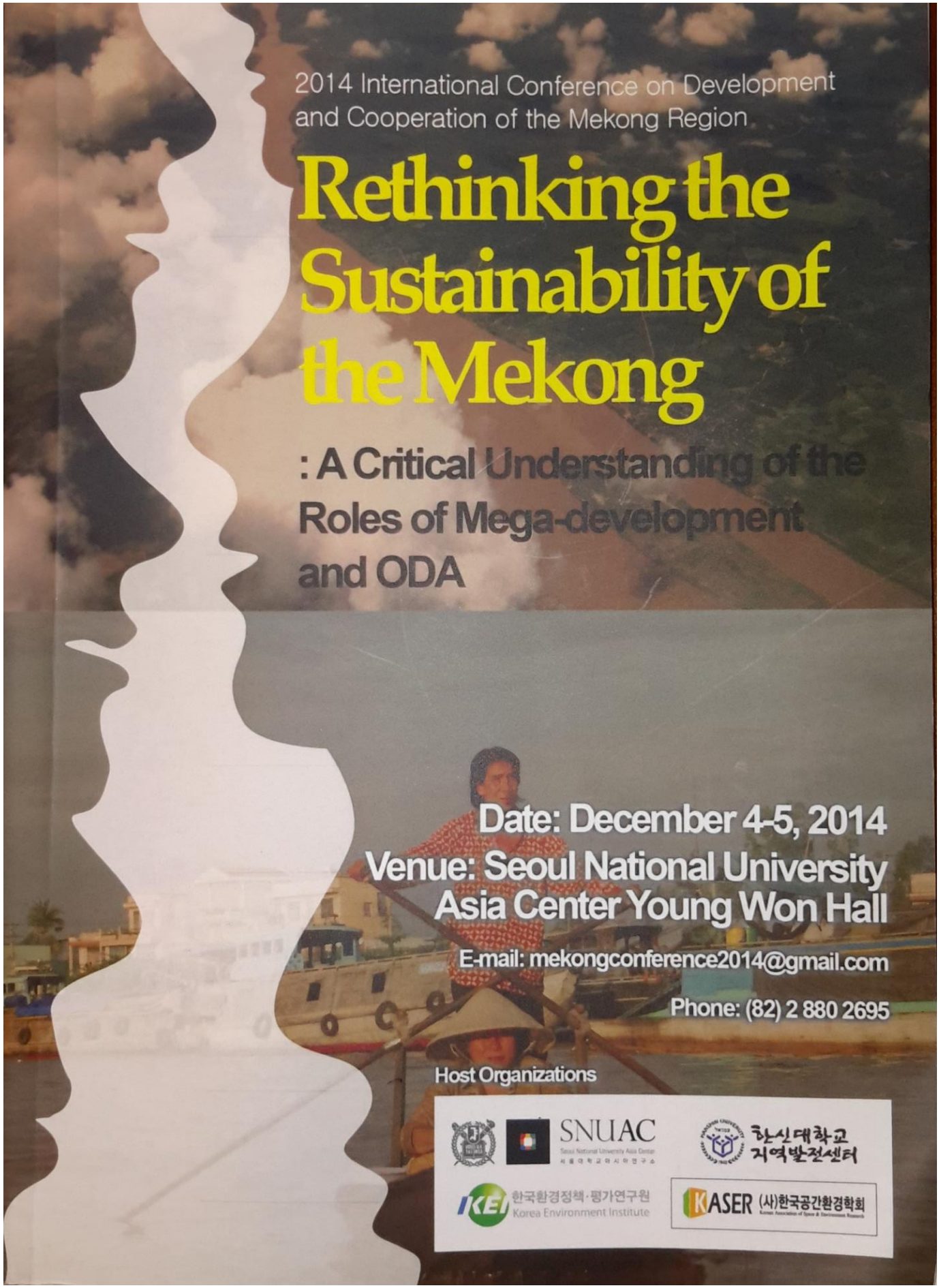
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THE POLITICS OF UNCERTAINTY:
Knowledge Production, Power and Politics on the Mekong River

Carl Middleton[1, 2]

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The Mekong is a major transboundary river central to the lives of millions of people in Southeast Asia. Since 2006, contested plans have emerged for up to eleven dams on the lower mainstream, with the first project – the Xayaburi Dam - under construction in Northern Laos since 2010. This paper explores how uncertainty shapes transboundary water governance. It considers how a politics of uncertainty emerges alongside other political strategies, such as the politics of scale and knowledge, where uncertainty is not only the result of incomplete data and its analysis, but can also reflect diverse normative stances, as a part of transboundary hydropolitics. The paper takes as a case study the Xayaburi Dam, as it moved from planning through to construction between 2008 and 2012. The Xayaburi Dam is a case where there: is a high degree of uncertainty; outcomes are contested; stakes are high; and values between actors are not shared. The paper concludes that the politics of uncertainty holds implications for trans-border environmental justice - i.e. the allocation of exposure to impacts and risk of impact based on unequal power relations and political representation. It argues that there is a need to deepen the array of deliberative and legal-based processes to hear and respond to all voices, especially those most marginalized who are also those most vulnerable to the risk of hydropower dam impacts.

Key words: Mekong, Hydropower, Politics of Uncertainty, Arenas of Justice

1 Lecturer, MA in International Development Studies Program, Faculty of Political Science, Chulalongkorn University (Carl.Chulalongkorn@gmail.com)

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1. Introduction

The Mekong River is a transboundary resource shared between the six countries of mainland Southeast Asia that is central to the livelihoods, local economies and culture of millions of people (MRC 2010; Santasombat, 2011). Whilst large areas maintain a rural character, the region is rapidly industrializing, urbanizing, and economically integrating. The Mekong River holds significant potential for hydro-electricity and irrigated agriculture, although such development would entail consequences for the river's ecology and natural resources and trade-offs with the riparian communities dependent upon them (MRC 2011; Kuenzer, Campbell et al. 2013). Hydropower development is taking place in a context of shifts in the region's electricity sector from state monopoly towards partially-liberalized models with a growing role for the private sector (Middleton et al, 2013), which is creating new rationales of hydropower development and distributions of risks and benefits (Middleton et al, 2014).

Since 1995, the governments of the four lower countries of the Mekong River – Cambodia, Laos, Thailand and Vietnam - have committed *"[t]o cooperate in all fields of sustainable development, utilization, management and conservation of the water and related resources of the Mekong River Basin"* through the formation of the inter-governmental Mekong River Commission (MRC) (MRC 1995). The commitment to regional cooperation on sharing the river, however, has been tested since 2006 by plans for a cascade of up to eleven dams on the lower Mekong River's mainstream. Whilst the full proposed Mekong mainstream dam cascade holds the potential to generate up to 14,100 MW of electricity and thus to contribute significantly to the region's economic growth and energy security, by changing the river's hydrology and ecology and blocking major fish migrations and the movement of sediment, the mainstream dams could also put at risk the livelihoods, local economies and food security of millions of people (Grumbine, Dore et al. 2012).

This paper explores how uncertainty shapes transboundary water governance of the Mekong River. Through a case study of the Xayaburi Dam now under construction on the river's mainstream, the paper shows how the representation of uncertainty is an important dimension of the politics around water infrastructure and management decisions. Within arenas of transboundary water governance (Dore et al, 2012), politics of scale and knowledge intersect with "the politics of uncertainty" shaping decisions - with implications for social and environmental justice (Walker, 2012). To reduce the severity of conflicts emerging from contested hydropolitics on the Mekong River, it is argued that diversified participatory and deliberative processes – whilst not without shortcomings, including significant power asymmetries that reflect the existing political economy of regional hydropower development (Middleton and Dore, 2015) – can create new knowledge and offer potential mechanisms through which fair(er) outcomes can be sought.

The next section of the paper conceptualizes the politics of hazard, risk and uncertainty, focusing in particular on: analytical uncertainty; regulatory (or normative) uncertainty; and political uncertainty. The following section then explores the decision-making process for the Xayaburi Dam according to this typology of uncertainties. The subsequent section

explores the emergent "politics of uncertainty", identifies arenas of justice, and discusses the potential for deliberative processes. This is followed by a brief conclusion.

2. Conceptualizing the Politics of Hazard, Risk and Uncertainty

The concepts of hazard, risk and uncertainty have been extensively discussed, are inter-related, and are bound together by politics. Briefly, a *hazard* can be defined as "an object, condition, or process that threatens individuals or society in terms of production or reproduction" (Robbins, Hintz et al. 2010: 81). A *risk* is the known (or estimated) probability that a hazard-related decision will have a negative consequence (Robbins, Hintz et al. 2010: 81). Finally, *uncertainty* refers to the degree to which the outcome of a decision or situation are unknown (Robbins, Hintz et al. 2010: 83).

The politics of hazard refers to how an individual or social group's exposure to risk often reflects their societal status and political voice (Wisner et al, 2004). For example, in the case large infrastructure projects such as hydropower dams, people's vulnerability to forced resettlement without fair compensation and livelihood recovery also reflects a larger story of socio-economic and political inequality. Within arenas of transboundary water governance, various other politics such as the politics of scale, position, place and knowledge also shape decision making outcomes (Lebel, Garden et al. 2005; Contreras 2007; Dore, Lebel et al. 2012). These politics are also shaped by uncertainty.

Uncertainty has been classified in many ways, for example: as a typology of risk, ambiguity, uncertainty and ignorance (Leach, Scoones et al, 2010: 53); with respect to magnitude, source and system (Berkes 2007); and as a subjective phenomenon related to a person's perspective on their knowledge of a situation and the degree of confidence about this knowledge (Sigel, Klauer et al. 2010).

Sigel et al (2010) consider uncertainty from the perspective of an individual actor within a policy system; they define uncertainty as "if he/she lacks confidence about his/her knowledge relating to a specific question." Considered from the perspective of an actor within the system, the sense of uncertainty is *subjective* and relates to *knowledge* and the degree of *confidence*[3] about this knowledge. How actors understand and perceive risk and uncertainties depends on individual characteristics, including interests or stakes, but also socio-political and cultural settings (Kasperson et al 1988). Cultural Theory, for example, has proposed that different cultures each have a "risk outlook" (See, Douglas and Wildavsky, 1983; Thomson et al 1999).

Sigel et al (2010) define a spectrum of certainty to lack of knowledge as follows.

- *Certainty:* A person is certain if he is confident about his knowledge relating to a specific question

[3]"Confidence about knowledge may range from 'being certain' to 'admitting to know nothing (of use)'" (Sigel et al 2010)

- *Lack of knowledge:* Lack of knowledge is a state in which a person has no knowledge relating to a specific question but is none the less able to specify what knowledge he lacks

In addition, a state of ignorance is where a person has "A lack of knowledge to 'answer a question', and lack of awareness of the lack of knowledge." (Sigel, Klauer et al. 2007). Sigel et al (2010) discuss five 'complimentary perspectives' on uncertainty, of which this paper draws in particular upon insights into fact-related and norm-related uncertainty.[4]

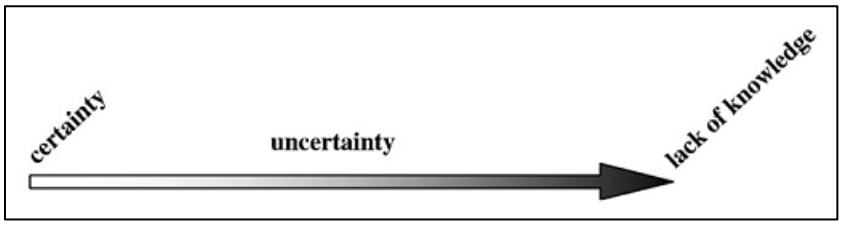

Figure 1: Spectrum of Uncertainty (Sigel et al, 2010)

2.1 Analytical Uncertainty

Fact or analytical related uncertainty exists when a person lacks confidence about his/her knowledge regarding facts. Factual knowledge claims to describe reality, and therefore must be considered as 'objective' and 'legitimate,' and thereby both verifiable and (seen to be) impartial or trusted.

It is well-researched, however, that the legitimacy of factual knowledge is subject to a 'politics of knowledge' (Lebel, Garden et al. 2005; Contreras 2007; Käkönen and Hirsch 2009; Daniel, Lebel et al. 2013). There are many forms of knowledge, often with contested claims to legitimacy in the eyes of different actors, ranging from expert (or scientific) knowledge to practical, situational, or sacred forms of knowledge. In other words, how knowledge is framed and represented – and by whom – can reflect its claim to legitimacy.

2.2 Regulatory uncertainty

Regulatory uncertainty – also known as normative uncertainty - exists "when a person lacks confidence about his/her knowledge regarding norms and values." Regulatory uncertainty may exist with regard to national and international law or regimes, where the rules are open to interpretation by individual actors. It may also exist where the values of actors are unclear. Regulatory uncertainties in terms of gaps or ambiguities in rules, laws and norms may exist due to the impossibility of legislating for every possibility, for political reasons (for example a lack of complete agreement at the time of legislating the rules), or due to the uncertainty of the commitment of actors to *follow* the rules. There are benefits in regulatory uncertainty, namely that it allows for a relatively flexibility in decision making according to

[4] Sigel et al's (2010) five complimentary perspectives on uncertainty are: 1) Description of uncertainty on the basis of the theory of probabilities; 2) Sources of uncertainty; 3) Fact-related and norm-related uncertainty; 4) Causes of uncertainty; and 5) Reducibility of uncertainty

specific circumstances, whilst inversely the costs include that potential loopholes may be exploited (Sigel et al, 2007).

2.3 Political uncertainty

This paper also consider how *political uncertainty* is created due the interaction of actors within a political process. Political uncertainty exists due to the uncertainty in how actors will behave towards particular decisions. In other words, actor A cannot be fully certain how actors B and C will behave under a particular circumstance towards a particular decision. In other words, the social interaction and negotiations of these 'uncertain' actors also contributes towards further uncertainty in final outcomes (Sigel, Klauer et al. 2007).

2.4 Politics of Uncertainty

Finally, related to political uncertainty, this paper proposes the concept of the "*politics of uncertainty.*" Within political decision-making processes, actors will adopt their strategies – for example coalition building, framing and claim making – in pursuit of their interests. In terms of the framing and claim-making towards "uncertainty" by each actor, this too may be understood in terms of pursuit of interests. Therefore, the degree of acceptable uncertainty to one actor, may be unacceptable to another if it is not aligned with that actors interest; indeed, some actors may even deny widely agreed 'facts' if not in their interest. This framing and claiming-making of uncertainty we call the "*politics of uncertainty.*"

3. Case Studies: The Xayaburi Dam

3.1 Background

The 1,285 megawatt Xayaburi Dam in Northern Laos is the mainstream dam project at the most advanced stage of development. It will export 95% of its electricity to Thailand, and is proposed by a predominantly Thai private-sector consortium (Matthews 2012; Thabchumpon and Middleton 2012). Project proponents, including the Government of Laos (GoL), the project developer[5], and Thailand's Ministry of Energy and the utility EGAT (Electricity Generating Authority of Thailand), argue that the Xayaburi Dam would contribute towards Thailand's energy security and generate cheap electricity, and that the cross-border foreign direct investment and project revenues would bring development to Laos. Those opposing the project, including a number of local NGOs throughout the region and international NGOs, and some riverside communities emphasize that the Xayaburi Dam would require the resettlement of approximately 2,100 people from ten villages in Laos and that more than 200,000 people located near the dam would experience impacts to their livelihoods and food security, both within Laos and in neighboring countries due to impacts on capture fisheries, loss of sediment flows and other ecological changes. They also highlight how the project's Environmental Impact Assessment report, published in August 2010, is of poor quality and does not consider transborder impacts; the original EIA report only considers impacts for 10 km downstream of the project (International Rivers 2011b).

[5] The project developer is a consortium formed of: Ch.Karnchang (50%); PTT plc (25%); EGCO 12.5%; Bangkok Expressway (7.5%); and PT (5%). (GoL, 2013)

The Xayaburi Dam has been surrounded by intense local, national, regional and global politics, and undertaken in the context of contested uncertainty over the project's impacts (Grumbine, Dore et al. 2012). The inter-governmental MRC has struggled to consensually negotiate the project's approval, despite that most key project agreements have been signed and construction has now started (Stone 2011). Milestones in the project's development, discussed further below in the context of analytical, regulatory and political uncertainty, include: (see also, International Rivers 2014)

- The GoL and the project developer signed a Memorandum of Understanding (MoU) for the Xayaburi Dam in May 2007, a Project Development Agreement (PDA) in November 2008, and the concession agreement (CA) in November 2010.
- An MoU for a Power Purchase Agreement (PPA) was signed between EGAT and the GoL in July 2010, and the PPA between EGAT and the project developer was signed in October 2011
- In May 2009, the MRC commissioned a Strategic Environmental Assessment report for the Mekong mainstream dam cascade, which was launched in October 2010 (ICEM 2010)
- On 22 September 2010, the GoL initiate a regional decision-making process through the MRC called the Procedures for Notification and Prior Consultation and Agreement (PNPCA). Following a special session of the MRC Joint Committee[6] in April 2011, at which consensus between the four governments on the Xayaburi Dam was not attained, the issue was delegated to the next ministerial-level MRC Council Meeting. However, the GoL subsequently claim that the PNPCA was concluded on 22 April, 6 months after its initiation as according to the PNPCA guidelines, and was re-asserted in a letter summarizing a GoL commissioned report by the consultancy group Pöyry assessing the compliance of the Xayaburi Dam with the MRC requirements (published in August 2011)[7], which was sent to the project developer in June 2011 (Pöyry Energy AG 2011). Meanwhile, civil society and the Cambodian Government disagreed with the Pöyry assessment (International Rivers 2011a), and an MRC Secretariat assessment of the Pöyry report also concluded that the measures proposed would not result in the Xayaburi Dam's compliance with the MRC standards (MRC Secretariat 2011a).
- Subsequently, in December 2011, the MRC Council agreed to conduct a further study which to date has not been completed. Meanwhile, the GoL commissioned a second consultancy firm, Compagnie Nationale du Rhône (CNR), to review the Pöyry assessment which was published in March 2012 (CNR 2012), which supported the Pöyry assessment, and was subsequently challenged by civil society groups (International Rivers 2012).

[6] The MRC Council is formed of environment and water ministers from the four MRC member countries, and meets annually. The MRC Joint Committee is formed of senior officials at no less than Head of Department level of the four MRC member countries and meets approximately quarterly.

[7] The report concludes that the project was "principally in compliance" with MRC standards whilst identifying 40 additional studies needed

- A court case was submitted in August 2012 by Thai villagers to Thailand's Administrative Court challenging the role of the Thai government in the project. Although in February 2013, the court announced that it did not accept jurisdiction on the case, the Supreme Administrative Court accepted the case in April 2014.
- After the GoL announced in July 2012 that the project had been redesigned to address neighboring countries concerns, the projects "ground breaking" ceremony was held in November 2012 attended by the Cambodian and Vietnamese governments, although construction on the riverbanks had proceeded since late 2010 and in the river since at least mid-2012.
- As of September 2014, the project's construction was 35% complete.

3.2 **Analytical Uncertainty**

The predicted impacts of the Xayaburi dam are heavily contested between those that support and oppose the project. A wide range of actors have generated primary research and analysis of the Xayaburi Dam, reaching divergent conclusions on whether the project should proceed or not, including: the project developers (e.g. TEAM Consulting, 2010a, 2010b) and government-commissioned consultants (e.g. Pöyry Energy AG, 2011); the inter-governmental MRC (MRC Secretariat, 2011a, 2011b); academics (e.g. Matthews, 2011; Grumbine et al 2012); think tanks (e.g. Cronin and Hamlin, 2012); and non-government organizations (e.g. Save the Mekong Coalition, 2010; International Rivers 2011, 2012).

For example, with regard to the impacts on fisheries, civil society groups, citing the Strategic Environmental Assessment report (ICEM 2010)[8], have argued that the project will irreversibly change the aquatic habitat and ecosystem of the Mekong River by blocking fish migration between Luang Prabang in Laos and Chiang Saen in Thailand, with potential wider impacts throughout the river basin, placing up to 41 fish species at risk of extinction including the critically endangered Giant Mekong Catfish (International Rivers 2011a, 2011b). Academic studies have highlighted how existing technologies to mitigate the impacts to fisheries "cannot cope with the scale of fish migration on the Mekong mainstream" (Dugan, Barlow et al. 2010). Academics have also pointed out the potential challenges to food security due to fisheries loss (Orr, Pittock et al. 2012). The MRC Secretariat, in its review of the Xayaburi Dam and proposed mitigation technologies for the PNPCA process, also concluded that there is insufficient knowledge that needs to be addressed regarding "ecology of the fish, status of the fisheries, [and] livelihoods analyses in relation to operational design of the dam and upstream and downstream fishways" (MRC Secretariat, 2011: 39).

The Pöyry Energy AG report (2011), commissioned by the GoL and that supports the project's construction, also acknowledges knowledge gaps on the issue of fisheries, but concludes that knowledge gaps can be filled as construction proceeded. The GoL, meanwhile, has

[8] Preparation of the SEA by the consultancy ICEM involved extensive desk-based literature review and three rounds of regional expert consultations. The final state-of-knowledge report was launched in October 2010 and identifies significant knowledge gaps and scientific uncertainty, alongside and institutional gaps and weaknesses. (ICEM, 2010) Whilst those opposing the Xayaburi Dam widely endorsed the SEA report, the GoL was unwilling to endorse the report and therefore the SEA remained an MRC-commissioned report rather than an official report of the MRC.

claimed in the media that sufficient knowledge exists to manage fisheries impacts and proposes an adaptive management approach. For example, shortly before the projects ground breaking ceremony in November 2012, deputy energy minister Viraphonh Viravong said "I am very confident that we will not have any adverse impacts on the Mekong river. But any development will have changes. We have to balance between the benefits and the costs" (RFA 2012). Deputy minister Viraphonh also noted that some aspects of the dam's design had been changed to "reassure neighboring countries" (RFA 2012). Likewise, the project developer has also claimed that no transboundary impacts would result; a representative of Xayabouri Power Company stated in October 2012 that "We are redesigning the power plant and its hydraulic model is now being tested at the Asian Institute of Technology in Bangkok" (VT 2012).

Similar debates over magnitude of impact and proposed mitigation measures also exist with regard to other issues, including on river hydrology, sediment transport, and impacts to livelihoods locally and basin-wide. For example, on the area's seismology, International Rivers (2011) report that between 2006 and 2011, three major earthquakes of 5.4, 6.4 and 7.1 magnitudes have occurred within 300 km of the project site. Whilst acknowledging this risk and the need for further field investigation, the Pöyry Energy AG report (2011: 50) concludes "it is very unlikely that the dam will fail during strong earthquakes." A recent newspaper article, the debate was renewed following concerns raised by Dr Punya Charusiri of Chulalongkorn University (Fawthrop, 2014).

Addressing knowledge gaps is a common theme; for example, the SEA report recommends approximately 50 additional studies to fill knowledge gaps, and in this context proposes that any decision to proceed with the mainstream dams should be deferred (a precautionary moratorium) by at least 10 years (ICEM, 2010). Civil society groups have also argued that knowledge remains uncertain; for example, in November 2012, the World Wildlife Fund (WWF) issued a press release titled *In the Mekong, science – not guesswork – must prevail* and called for sustainable development stating:

> "In December 2011, the Mekong River Commission agreed to conduct further studies on the effects of the Xayaburi dam and 10 other proposed mainstream dams. To date, no studies have been conducted, leaving significant questions unanswered about how mainstream dams will affect migratory fish populations and the flow of sediment that nourishes farmland downstream" (WWF 2012).

Following a meeting of the MRC Joint Committee in January 2013, it was reported that the Government of Vietnam had also requested the GoL to suspended construction until the study by the MRC Council was complete (Reuters 2013).

Thus, regarding analytical uncertainty, a range of actors are involved in producing and/ or analyzing data, including various state agencies, project developers, academics, civil society groups, and the MRC Secretariat. Despite this, there remain significant analytical uncertainties with regard both to the current understanding of the river basin, and the

potential impacts from extensive dam development. These include bio-physical parameters such as hydrology, fisheries, sediment movements and seismology, and socio-economic considerations such as impacts on riparian community livelihoods, food security and local economies.

Factual data has been heavily contested between proponents and opponents of the project. These contested facts are then used in various reports, including EIA reports and reports critical of the project, that as documents also become contested, resulting in the emergence of a politics of uncertainty (see below). Thus there are calls to address knowledge gaps by actors who challenge the project, whilst these calls are often downplayed or ignored by project proponents, reflecting their privileged position in decision-making processes.

3.3 Regulatory (normative) uncertainty

Amongst the government co-signatories, and civil society groups and others, the interpretation of the 1995 Mekong Agreement, and in particular the Procedures for Notification, Prior Consultation and Agreement (PNPCA) and its conclusion, has been subject to significant contestation and large regulatory (normative) uncertainties. The PNPCA process is referred to in Article 5 of the 1995 Mekong Agreement and further details provided in the "PNPCA Procedures", "Guidelines on the implementation of the PNPCA", and the "Preliminary Design Guidance for Proposed Mainstream Dams in the Lower Mekong Basin" report. These documents detail the process for inter-governmental consultation and agreement for projects built on the Mekong River's mainstream.

In the case of the Xayaburi Dam, the GoL initiated the PNPCA process on 22nd September 2010, pre-empting the final publication of the SEA report on 15th October 2010, and the process officially started on 22nd October 2010. Overall, the PNPCA process held eight "information sharing" meetings in Cambodia, Vietnam and Thailand and received online submissions.[9] The Xayaburi Dam's environmental impact assessment (EIA), however, was only released after the information meetings were held. The inadequate public participation and the EIA report itself was widely criticized by academics and NGOs, including because they stated there was: inadequate and incomplete evaluation of fishery and sediment impacts; no Cumulative Impact Assessment with the other mainstream dams; and the EIA did not assess the trans-boundary impacts of the dam (International Rivers 2011).[10]

An inter-governmental MRC Joint Committee meeting was scheduled to discuss the PNPCA outcome on 19th April 2011. Yet, days before the meeting, an article in the Bangkok Post revealed that project construction and resettlement activities was already underway, with the GoL and the project developers drawing extensive criticism (Bangkok Post 2011; Stone 2011). Subsequently, the GoL referred to this activity as pre-construction because construction had yet to affect the Mekong River channel itself, whilst Ch. Karnchang

[9] See http://www.mrcmekong.org/news-and-events/consultations/xayaburi-hydropower-project-prior-consultation-process/ [Last accessed 6.10.13]

[10] The scope of the EIA only covered 10 kilometers downstream of the project, impoundment area and its watershed

revealed in its annual report that this construction activity had been underway since late 2010.

The official press release of the MRC PNPCA meeting on 19 April 2011 stated:

> "Lao PDR insisted there was no need to extend the process since this option would not be practical, while trans-boundary environmental impacts on other riparian countries are unlikely… Cambodia, Thailand and Viet Nam, however raised their concerns on gaps in technical knowledge and studies about the project, predicted impact on the environment and livelihoods of people in the Mekong Basin and the need for more public consultation…Vietnam indicates it would like to see a 10 year moratorium"

Subsequent diverse interpretation of the PNPCA procedures and guidelines led to divergent conclusions on whether this regional consultation process was concluded or not.

The GoL claimed that according to the PNPCA guidelines, the PNPCA process ended on 22 April 2011 six months after it officially started because no government had officially objected to the project. As noted above, the GoL commissioned a report by Pöyry Energy AG report (2011) that backed the assessment of the GoL stating that the project was "principally in compliance", and subsequently when this report was challenged the GoL commissioned a second report by CNR (2012). The GoL sent a letter to Thailand's Ministry of Energy on 5 October 2011, which paved the way for the project developer to proceeded to sign a Power Purchase Agreement (PPA) with Thailand's electricity utility, EGAT, on 29 October 2011 (Thabchumpon and Middleton 2012).

Yet, the claim of the GoL that the PNPCA was concluded was contested, and typifies issues that arise from regulatory uncertainty and the politics that encompass it. Civil society groups challenged the GoLs interpretation of the 1995 Mekong Agreement, and the closure of the PNPCA process. A commissioned legal opinion by the firm Perkins Coie concluded that

> "Lao PDR's unilateral action to prematurely terminate the PNPCA process, without allowing its neighbor countries to properly conclude that process, violates the Mekong Agreement, and therefore international law" (Perkins Coei 2011)

The NGO International Rivers argued that: Laos was required to seek agreement with its neighbors before beginning the project, but had not "negotiated in good faith," including because it was implementing the project while consultations are still underway; Laos was required to study the project's transboundary impacts before the PNPCA consultations took place; and Cambodia, Vietnam, and Thailand had a right to extend the prior consultation's timeframe (Herbertson 2013a). The MRC Secretariat, which had been asked to review the Poryr report in the context of the MRC's dam design guidelines, also stated:

> "… due to the major challenges involved it is the MRC Review Team's observation that even if the recommendations in the Pöyry Report are followed, the Xayaburi Project would be considered only partly compliant in the area of fish bypass facilities and fisheries ecology as well as in terms of dam safety" (MRC Secretariat 2011).

Meanwhile, in the media, representatives of the Government of Laos asserted its claim that it had not violated the 1995 Mekong Agreement, stating:

> "It is a groundless accusation and all of the legal experts are well aware that we have not violated any international agreement… suspect that the people made this accusation because they wanted to discredit us and create dispute among the MRC member countries… Laos could have begun construction of the dam immediately after completing the consultation process. But we did not because our neighbours were still concerned about the trans-boundary impacts" (VT 2012)

Yet, following a MRC Joint Committee meeting in January 2013, it was reported that the Government of Cambodia claimed that the Government of Laos had mis-interpreted the 1995 Mekong Agreement in deciding to proceed with the project (Reuters 2013). According to Herbertson (2013b):

> "On January 17 [2013], government ministers gathered in Laos for the annual meeting of the Mekong River Commission's governing body. Although the Xayaburi Dam was not on the agenda, the governments finally spoke out. Discussions became tense. Cambodia said that Laos had misinterpreted the 1995 Mekong treaty by proceeding with the Xayaburi Dam before the "prior consultation" was finished. Vietnam said that the recent launching of the dam "is causing concerns… about its adverse impacts on downstream areas." Even Thailand acknowledged that concerns still exist.
>
> Donors to the Mekong River Commission also spoke up. In a joint statement, Australia, Japan, European countries, the United States, and others said, "It is our consensus that building dams on the mainstream of the Mekong may irrevocably change the river and hence constitute a challenge for food security, sustainable development, and biodiversity conservation." At the end of the meeting, Laos announced "with deep regrets" that it could not sign the meeting's official minutes, signaling that it did not acknowledge the criticisms."

Thus, as demonstrated above, significant regulatory uncertainty exists in interpreting and implementing the 1995 Mekong Agreement, in particular the PNPCA process, which is interpreted in divergent ways by different actors. Regulatory uncertainty is further compounded by the analytical uncertainty on data incorporated into the reports linked to the PNPCA process. Requirements on the quality of EIAs are also questioned; for example, whether it is acceptable for such a major project to assess impacts for only up to 10 kilometers downstream, and whether transboundary EIA should be undertaken.

Civil society and other social movements have challenged the Xayaburi Dam, even as it is supported by various states agencies and private sector developers. From a civil society perspective, a lack of transparency and accountability characterizes decision making, which further adds to the impression of regulative uncertainty; however, this is not just related to regulatory uncertainty, but also to deeper held values regarding the vision for the role of the river in national and regional development.

3.4 Political uncertainty

In the case of the Xayaburi Dam, actors have polemically engaged in supporting or opposing the project. Whilst the GoL and the project developer have claimed that they have adapted the project design to accommodate neighboring countries concerns, there is little evidence of direct negotiation on these compromises. For example, at the time of the ground breaking ceremony, in November 2012, neither the MRC Secretariat nor the Cambodian and Vietnamese governments had seen plans for the redesigned project (International Rivers 2013).

Coalitions have formed both in support of and opposed to the project amongst governments, the private sector, civil society and potentially affected communities. These coalitions have affected their political strategies that represent and frame – or even obfuscate - uncertainty to support their own claims and interests in the decision-making process. The complexity of the Xayaburi project itself and the Mekong River ecosystem more broadly, together with the ambiguity in the 1995 Mekong Agreement and PNPCA procedures and a lack of transparency on decision-making amongst government actors in the region, have all served to create political uncertainty. At the same time, the PNPCA process represented an unprecedentedly public – although very much imperfect – decision-making process in a region where transparent and accountable governance is often only weakly present.

This is furthermore compounded by more complex regional politics in Southeast Asia beyond cooperation on the Mekong River alone – for example, Vietnam's close political ties to Laos since the Second Indochina War – that serves to complicate the national interest, or that can shift the national interest over time in unpredictable ways. In addition, the "ASEAN Way" of non-interference also serves as a smokescreen over the behind-the-scenes diplomacy of the region's governments.

As an outcome, uncertain actors behave in part in uncertain ways; in other words, the interests and anticipated behavior of actors cannot be stated with certainty.

4. The Politics of Uncertainty, Arenas of Justice, and Potential for Deliberative Processes

The Xayaburi case study highlights how different actors' representation of uncertainties is an important dimension of the politics around water infrastructure and management

decisions. This includes divergent interpretations of both the amount of uncertainty and the acceptable measure of uncertainty, resulting in a "politics of uncertainty" that accompanies various other politics such as of knowledge and scale. These become apparent, for example, in different positions taken towards the production and acceptance of EIA reports, and the rules of the PNPCA process.

The Laos government, in the context of regional economic growth and demand for electricity, has labelled itself as the "battery of Southeast Asia" for this growth, opening a discourse on the legitimacy of hydropower development. They often downplay the analytical uncertainty and claim authority in interpreting regulations thus downplaying regulatory uncertainty in the pursuit of project development. Meanwhile, those challenging particular projects highlight the unacceptably high analytical and regulatory uncertainties associated with the projects they challenge; often they point out the need for further study and that there is an inequitable allocation of exposure to risk between risk bearers. The "politics of uncertainty" is related to a regional political economy of power trade that reproduces transboundary environmental (in)justices (Middleton, 2012; Middleton et al., 2014).

Broadening our understanding of water governance, there are multiple arenas where transboundary water governance can or may occur. Such arenas are highly politicized spaces of governance that facilitate a process for claiming/ defending rights or seeking redress for rights violations that have or could take place (Middleton and Pritchard, 2014). In the case of the Xayaburi Dam, those concerned about the project's impacts have sought to seek participation, transparency and accountability through a critical momentum gained in multiple arenas of justice (Figure 2).

Figure 2: Arenas of Justice for the Xayaburi Dam

Arena	Process
National	• Thailand's Power Development Plan (since 2010) • Laos Environmental Impact Assessment (February 2010) • Thailand National Human Rights Commission (February 2012) • Thailand Administrative Court (August 2012) • Thai Senate Committee on Good Governance Promotion and Corruption Investigation (November 2012) • Thailand Supreme Administrative Court (June 2014)

Regional inter-governmental	• Mekong River Commission
	  ○ Strategic Environmental Assessment (May 2009 – Oct 2010)
	  ○ Procedures for Prior Notification and Agreement (PNPCA) (Sept 2010 – April 2011)
	  ○ Basin Development Plan 2 (2011)
	  ○ MRC Council Study (Dec 2011 - ?)
	• ASEAN Intergovernmental Commission on Human Rights (April 2011)

International inter-	• *N.A.* (Potentially UN Special Rapporteur on Right to Food)

governmental	
Extra Territorial Obligations	• Thailand National Human Rights Commission (July 2012) • Austria and Finland (re: Pöyry and Andritz AG)

Voluntary/ non-binding mechanisms	• OECD Guidelines for Multinational Enterprises
	  ○ Pöyry (August, 2012 – June 2013)
	  ○ Andritz AG (April 2014)
	• Thai banks CSR policy (informal arena only)
	• Thai Ministry of Energy planning (informal arena only) (April 2012)

Reproduced from Middleton and Pritchard, 2014.

On the one hand, these arenas facilitate "contestation" over key issues – could be understood as a deliberative process. Yet, wide power inequalities mean that the project has been pushed through without having to seriously and transparently engage its criticisms

For example, a court case was submitted in August 2012 by Thai villagers to Thailand's Administrative Court challenging the role of the Thai government in the project, on the basis of the 2007 Constitution. In February 2013, the court announced that it did not accept jurisdiction on the case. However, in April 2014, the Supreme Administrative Court of Thailand reversed the lower court decision and accepted the case against five Thai government agencies, including Thailand's electricity utility EGAT, that the Mekong River Commission's regional decision-making process on the project (the 'PNPCA process') had not complied with Thailand's Constitution, in particular regarding information disclosure and public participation (LeFevre, 2014). The court's verdict is yet to be announced. Whilst beyond the typical mechanisms considered to be "water governance", this new arena of justice may prove an important game-changer in ensuring transboundary environmental justice in the Mekong Region.

It is widely recognized that deliberative processes have the potential to reduce uncertainty to a manageable level when addressing hazards (Klinke and Renn, 2002; Renn et al 2011; Measham and Preston, 2012). Moreover, the absence of deliberative processes incorporating the perspectives of diverse stakeholders has been identified as a key failure of transboundary river management leading to decision gridlocks or conflict (Vari and Linnerooth-Bayer 2001.) At their best, these participatory and deliberative processes and tools can reduce regulatory uncertainties, and perhaps in the long term also lead to closer cooperation on the sharing of data that can also reduce transboundary knowledge-related uncertainties. Yet, the case of the Xayaburi Dam is also a reminder that deliberative process do not always decrease uncertainties, when stakes are high and interests are divergent.

5. Conclusion

The Mekong river basin is experiencing increasingly intensifying demands of its resources, including extensive plans for hydropower development, which would entail significant tradeoffs. The negotiation and decision-making on these trade-offs in turn entail significant water governance challenges. This paper has explored the implications of analytical,

regulatory and political uncertainty in governance of the Mekong River, in particular of the Xayaburi Dam and the contentious politics that surround it. Each form of uncertainty is found to not only be present and often significant, but also result in a politics of uncertainty whereby both the magnitude and acceptable degree of uncertainty is represented differently by various actors.

The Xayaburi Dam is a case where there: is a high degree of uncertainty; outcomes are contested; stakes are high; and values between actors are not shared. There are divergent interests, including over economic security, food security, and energy security, between: the project developer and supporting state agencies in Thailand and Laos; versus some riparian communities and supporting civil society, which have been backed at times by concerns raised by the Cambodia and Vietnam governments. There are also divergent perspectives towards degrees of "uncertainty," associated risk, and strategies to mitigate. Project proponents downplay uncertainty whilst emphasizing the benefits of projects and propose adaptive management for project development, whilst those that question projects emphasize the need to reduce uncertainty through further research and analysis before decisions are taken to proceed with projects, citing "Precautionary Principle" and "Rights-based" approaches.

The "politics of uncertainty" holds implications for the trans-border environmental justice - *i.e.* the allocation of exposure to impacts and risk of impact based on unequal power relations and political representation. The transborder dimension of both the river and the flows of investment and electricity add further complexity to water governance, in particular related to sovereignty and legal jurisdiction for cross-border risks (Middleton and Dore, 2015). Beyond the inter-governmental MRC, a wider array of "arenas of Justice" have been opened up, although power inequalities still limit accountability. There thus remains a need to deepen the array of deliberative and legal-based processes to hear and respond to all voices, especially those most marginalized who are typically those most vulnerable to the risk of hydropower dam impacts.

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