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Title: Beyond Cooperation: Environmental Justice in Transboundary Water Management

Abstract approved:

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Aaron T. Wolf

Since the Wolf, Yoffe, and Giordano 2003 Basins at Risk study, examining human
interactions with transboundary water resources through a lens of conflict and
cooperation has been a dominant paradigm. The Basins at Risk (BAR) method involves
categorizing events on a scale from most conflictive (e.g. war or extensive casualties) to
most cooperative (voluntary unification into one political unit). While this research
provides significant insight into the nature of cooperation and conflict over water, it
frames the discussion about water politics in terms of diplomatic, economic, and
military hostility. However, a basin can exhibit an impressive level of cooperation, yet
beneath the surface display tremendous environmental injustice to basin countries and
basin sub-populations (e.g. indigenous groups, women). Recognizing that cooperation
could mask various forms of conflict and looking at the nexus of water conflict and
cooperation in terms of interactions rather than events, Mirumachi introduced the
Transboundary Waters Interaction Nexus (TWINS) tool (Zeitoun & Mirumachi, 2008).
Yet, this nexus also defines water conflict using high politics and militarized
conceptualizations.

Thus, I argue that the conflict-cooperation paradigm alone is insufficient for
understanding the range of impacts from human interactions with transboundary water.
Particularly, these scales do not sufficiently capture decisions and policies that have
inequitable distributions of environmental costs and benefits. In other words, they do
not capture the environmental justice (also referred to as structural violence)
implications of water decisions, whether cooperative or conflictive. This is especially
true for more nebulously defined qualitative needs like the cultural or aesthetic values
for water resources.

Furthermore, while institutions like treaties are key to cooperative (i.e. less direct violence) basins (according to Wolf et al., 2003), they may also solidify and reinforce existing power imbalances and injustices (Zeitoun & Mirumachi, 2008). Thus, if cooperation alone does not guarantee progress towards environmental justice, it is important to understand the role of institutions like treaties and river basin organizations (RBOs). Do they deter affected countries and communities from meeting their basic human needs, or can institutions be wielded to affirm those needs? What is the role of participatory processes? Practically, how can managers, policymakers, and environmental facilitators understand and respond to structural violence related to natural resource decisions?

The purpose of this dissertation is to bridge the gap between pragmatism and social idealism, between real-world politics and the charge from great philosophers and leaders to create a more just world. Towards this goal, I developed a scale of structural violence in transboundary basins that complements the work of Wolf et al. and Mirumachi et al. (referred to as the London Water Research Group- or LWRG). This tool- called the Integrated Basins at Risk (iBAR) scale- draws from Wolf's (2008) work on water and spirituality, mirroring Maslow's Hierarchy of Needs. I developed a linked method to assess structural violence/environmental justice using the scale as a prism to assess archival events (newspaper articles), interviews, and observational data from conference and panel presentations.

Using the Mekong Basin as a transboundary water case study, I tested the scale and methodology, painting a detailed picture of environmental justice in the basin and the institutional variables associated with positive and negative outcomes. From this, I drew conclusions and produced recommendations relevant to practitioners interested in improving justice outcomes in transboundary basins. Finally, I evaluated the iBAR method's utility as an assessment tool for water conflict facilitators and water managers.

Beyond Cooperation: Environmental Justice in Transboundary Water Management

by
Julie Elkins Watson

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Dean of the Graduate School

I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

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Julie Elkins Watson, Author

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First and foremost, I want to thank my parents, George and Lynne Elkins, who lovingly raised me and instilled in me a love of learning, a sense of adventure, a confidence in my ability to pursue my ambitions, and a willingness to persevere through the difficult and unknown. They support all of my endeavors, even when those endeavors take me to the other side of the world, and they continue to read my increasingly long academic papers (hi, mom!), doing their own follow-up research so we can talk about my work over a game of cards or a Skype call. Their love and support are immeasurable and will always be cherished.

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Finally, if you are reading this, thank you! Either you know me and I have or haven't already thanked you above, or you are opening this dissertation of your own free will (presumably). If you fit the latter, I hope you find something within these pages that helps or inspires you as you continue on whatever journey brought you here.

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Chapter 1: Environmental Justice in Transboundary Water Management

Introduction

The driving motivation behind the dissertation is to find ways for policymakers, facilitators, and human rights advocates to wield transboundary water resources policy and management to make the world a better place, where human suffering and injustices are reduced and human rights are actualized. I propose that water conflict/cooperation practitioners must look "beyond cooperation" in a way that incorporates environmental justice issues at multiple scales alongside the spectrum between water wars and water peace. Thus, my research has five objectives:

1. Better understand how water relates to social/environmental justice
2. Develop a transferrable approach for assessing justice/injustice in transboundary basins
3. Glean insight on the role of institutions in securing justice and human needs
4. Glean insight on the role of participation in securing justice and human needs
5. Draw conclusions/recommendations to better achieve human needs

Recognizing the role that institutional capacity plays in preventing water wars, my primary question is: What institutional factors are associated with positive or negative impacts on human needs related to water? These are the leverage points where practitioners can improve water management to improve people's lives. I have three sub-questions based on the literature about conflict and cooperation and environmental justice. These include:

1. Do negative peace (absence of violence) and positive peace (absence of structural violence) coexist or conflict?
2. What is the role of institutions (such as laws and agreements) in promoting environmental justice related to water?
3. Is there a relationship between stakeholder participation/collaboration and environmental justice outcomes?

To answer my questions, I blend post-positivist and critical theories of water resources conflict and cooperation, and I employ peace studies, Political Ecology, and

environmental justice theories to craft a new tool for evaluating environmental justice in transboundary water politics. Based on Wolf, Yoffe, and Giordano's (2003) Basins at Risk (BAR) Study and its conceptualization of measuring conflict and cooperation events on a scale, I developed a complementary Integrated Basins at Risk (iBAR) scale to assess water decision's implications for human rights and environmental justice. While the BAR scale measures a range of diplomatic, economic, and military hostility and/or cooperation, the iBAR scale examines the structural policies that create disproportionate and unjust allocations of benefits and harms among countries and/or basin populations.

The iBAR scale consists of a series of negative values (-9 to -1), representing impacts that deter the basic human needs of basin populations, and positive values (+1 to +9) that represent impacts of water decisions that affirm or secure basic human needs. Each value in the iBAR represents a certain category of needs, from survival (iBAR ±9) to relationships (iBAR ±7) to knowledge (iBAR ±4) to spiritual needs (iBAR ±2). Within this study, the iBAR tool is used as a semi-qualitative framework for analyzing events (as portrayed in news reports) and as a framework for analysis of ground-truthing semi-structured interviews with water practitioners, plus conference and panel notes and observations.

While the iBAR is intended to be a tool that could be applied in multiple basins or at a global level- to live up to its name and identify Basins at Risk related to environmental justice, this dissertation is a first step towards that objective. Thus, the Mekong Basin is examined as a case study; its rich interactions with water and ripe situation in regard to development and potential water conflict and cooperation make it an ideal basin to examine for environmental justice trends and potential interventions.

This dissertation is divided into several chapters that provide background and justification, detail the methods, share the results, discuss the implications, and finally, provide answers and recommendations based on my research. The following paragraphs break down the progression of what you can expect to find in each section of this document.

In Chapter 1, I describe the Basins at Risk (BAR) study, which laid the groundwork for this study. I discuss what the BAR scale measures and what it overlooks, particularly

focusing on structural violence, i.e. environmental justice related to water resources management decisions. I discuss how the BAR study measures negative peace, but propose that looking at negative peace alone is insufficient for understanding water conflict.

In Chapter 2, I dive into the theoretical underpinnings that create a dissonance between post-positivist and critical perspectives in the water community. Particularly, I discuss Political Ecology theory as it relates to the Hydrohegemony school of thought from the London Water Resources Group. Recognizing that the critical perspective has drawn attention to injustice in water management, I propose that it is time to move beyond our current conversation- bridging the pragmatic and the critical with a constructivist approach that focuses on interventions to build a more just world of water management. I conclude this chapter with a description of my questions, hypotheses, and objectives.

In Chapter 3, I provide a brief description of the Mekong Basin, my case study in which I tested the Integrated Basins at Risk (iBAR) method. I discuss important geographical characteristics, the recent history of the basin, the current political climate, and environmental justice issues that highlight the Mekong as a relevant and timely case study.

In Chapter 4, I introduce the Integrated Basins at Risk (iBAR) methodology and explain the guiding theory that influenced its development.

In Chapter 5, I detail the methods used in this study, starting with a summary of the overall design. I then discuss my archival (newspaper events) methodology, coding scheme, and data processing procedure, highlighting several important criteria for anyone interpreting the results of this data or replicating the study in other basins. Next, I discuss my on-the-ground methods, starting with my interview methods and followed by my observational conference/panel analysis method. I conclude with a description of my analysis techniques.

In Chapter 6, I detail all the results of my analyses, divided into two categories: event-related semi-quantitative results, and interview/conference/panel qualitative results. The event results are divided into several categories of interest, including Least Developed Countries and communities, institutions, dams, comparison to the Basins at

Risk study, and participation. The qualitative results are divided into iBAR observations, institutions, participation, and what I call "The Burn Book"- a compilation of scathing questions and comments delivered at the Mekong International Conference and Save the Mekong panel event.

In Chapter 7, I interpret all of these results by breaking them into themes, again divided by event-related results and qualitative results. I identify nine themes from my analysis of the iBAR events, each discussed briefly. I also interpret five themes from my qualitative, on-the-ground data. I propose a Corruption-Enclosure-Face (CEK) Nexus as an insidious and confounding variable in Mekong water management. I also identify a right hand/left hand problem, unenforceable institutions and the ways other stakeholders are filling that void. Finally, I discuss the potential role of the donor community as a leverage point for better justice outcomes.

In Chapter 8, I revisit my research objectives and synthesize my results as they pertain to the international water community. I discuss what I learned about how water relates to environmental justice, provide commentary about the iBAR method as a potential tool for use in other basins, discuss the role of institutions and participation in addressing water-related injustice, and provide recommendations for practitioners grounded in the themes identified in my research. I conclude with a brief discussion that reconnects my work to both my motivation for the study and the theoretical underpinnings for my approach.

Research Perspective & Definitions

Recognizing that no research is entirely objective, and even the very question asked by a researcher is a political act, I include this brief section in attempt to lay my cards on the table regarding my motivations and particular ethical leanings. I also include a few important definitions to clarify what I mean when I use certain terms.

First, I must out myself as both a skeptical optimist and a practical idealist. I ascribe to intersectional feminism and social justice critiques of modern politics, but I do not believe in critique as an ends. I believe it is absolutely critical that we do not ignore issues of ethics and justice, but I am optimistic in my belief that we must work towards constructing a better, more just world rather than lamenting in its injustices. Thus, I take

a constructivist approach in my research, and I lean towards identifying leverage points for intervention to make positive changes. I do not seek only to understand, but to use that understanding to improve and better the world.

A conversation that has come up several times between my adviser and me is whether the ends justify the means. Is an unjust treaty with some benefits better than no treaty with no benefits? Is a less-inclusive process acceptable if it produces positive results, where an inclusive process would have been stalled? These are transboundary water politics-specific examples of the debate between deontological ethics and consequentialism: Is the better course of action the one that is more procedurally just, or the one that produces better substantive results? I do not have a definitive answer to those questions.

However, I do have caveats. First, I think it is critical to ask the question "for whom?" when talking about water cooperation and water benefits. I believe that the people who can make the wisest decisions about natural resource management are those who live in and depend on the system (a wisdom that can be enhanced via more complete knowledge about the intricacies and interconnectedness of the system). I question whether even a benevolent, completely altruistic water czar (or more likely, a group of water scientists) can make decisions that fully appreciate the spectrum of human needs and values of water. On the other hand, I also believe that less suffering is better than more suffering, and thus see a place for pragmatism as an interim solution. Thus, my stance could best be what is described as favoring rule consequentialism. In terms of water, this means I favor holding up meaningful, representative participation as an ideal and actually working to achieve that, but reducing violence and suffering through other means as we work towards that goal.

This dissertation represents this rule consequentialist position: I hold up participation as the ideal, but the iBAR scale focuses most acutely on the impacts of decisions/actions. In fact, the Mekong Basin is a good example of a place where very few participatory processes surfaced in my analysis, but I illuminate and suggest other methods for improving substantive justice results while laying a better foundation for more democratic decision-making in the future.

The following are some important operationalizations and definitions that further elucidate my research perspective:

- Events and Interactions: Conflict and cooperation events are defined by the BAR scale, while water interactions are defined by the Transboundary Waters Interaction Nexus (TWINS) tool (Zeitoun & MIrumachi, 2008). (Both of these approaches are discussed in greater detail in the next section of this chapter.) However, I also use the term "events" to describe water decisions or activities that have some projected/stated effect on human needs.

- Needs-Affirming: This is when an action/activity has the end result of enabling some stakeholder to meet/continue meeting one of their basic human needs.

- Needs-Deterring: If an action changes the way people interact with water in a way that limits their ability to meet a basic human need, that activity is considered needs-deterring.

- Transcendent Needs: Transcendent needs represent the need to care for needs beyond one's own. The iBAR scale is human-centric. It does not separately capture the intrinsic value of nature or the needs of nature. It does capture those needs through the lens that they are human values. Thus, many of the impacts on transcendent needs (iBAR ±1) are actually the result of a discussion of positive or negative impacts on the environment, but they are technically captured because they impact some stakeholder's (e.g. environmental NGOs', local communities') transcendent need to care for the environment.

- Environmental Justice (EJ): I rely on the U.S. Environmental Protection Agency (EPA) definition of environmental justice in terms of fair treatment and meaningful involvement, which has transcended the U.S. domestic scale to the United Nations Environment Programme (UNEP) definition as an equitable distribution of environmental costs and benefits. Thus, my

conceptualization of justice is a hybrid of participatory justice and distributive justice.

- Least Developed Countries: Cambodia, Laos, and Myanmar are the focus of my country-level EJ analyses based on their designation as Least Developed Countries (LDCs) by the United Nations (UN). The UN defines LDCs by poverty, human capital weakness, and economic vulnerability.

- Communities: Ideally, a measure of EJ should include precise demographic information about race, ethnicity, age, gender, and socio-economic status. However, my data sources were coarse in their reporting on the specific demographics of communities affected by some activity or event. While it was contextually implied that these communities were vulnerable, there was not enough information to make precise judgments of vulnerability. Thus, "communities" defined here refers to any sub-national group of people, often designating impacted poor, indigenous, riverine communities, or local groups of fishers or farmers affected by some decision.

- Positive Peace: Also referred to as social/environmental justice, characterized by needs-affirming impacts. The opposite of positive peace is structural violence, also referred to as environmental injustice, characterized by needs-deterring impacts- particularly on Least Developed Countries and impacted communities.

- Negative Peace: The absence of physical violence, which may or may not be realized through cooperative arrangements and institutions. According to the TWINS matrix, there may be negative peace in a basin simply because riparian neighbors do not interact or have any pressing issue over which they escalate to violence.

- Human Rights: In this dissertation, human rights are examined as a function of environmental costs and benefits. I look at basic human needs, which align well with the rights specified in the Universal Declaration of Human Rights (1948), as they relate to human interaction with water resources. Rights are examined from a liberty perspective (as discussed below), with a

focus on whether an action/decision deters someone from meeting a need. The iBAR also examines what needs are affirmed (and for whom), but the implication is not that the decision-maker is obligated to affirm all needs for everyone. Rather, the obligation is not to hinder the rights of others, while striving for an equitable distribution of any needs-affirming benefits.

- Institutional Capacity: I use a stricter definition of institutions and institutional capacity as inter-state treaties/agreements or river basin organizations (RBOs) for the purpose of my analysis, but later conclude that a broader definition of institutions that captures NGO, civil society, and academic initiatives may be better suited for analyses of environmental justice in transboundary water politics.

Note that environmental justice (EJ) is defined both as equal protection from (or equal distribution of) environmental harms and as equitable access to (or distribution of) environmental benefits. There are two ethical questions that emerge from this definition. First, there is the notion of equitable versus equal. Equal implies that each stakeholder should get an identical gift basket of environmental benefits and harms. However, equity implies fairness in the distribution of benefits and harms. Second, there is the debate between liberty and entitlement. Does EJ suggest that everyone is entitled to environmental benefits, or that they are free to pursue those benefits?

The iBAR method developed and applied in this dissertation looks at EJ as equitable distributions, focusing on what stakeholders claim to need- and whether decisions facilitate or hinder the meeting of those needs- rather than measuring whether everyone gets equal shares. Additionally, the iBAR approach, as I apply it, takes a liberty (rather than entitlement) perspective on rights, by its nature of looking at whether an action facilitates or deters a given stakeholder from meeting their needs. In both cases, the iBAR approach focuses on opportunity rather than substantive deliverables. A researcher could rework the iBAR method to focus on equality and entitlement; however, it is not the approach taken here,

Finally, in line with my constructivist approach and reliance on Political Ecology as a guiding theory, I study discourse- via the media, conversations with practitioners, and observations of presentations and interactions at a conference and panel discussion- as

my primary form of understanding and analyzing justice and politics in the basin. Thus, my story about the Mekong is based on the human construction of the Mekong rather than physical measurements of its characteristics. For the type of research I wanted to do- measuring human needs for culture and relationships alongside identity and survival- I do not think there is a better way than to accept the understanding of reality as told by the people who work and live in the basin.

Water Conflict & Cooperation

Freshwater, vial to life on earth, has a pesky quality of being totally oblivious of the political boundaries humans have drawn across the surface of the earth. This lack of consideration means that water is constantly crossing borders and creating both tensions and opportunities for neighboring peoples to either fight or cooperate over shared transboundary water resources. The debate in the late 1990s and early 2000s about the potential for water wars drove Wolf, Yoffe, & Giordano to attempt to quantify and understand the actual patterns of interactions between riparian countries over transboundary water resources. Their study, Basins at Risk, made great strides in our understanding the nature of water conflict and cooperation around the world (Wolf, Yoffe, & Giordano, 2003). Wolf et al. identified all of the transboundary river basins (a number that shifts as borders change, but currently hovers near 280), and then they set about searching news sources around the world for evidence of conflict and cooperation. What they found was quite astonishing: based on their definitions of conflict and cooperation, people tend to cooperate over water much more than they compete (see Figure 1).

Number of Events by BAR Scale 1948-2008
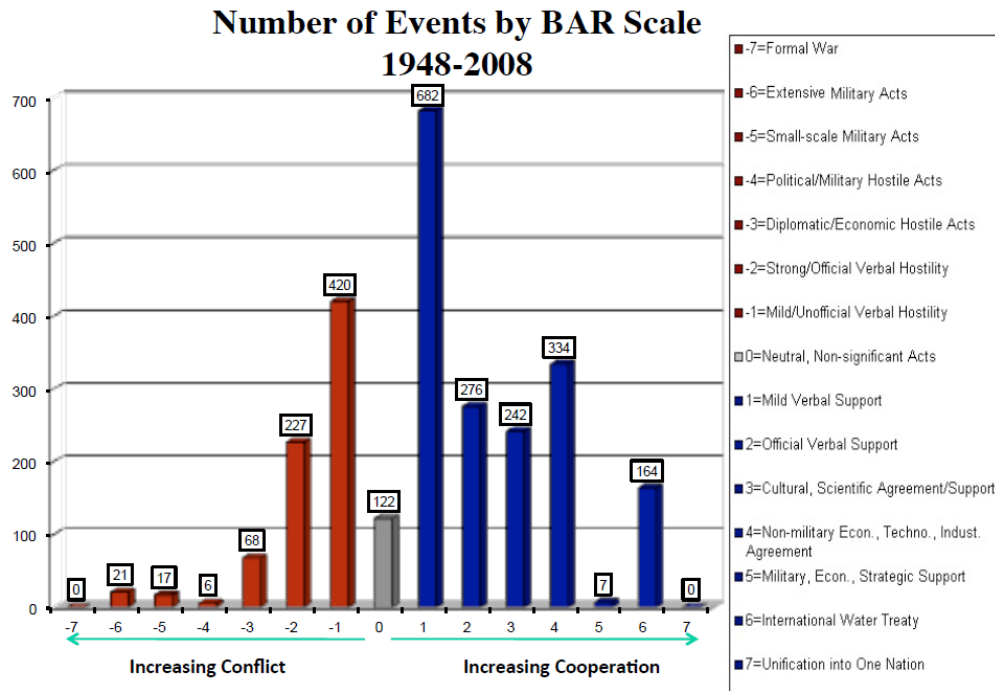
Source: De Stefano, L., P. Edwards, L. de Silva and A. T. Wolf 2010. "Tracking Cooperation and Conflict in International Basins: Historic and Recent Trends." Water Policy. Vol 12 No 6 pp 871–884. Adapted with permission of the authors.

Figure 1. Basins At Risk Scale. Source: Wolf, Yoffe, & Giordano, (2003).

Wolf et al. (2003) went on to examine a wide array of river basin features to figure out what characteristics are associated with conflict. Surprisingly, the physical characteristics (e.g. water scarcity/aridity) of a basin mattered very little. However, the institutional capacity, or ability of the basin management organizations to absorb change, was strongly linked with conflict/cooperation. Wolf et al. (2003; p. 29) clarify:

> "It turns out then that very rapid changes, either on the institutional side or in the physical system, which outpace the institutional capacity to absorb that change, are at the root of most water conflict, as reflected in two sets of indicators: 1) "internationalized" basins, i.e. basins which include the management structures of newly independent states, and 2) basins which include unilateral development projects and the absence of cooperative regimes."

In light of these findings, the role of institutions such as international treaties and River Basin Organizations (RBOs) becomes central to enhancing cooperation. These types of institutions provide a basin with the resilience it needs to respond to sudden shocks that would lead to conflict in a more hostile, less institutionally prepared basin. Thus, based on these results, any forward-looking basin should focus its efforts on

building transboundary institutional capacity via treaty and RBO relations with its neighbors.

However, other researchers suggest that institutional capacity can be a bad thing. We will examine why below, but note first the nature of the Basins at Risk (BAR) scale. The BAR scale ranges from -7 to +7, with negative numbers representing increasing conflict and positive numbers representing increasing cooperation. Conflict is defined based on Azar's COPDAB International Conflict and Cooperation Scale, and "conflict" is essentially defined as physical/direct violence, sanctions, or threats of violence/sanctions (Wolf et al., 2003; pp. 33-34). While these are very obvious and critical forms of subjecting others to suffering, this narrow definition of conflict does not encapsulate the full spectrum of violence. Because of this narrow definition, the results are more narrowly applicable to only a subset of outcomes. As such, aiming for cooperation is misleading, and though it may mean the absence of military altercations, it cannot be assumed to imply the absence of other forms of violence.

While the work done by Wolf et al. broke ground and accomplished a feat of documenting and analyzing all reported transboundary water events between 1948 and 1999, the Basins at Risk Study set the stage for others who criticize the 2003 paper's underlying assumptions. By systematically and exhaustively studying water events and packing them into conflict/cooperation boxes, Wolf et al. created opportunities for others to then unpack, question, and rebuild our understanding of water interactions.

The major limitation of Basins at Risk is its dualistic nature: conflict or cooperation, war or peace. It focuses on individual events, which represent either conflict or cooperation, rather than the overall pattern of interactions over water, which can be mixed. Mark Zeitoun and Naho Mirumachi (2008; p. 298) criticize this dualism, noting, "The examination of either conflict or cooperation, we argue, refutes the reality of the vast majority of contexts where cooperation and conflict actually co-exist, and perpetuates the paradigm that any conflict is 'bad', and that all forms of cooperation are 'good'." Likewise, Stone (2009; p. 78) warns:

> "All violence is injustice, but let's be careful where we create opposition
> between what is happening and what we think ought not to happen.
> Somewhere between what is actually occurring and our concepts about what is

occurring, we find a rich and fertile zone of possibility. We need to leave behind the place where our ideas get in the way of seeing the complexity and interdependence of a given situation."

Zeitoun and Mirumachi propose, instead, to view water interactions as a mix of conflict and cooperation with a broader set of definitions. Mirumachi introduced the Transboundary Waters Interaction Nexus (TWINS) to combat dualistic thinking, plotting cooperation and as X and Y values of the same scale, and allowing for a basin's water interactions to be plotted based on the nexus of conflict and cooperation (Zeitoun & Mirumachi, 2008). Though it sounds like an answer to the dualistic problem in the BAR scale, it is better categorized as a complementary way of viewing water conflict and cooperation using a nexus approach. It serves as a different lens that lends perspective on basin relations, but it, too, focuses on water interactions with a narrow definition of conflict and cooperation.

These authors remind us that, in our efforts to make sense of the world, we too often resort to using simple, dualistic boxes to categorize phenomena: good/bad, conflict/cooperation, war/peace, etc. Yet, Zeitoun, Mirumachi, and Stone all suggest that important information and possibilities are foregone when we limit our understanding to dualisms. While both the BAR and TWINS approaches are valuable for understanding water events and interactions, they both use conceptualizations of water conflict and cooperation that narrowly frame our discussions about transboundary water politics. By focusing on water conflict and cooperation, particularly on high politics and physical violence conceptualizations of conflict, we miss important information and a realm of possibilities to understand and improve water interactions as they relate to low politics and other forms of violence.

Structural Violence & Environmental Justice

In labeling discordant events with a specifically defined range from threats and diplomatic hostility to small or large-scale military acts, Wolf et al. (2003) defined the extreme manifestation of water conflict as direct violence. Likewise, Mirumachi's TWINS matrix's conflict spectrum peaks at violised (i.e. physical violence) interactions. However, Johan Galtung illuminates two other types of violence: structural violence and

cultural violence (Galtung, 1969; Galtung, 1990). Galtung first describes peace as the absence of violence, which is simple enough, except that it is highly dependent on the definition of violence. Galtung (1969) broadly defines violence, claiming "violence is present when human beings are being influenced so that their actual somatic and mental realizations are below their potential realizations." He asserts:

> "… we are rejecting the narrow concept of violence - according to which violence is somatic incapacitation, or deprivation of health, alone (with killing as the extreme form), at the hands of an actor who intends this to be the consequence. If this were all violence is about, and peace is seen as its negation, then too little is rejected when peace is held up as an ideal. Highly unacceptable social orders would still be compatible with peace" (Galtung, 1969; p. 168).

Galtung (1969) continues by defining a myriad of ways in which a broad definition of violence captures what the narrow, physical/direct violence definition does not. He talks specifically about injustices related to avoidable, uneven distribution of wealth, resources, and burdens in society, calling this type of violence "structural violence." Galtung explains that this type of violence may not even emerge in a news report that could be captured by a more fine-tuned BAR scale, as:

> "The object of personal violence perceives the violence, usually, and may complain - the object of structural violence may be persuaded not to perceive this at all. Personal violence represents change and dynamism - not only ripples on waves, but waves on otherwise tranquil waters. Structural violence is silent, it does not show - it is essentially static, it is the tranquil waters. In a static society, personal violence will be registered, whereas structural violence may be seen as about as natural as the air around us. Conversely: in a highly dynamic society, personal violence may be seen as wrong and harmful but still somehow congruent with the order of things, whereas structural violence becomes apparent because it stands out like an enormous rock in a creek, impeding the free flow, creating all kinds of eddies and turbulences" (Galtung, 1969; p. 173).

Thus, even when there are profound injustices surrounding water allocation and infrastructure within a country, the sub-state status of the groups involved combined with the non-direct nature of the structural violence means that most of these actions do not register on the BAR scale. Direct violence registers as an event, while structural violence is an ongoing process (Galtung, 1990; p. 294). Thus, it is helpful to picture violence as an iceberg; direct violence is the visible point above the water, while structural and cultural violence are the colossal, amorphous mass obscured beneath the surface.
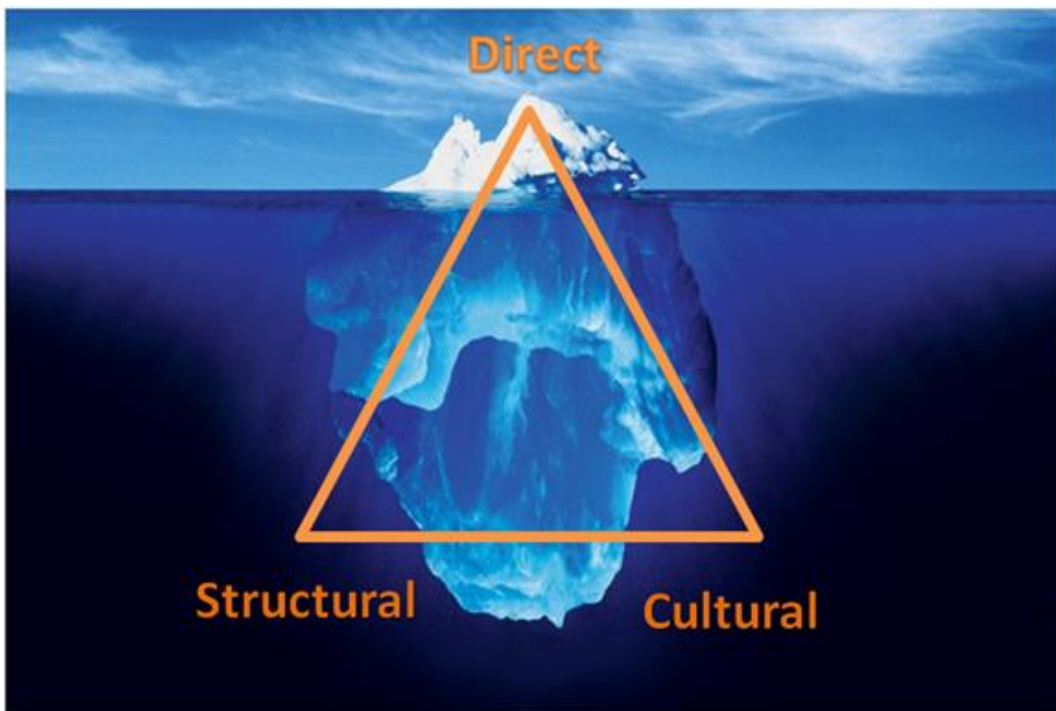
Figure 2. Galtung's conceptualization of violence as a three-part entity transposed over an iceberg. Photo Source: Stocktouch (2012).

Cultural violence[1] explains why structural violence happens beneath the radar. While structural oppression of a group may seem like it would stand out, Galtung (1990;

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[1] While the focus here is on injustice towards people via environmental decisions, cultural and structural violence can also be directed at the environment. Galtung (1990; p. 294) poses, "How about violence against nature? There is the direct violence of slashing, burning, etc., as in a war. The structural form of such violence would be more insidious, not intended to destroy nature but nevertheless doing so: the pollution and depletion associated with modern industry, leading to dying forests, ozone holes, global warming, and so on. What happens is transformation of nature through industrial activity, leaving non-degradable residues and depleting non-renewable

p. 291) poses that "Cultural violence makes direct and structural violence look, even feel, right - or at least not wrong." He defines structural violence as "any aspect of a culture that can be used to legitimize violence in its direct or structural form," not as an event or process, but as an ingrained "invariant" in the culture (Galtung, 1990; p. 294). Thus, a state can "legitimately"- because of cultural violence- oppress a group's survival, well-being, identity, and/or freedom- i.e. perpetuate structural violence while never causing a blip on the BAR scale.

"Structural violence" is not a term one hears often, even amongst activists and human rights campaigners. Instead, we much more frequently use the term social justice (or injustice), which Galtung confirms. Social justice issues linked to the management of natural resources are referred to as environmental justice (EJ), a term with roots in the 1960's Civil Rights and Environmental movements but gained traction in 1994, when President Bill Clinton issued Executive Order 12898 requiring federal agencies to adapt EJ strategies (EPA, 2012; Executive Order 12898). The EPA adapted strategies to incorporate EJ into agency functions, producing a strategy report that included a working definition of environmental justice:

> "Environmental Justice [is] the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair Treatment means no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies" (EPA, 2011; p. 3).

The "fair treatment" portion of the definition is phrased in the negative, but we can rephrase it in the inverse to define environmental justice not just as "no group… bear[ing] a disproportionate burden of environmental harms and risks," but also "equal access to environmental benefits to meet basic human needs." Equal access to benefits, of course, is a political minefield in a highly individualistic and capitalist society such as the United States. However, the EPA Environmental Justice 2014 report continues to say

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resources, combined with a world-encompassing commercialization that makes the consequences non-visible to the perpetrators. Two powerful structures at work, indeed, legitimized by economic growth. The buzzword 'sustainable economic growth' may prove to be yet another form of cultural violence."

"In the Agency's implementation of environmental justice, EPA has expanded the concept of fair treatment to include not only the consideration of how burdens are distributed across all populations, but also how benefits are distributed" (EPA, 2011; 3).

The concept of environmental justice has since expanded into the international scale, and the definition at the international level matches the EPA's expanded view of EJ. Like the EPA's 2014 report, the United Nations Environment Programme (UNEP) includes both environmental costs and benefits in its definition of environmental justice:

> "In general, environmental justice seeks to ensure that authorities fairly allocate and regulate scarce resources to ensure that the benefits of environmental resources, the costs associated with protecting them, and any degradation that occurs (i.e. all the benefits and burdens) are equitably shared by all members of society" (Shelton & Kiss, 2005).

Both the EPA and UNEP define EJ as the equitable distribution of environmental costs and benefits. This supports the notion that the distribution of negative impacts and the distribution of environmental benefits are both important aspects of achieving environmental justice.

Participation: The Crux of Environmental Justice

In the EPA's definition, note the key phrase "meaningful involvement," which implies some kind of representative public participation. The EPA claims (2013) that EJ "will be achieved when everyone enjoys the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work." What do they mean when they say "meaningful involvement" and "equal access to the decision-making process"? The EJ 2014 report clarifies:

> "Meaningful Involvement means that: (1) potentially affected community members have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected" (EPA, 2011; 3).

Simply put, the EPA proposes that public participation processes are necessary for just decision-making, and beyond that, community concerns should be considered and should influence the decision-making process.

Likewise, the UNEP encapsulates public participation and environmental justice more broadly under environmental rule of law. According to the UNEP, "The constituent elements of environmental rule of law can be said to include, inter alia, adequate and implementable laws, access to justice and information, public participation, accountability, transparency, liability for environmental damage, fair and just enforcement, and human rights" (UNEA, 2014). Environmental rule of law, including public participation, is promoted as the means by which EJ can be addressed (UNEA, 2014). The UNEP defines public participation very broadly to include anyone who may be affected by an environmental decision or action. Specifically, the UNEP lists:

> "Public participation is based on the right of those who may be affected to have a say in the determination of their environmental future. Depending on the jurisdiction, this may include foreign citizens and residents. In the EIA context, the public typically incorporates all stakeholders including communities, women, children, indigenous people, non-governmental organizations, other State and non-State institutions" (Shelton & Kiss, 2005).

Notably, non-governmental organizations (NGOs) and foreign interests are included in this definition. The UNEP highlights the role of NGOs in particular as a catalyst for participation:

> "…NGOs may compile data, seek to influence legislation, intervene in decisions on licensing or permitting projects, and monitor compliance with environmental laws. With these roles and because of their greater means, expertise, and organized efforts, NGOs often can more effectively assert public rights of information and participation" (Shelton & Kiss, 2005).

Participation as a value has also been promoted within the world of transboundary water management. In the International Union for the Conservation of Nature (IUCN)'s "Share" report, Sadoff et al. assert, "Participation builds trust, ownership and common understanding among stakeholders – the value of this process cannot be overstated. Participation clarifies goals, enhances effectiveness, diminishes conflicts and is essential to sustaining cooperative transboundary water management (Sadoff, Greiber, Smith, & Bergkamp, 2008; pp. 86).

However, Sadoff et al. point out that it is important to distinguish between passive and active participation; merely informing the public what the policymakers or administrators plan to do is passive and not true engagement (Sadoff et al., 2008; 44). Active participation, conversely, requires interaction between the decision makers and

the stakeholders, and exists on a spectrum (Sadoff et al., 2008; 44). This spectrum (see

Table 1) is clarified in the 2010 IUCN "Negotiate" report, wherein Dore, Robinson, and

Smith (2010; pp. 25-26) explain that the lower, token forms of collaboration are

inadequate, as public input can be easily dismissed or ignored. At the far other end, the

authors recognize that full stakeholder empowerment (handing the decision to the

stakeholders) is often impossible within the various forms of government that already

have a decision-making authority in place.

Nonetheless, they promote what they call "constructive engagement" (here

referred to as collaboration) as a necessary component of achieving desirable outcomes

related to transboundary water (Dore et al., 2010; pp. 23-26). They state:

> "Constructive engagement does not remove the passions people bring to water
> disputes and decisions, but it offers a way of accommodating the diverse
> interests and perspectives that inspire those passions in processes for finding
> agreed ways forward… Stakeholders choosing constructive engagement
> recognize that because of the complexity of water, outcomes are likely to be
> less desirable and problems inflated by acting in isolation. They recognize that a
> preferable track is to work with others to find options that are mutually
> acceptable" (Dore et al., 2010; p. 23).

Although the EPA's interpretation falls between "consulting" and "involving," the IUCN

reports suggest that true "meaningful involvement" to achieve EJ goals probably falls

closer to collaboration (or in rare cases, empowering) on the public participation

spectrum (Sadoff et al., 2008; Dore et al. 2010).

Table 1. Public participation spectrum. Source: Dore, Robinson, & Smith, (2010).

Inform	Consult	Involve	Collaborate	Empower
Goal of participation				
To provide the public with balanced and objective **information** to assist them in understanding the problems, alternatives, and solutions	To obtain public **feedback** on analysis alternatives and/or solutions	To work directly with the public throughout the process to ensure that public issues and concerns are consistently **understood and considered**	To **partner** with the public in each aspect of the decision including the development of alternatives and the identification of preferred solutions	To place final **decision making** in the hands of the public
Promise to public participants				
We will keep you informed.	We will keep you informed, listen to and acknowledge your concerns, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your issues and concerns are directly reflected in the alternatives developed and provide feedback on how public input influenced the decisions.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decision to the maximum extent possible.	We will implement what you decide.
Examples of participation tools				
Fact sheets, websites, open houses	Public comment, focus groups, surveys, public hearings	Workshops, deliberative polling, MSPs and associated tools, such as scenario building and exploration	Citizen advisory committees, MSPs including consensus-building processes	Citizen juries, ballots, delegated decisions, Multi-Stakeholder Processes (MSPs), etc.

Positive & Negative Peace

Returning to Galtung's (1969) definition of peace as the absence of violence, we can see now that the multifaceted definition of violence requires a corresponding multifaceted definition of peace. Galtung (1969) divides peace into positive peace and negative peace. Negative peace refers to the common perception of peace as the absence of physical, direct violence (e.g. ceasefire). Positive peace, on the other hand, is the absence of structural violence. To use more common terms, positive peace is the achievement of social (or in our case, environmental) justice. Galtung illustrates this concept simply in a graph:
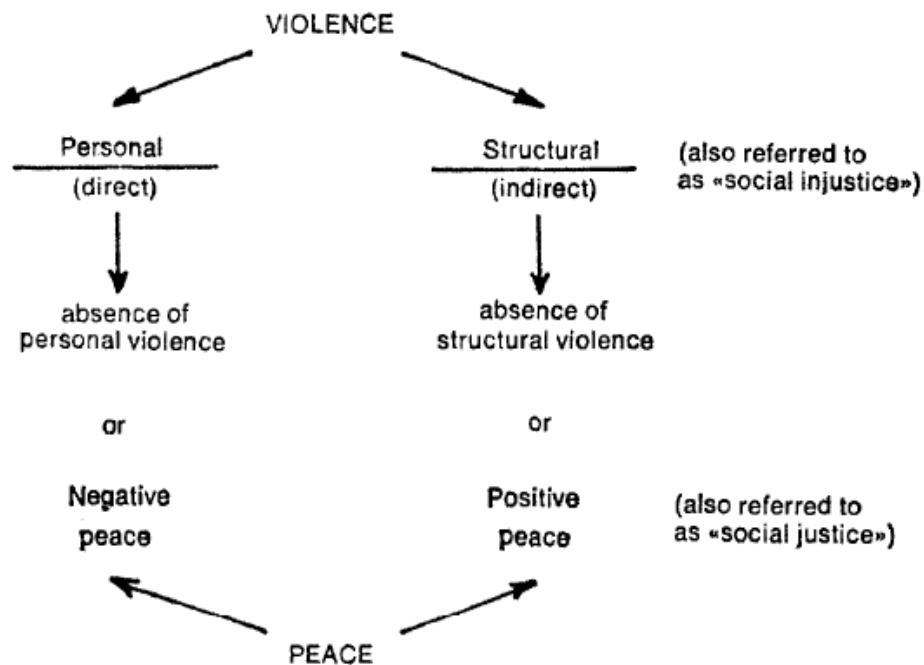
Figure 3. Extended concepts of violence and peace. Source: Galtung (1969).

The use of the term "positive" is not singular to Galtung; it is a term used frequently to describe active achievement or acceptance of some value. For instance, positive psychology stems from Abram Maslow's critique of psychology as "far more successful on the negative than on the positive side; it has revealed to us much about man's shortcomings, his illnesses, his sins, but little about his potentialities, his virtues, his

achievable aspirations, or his full psychological height" (Maslow, 1987; p. 354). He proposes, "Social psychology must shake itself free of that variety of cultural relativism, which stresses too much man's passivity, plasticity, and shapelessness and too little his autonomy, his growth tendencies, and the maturation of inner forces... Social institutions, and indeed culture itself, are customarily studied as shapers, forcers, inhibitors, rather than as need gratifiers, happiness producers, self-actualization fosterers" (Maslow, 1987; p. 376). In the same way, focusing only on negative peace in water resources conflict management is what Maslow would call the "low-ceiling"; it limits our discussion to only the worst of the obvious bad (i.e. wars over water) rather than on achieving the positive (e.g. human rights, Millennium Development Goals).

The terms "positive" and "negative" have also been applied to concepts such as freedom and liberty. This is a hot point of discussion for libertarians, and Aaron Powell writes on a libertarian blog that "negative liberty means "freedom from," while positive liberty means "capacity to"... Another way of thinking about the difference—though again, it's a rough one—is to see negative liberty as being about the absence of *external* limits, while positive liberty is about the absence of *internal* limits" (Powell, 2012). In this case, internal limits are structural injustices leading to poverty and other disadvantages that limit the potential of individuals. Applied to water, these internal limits are manifested as poverty, loss of fish stocks for livelihood, displacements for large water projects, lack of sanitation, disproportionate exposure to waterborne disease, and the degradation of cultural or spiritually significant places and practices. In each of these cases, no one is physically barring a certain person from a subpopulation from achieving basic human rights; however, the disproportionate negative consequences (environmental injustices) borne by the individual limit his or her capacity to achieve basic human rights (survival, security, dignity, social and cultural needs, freedom of spiritual practice, etc.).

The negative of looking only at negative peace

Worryingly, many practitioners[2] and academics write off social and environmental justice as too lofty of goals, stating that humankind has not yet managed to end war and genocide, thus centering direct violence (and negative peace) as the top priority. A meta-analysis of 50 years of two prominent peace research publications revealed that negative peace has always been the primary focus, though intrastate and non-state violence have increased in prominence (Gleditsch, Nordkvelle, & Strand, 2014). Cooperation is studied as a means to reduce the probability of direct violence, but positive peace as a means of addressing structural violence has represented a marginal voice in the literature (Gleditsch et al., 2014).

Likewise, water has become securitized- linked with high politics and top officials rather than the low politics of citizens' everyday lives (Graeger, 1996). Graeger (1996) argues that this securitization makes it easier for politicians to devote their attention to environmental issues, but it also truncates the range of tools and solutions available. The act of achieving negative peace in a basin requires great effort and political capital from the negotiating parties and international community; adding additional human rights issues or trying to address systematic environmental injustices among populations within countries might cause the negotiation to break down. Should we as water conflict practitioners accept limiting our sights to an interim solution that deals with cooperation but not injustices? Is an agreement that prevents direct violence but allows (or institutionally bolsters) the continuation of injustices better than no agreement at all?

Water policy scholars confirm this trend of structural and cultural violence in water interactions. Warner and Zeitoun (2008; p. 807) claim, "The absence of war does not mean the absence of conflict or the presence of 'peace'. Similarly, the existence of a treaty or some form of cooperation over transboundary water does not mean the absence of conflict. Cooperation, after all, is not always voluntary…" They describe the

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[2] Evidence suggests that elites from highly developed countries are more likely to prioritize negative peace over positive peace, while elites from less developed countries are more likely to prioritize positive peace (Sylvester, 1980). Thus, the securitization of water may be a Western-imposed value.

concept of hydrohegemony as a country that uses tactics of coercion and consent to make itself the most powerful among supposed equals, propagating their legitimacy as top dog by steering the agenda, controlling the discourse, and by imposing a culture where the oppressed accept their lot (Warner & Zeitoun, 2008; pp. 805-06; Zeitoun & Allan, 2008; p. 9). Once power asymmetries are in place surrounding water governance/allocation, they are very hard to break, and "Interaction over water issues set within a context of structural power asymmetry is qualifiably and substantially different than when the playing field is more level" (Warner & Zeitoun, 2008; pp. 805-06).

Warner and Zeitoun go on to call for a multi-layered approach when examining power relations in water resource governance. They highlight the importance of not only international power disparities, but also sub-state power dynamics, claiming, "…State actors may collude with each other at the expense of subnational actors, calling attention to the locally exploitative aspects of international water policies. [This] point recalls the relevancy of the African proverb that "it doesn't matter whether elephants fight or make love; in all cases, the grass beneath them suffers"" (Warner & Zeitoun, 2008; p. 808).

Again, this illustrates how the securitized water/negative peace perspective is the low-ceiling approach to water conflict management. What if, instead of causing transboundary agreements to disintegrate, achieving positive peace leads to long-term resilience for both positive and negative peace? By extension, what if achieving human rights is the key to achieving world peace? Dr. Martin Luther King Jr., in his 1963 Letter from Birmingham Jail, said, "Injustice anywhere is a threat to justice everywhere. We are caught in an inescapable network of mutuality, tied in a single garment of destiny. Whatever affects one directly, affects all indirectly." By King's reasoning, our global wellbeing is interdependent, and thus, global peace rests on unmasking and ending injustice everywhere. However, Galtung (1969; 184) warns against pitting positive and negative peace against one another:

> "…too much research emphasis on one aspect of peace tends to rationalize extremism to the right or extremism to the left… When put into practice both may easily develop into well-known social orders where neither of the two aspects of peace are realized: gross social injustice is maintained by means of

highly manifest personal violence. The regime usually tries to maintain a status quo, whether it means forceful maintenance of traditional social injustice that may have lasted for generations, or the forceful maintenance of some new type of injustice brought in by an attempt to overthrow the old system."

Yet, while extremism is not preferable, neither is a middle-of-the-road course.

Galtung (1969; 184) asserts:

"Efforts to avoid both personal and structural violence may easily lead to accept one of them, or even both. Thus, if the choice is between righting a social wrong by means of personal violence or doing nothing, the latter may in fact mean that one supports the forces behind social injustice. And conversely: the use of personal violence may easily mean that one gets neither long-term absence of violence nor justice."

Thus, practitioners who ignore environmental justice in favor of a more securitized discussion of water and direct violence are complicit in injustice. In his Letter from Birmingham Jail, Dr. King calls out these moderates:

"I have almost reached the regrettable conclusion that the... great stumbling block in [the] stride toward freedom is... [the] moderate, who is more devoted to "order" than to justice; who prefers a negative peace which is the absence of tension to a positive peace which is the presence of justice; who constantly says: 'I agree with you in the goal you seek, but I cannot agree with your methods of direct action'; who paternalistically believes he can set the timetable for another man's freedom; who lives by a mythical concept of time and who constantly advises the [oppressed] to wait for a 'more convenient season.'"[3]

In his letter, King criticizes those who would rather put justice on the back burner to avoid the discomfort of tension and who blamed him, as an activist, for creating tension:

"Actually, we who engage in nonviolent direct action are not the creators of tension. We merely bring to the surface the hidden tension that is already alive... injustice must be exposed, with all the tension its exposure creates, to the light of human conscience and the air of national opinion before it can be cured."

Continuing to study conflict only manifested in its direct, physical form would perpetuate the hydrohegemonic powers that rely on this system of quiet oppression to maintain their control. Doing so puts us in consort with the privileged moderates who were unwilling to endure the discomfort of standing up for justice.

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[3] Paraphrased slightly for generality.

However, Galtung (1969; 185-85) proposes that we should not jump to pick a camp or pass judgment, but rather, look for intersections where positive and negative peace can coexist. Like Maslow, he suggests looking at the positive advances (rather than focusing on the negative) in dissociative and associative nonviolence, theories of egalitarian organization, participation, and collaboration (Galtung, 1969; 186). He concludes:

> "… once the double goal has been stated - that peace research is concerned with the conditions for promoting both aspects of peace - there is no reason to believe that the future will not bring us richer concepts and more forms of social action that combine absence of personal violence with fight against social injustice once sufficient activity is put into research and practice. There are more than enough people willing to sacrifice one for the other - it is by aiming for both that peace research can make a real contribution" (Galtung, 1969; 186).

In sum, literature in peace studies and water politics suggests that conflict and cooperation are much more complex than the dualistic, direct violence-centric BAR scale implies. While the Basins at Risk study opened the door for a myriad of research on water interactions, it would be over-simplistic and perhaps dangerous to rely on this scale as a measure of true "peace" as defined by Galtung as the absence of any imposition- whether direct, structural, or cultural- on a person's potential to meet their needs. I say "dangerous" because research by Zeitoun and others suggests that the very remedy suggested by Wolf et al. - institutional capacity (treaties, etc.)- is the culprit that solidifies unjust, hegemonic power dynamics that oppress states and subnational populations.

My dissertation will serve as another step towards Galtung's goal of aiming for both positive and negative peace. I will work to expose and understand environmental justice/injustices surrounding water resources decisions and management institutions. Furthermore, I will combine negative peace methods in transboundary water conflict research (i.e. the BAR scale) with positive peace (environmental justice) concepts, creating a new framework for understanding environmental justice and addressing it in a way that is compatible with- rather than incoherent to or overshadowed by- the securitized water paradigm.

Chapter 2: Theoretical Underpinnings

Nature-Society Geography

This dissertation represents Political Ecology within the field of Geography. First, my focus on marginalized communities and environmental justice situates my study with many others in the field of Political Ecology. Drawing on the London Water Research Group (LWRG) critical research on transboundary water webs and interactions, I am exploring how hegemonic terms such as "water wars" or even "water cooperation" differ from people's actual embodied experiences (e.g. a cooperative transboundary structure may disenfranchise a minority group and hinder its ability to achieve basic water needs). Second, my study is well situated within nature-society geography- part of a "four-field geography" (along with human geography, physical geography, and GIScience/cartography) in 2001 (Zimmerer, 2010). Zimmerer (2010) even lists political ecology as one of the major nature-society themes in the Annals of the Association of American Geographers. My study of water policy and management institutions and how they affect the resources and the human communities that depend on those resources to meet their basic needs is firmly nature-society geography. Third, geography is useful in its conceptualizations of scale, and my study will expand upon current literature on water interactions at the national and basin levels to include sub-national interactions. By using various qualitative and quantitative lenses applied to various scales of analysis, I can gain additional insight into the web of interactions between politics and ecology.

Political Ecology History

Political Ecology is an interdisciplinary field with roots in geography and anthropology. This section will provide a brief overview of the history and major schools of thought in the field. I will demonstrate that political ecology goes beyond traditional human-environment (social-nature) relationships by including humanity as a part of, not a dualism with, nature. Furthermore, political ecology's focus on politics and engagement with marginalized groups makes explicit what other fields political leanings are implicit (and perhaps more dangerous). Finally, I will discuss political ecology in the field of water resources. Particularly, I will explore how the hydro-hegemony paradigm reflects political ecology themes and ideals. Through this discussion, I will demonstrate

the necessity of further political ecological research related to transboundary water interactions.

Russian aristocrat and geographer Peter Alexeivich Kropotkin was arguably the first political ecologist (Robbins, 2004). His research in the Russian Far East led him to an understanding that species survival is continued through cooperation, organization between people, and mutual aid. He renounced his title, adopted a "social cooperative" anarchist political position, and tried to dismantle the hierarchic systems in both society and science (Robbins 2005). His focus on production, archival and field based research, the disenfranchised, and traditional ecological knowledge set the stage for what eventually became Political Ecology.

In the early 20th century, some geographers and anthropologists moved away from positivist and post-positivist orientations and began to adopt a critical approach to research. Researchers like Humboldt, Reclus, Wallace, and Sommerville brought up themes of degradation, sustainability, and human transformation of the earth. Hazards research followed, and the critical examination of hazards through an early political-ecological perspective led to the emergence of environmental justice (Robbins 2005).

At a time when quantitative, positivist/post-positivist approaches were being pushed in the social sciences, including geography, Carl Sauer insisted that human-environment research required a normative, landscape perspective including fieldwork, which is now a critical part of Political Ecology. Finally, Julian Steward posed the idea that human interaction with nature influences how nature impacts social and cultural order. His students Mintz and Wolf went on to crystallize what became Political Ecology (Robbins 2005).

In the mid-twentieth century, common property theory, green materialism, peasant studies, feminism, critical environmental history, studies of power and the production of knowledge, and a transition to large global interactions between people and the environment (climate change, deforestation, conservation efforts, etc.) provided all of the tools needed for a true Political Ecology to solidify. Zimmerer (2010) conducted a retrospective on nature-society geography trajectories in the Annals of the Association of American Geographers, and found that Political Ecology became a mainstream category of social-nature geography in the 1990s and 2000s. Nature-society geography

became part of a "four-field geography" (along with human geography, physical geography, and GIScience/cartography) in 2001 (Zimmerer, 2010). In this new field, Piers Blaikie's work is often cited (e.g. Adams, 2001; Forsyth, 2008; Paulson, Gezon, & Watts, 2003; Walker, 2006) as foundational in the field, moving the discussion from Marxist to neo-Marxist, focusing on constructivist approach that engaged policy. Today's Political Ecologists, despite some criticism, are harnessing this constructivist approach to create new narratives that engage with politics and policy (Walker, 2006; Walker, 2007).

Four primary thesis in Political Ecology are degradation and marginalization, environmental conflict, conservation and control, and environmental identity and social movement (Robbins, 2004). Each of these focus on human-nature interactions (with humanity as part of nature), non-linear power dynamics, and the importance of scale in analysis. Rather than blaming land degradation on local people, it takes into account the broader regional and global political and economic context that shape these outcomes. Additionally, environmental conflicts are part of broader politics and power dynamics. Likewise, conservation efforts in the name of sustainability or preserving nature are a form of transnational enclosure that disembed and disempower local communities (Robbins, 2004). Finally, Political Ecology's focus on social movements shows that even disenfranchised communities wield power in a web of interactions, demonstrating complementarity in power dynamics (Robbins, 2004; Kull, 2002).

Political Ecology strives to put the "politics" and "policy" into the study of "ecology." Traditional human-environment studies focus on understanding phenomenon from a positivist or post-positivist perspective for the purpose of better management or control of nature (Castree, 2001). Even Resilience Theory, which is notable for its discussion of both scale and social-ecological systems, focuses more on physical phenomena and how they are influenced by human management systems than it does on the interactions of society and nature within a web of mutuality. A major problem is that these studies of human-environment interactions and social-ecological systems ignore that despite a stated political neutrality, their research questions, method formulations, and conclusions are all based on constructions of society and nature with built-in hegemonic concepts and political assertions.

Political ecology reverses this trend by placing the politics on the table- critically examining assumptions and constructs (Castree, 2000). Rather than asserting that there is a reality that can be known, Political Ecology's critical-constructivist approach recognizes that there are a plurality of realities, asserting instead that we should break down hegemonic and oppressive discourses and replacing them with new constructions (Forsyth, 2008). Critiques of Political Ecology further this idea that researchers in the field are compelled to be political activists and to interact with policymakers, and thus, it is critical that the field move away from critical (alone) research and towards constructivist research that generates co-created narratives written for non-academics in a language that they can understand (Walker, 2006; Walker, 2007).

This problem of critique without constructive action is the same problem faced by the pseudo-Political Ecologists in the transboundary water community. The next section explores confluences and departures between hydro-hegemony research and Political Ecology, and it suggests ways that I intend for my research to overcome problems in both fields.

Political Ecology in Transboundary Water

This section briefly explores the confluence between the hydro-hegemony research coming from the London Water Research Group (LWRG) with the field of political ecology. Particularly, I discuss two similarities: 1) both deal with power dynamics and discourse, and 2) both take a "web" perspective that rejects linearity and dualisms while affirming complementarity in multidirectional interactions within transboundary water interactions. However, there are also two notable differences I discuss: 1) hydro-hegemony theory does not adequately account for scale that includes the sub-national level, and 2) hydro-hegemony remains a critical rather than constructivist approach. Finally, I conclude with a brief discussion of how my research will help to close these gaps.

Upon first examination from a Political Ecological perspective, the hydro-hegemony research of the LWRG uses much of the same language as Political Ecology.[4] They reject dualisms, particularly targeting the work of Wolf, Yoffe, and Giordano on the Basins at

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[4] And is subject to the same criticism about using complex terminology unintelligible to the populations that need the information (Farnum, 2014; Walker, 2007).

Risk project for its conceptualization of conflict and cooperation as singular events on an either-or continuum rather than a blended scale of water interactions (like Mirumachi's TWINS matrix). Notably, they assert that the use of cooperation as the opposite of conflict gives it a normative value of "good" or "better" when in fact cooperative arrangements may be very negative or oppressive to various states (Hanasz, 2013; Warner & Zeitoun, 2008; Zeitoun, Mirumachi, & Warner, 2011). The LWRG proposes that power is exercised by hegemonic states in transboundary water interactions in order to pressure non-dominant states into cooperative arrangements that disproportionally advantage the hegemon (Zeitoun & Allen, 2008). These arrangements look like "cooperation" in the dualistic perspective of an agreement plus the absence of war, sanctions, or threats; however, it actually represents structural violence and oppression (e.g. Galtung, 1969). Non-hegemon states cope with the arrangement, sometimes through importing food ("virtual water") to take irrigation pressure off limited water resources. Zeitoun & Allen (2008) assert that "Ignoring the role of power in transboundary water management and allocation would be as irrational as ignoring the role of gravity or a river bed's friction coefficient while modelling sediment transport."

Additionally, discourse and constructed knowledge are major themes in the LWRG research. Zeitoun & Warner (2006) assert that "constructed knowledge is a chief determinant of who gets what water when and how"- invoking the classical definition of politics. They discuss ideational power- the power to shape perceptions and preferences in a way that makes the oppressed group internalize their situation and erase any potential grievances towards the hydro-hegemon (Zeitoun & Allen, 2008; Warner, Zeitoun, & Mirumachi, 2013). This is done through the skillful use of discourse and hegemonic terms like "water wars", IWRM, and cooperation, which have all taken on lives of their own as cultural touchstones (Trottier, 2014; Farnum, 2014). An example of this is declared cooperation between Israel and Palestine that was essentially the same oppressive relationship wrapped in a fancy-looking package with nice-sounding catchphrases (Selby, 2003; Selby, 2013).   The most recent work on hydro-hegemony discusses mechanisms of resistance/counter-hydrohegemony (coercive, leverage, and liberating) and mechanisms to produce compliance with the hydro-hegemon (coercive,

utilitarian, normative, and ideological), which furthers the notion that power is exercised through control of discourse (Zeitoun et al., 2014).

This last study also illustrates how the negotiation of power relationships (complementarity) are multidirectional; the oppressed are not simply at the bottom end of a linear hierarchy. Political Ecology rejects this kind of top-down, cause-effect style dualism to see society and nature as part of a web of interactions (e.g. Castree, 2000). Interestingly, web imagery is also employed in hydro-hegemony research to demonstrate the interconnections between water, climate, human, energy, food, and national security issues (Zeitoun, 2011). Rather than simply looking at effects of a policy on X (a state, a population, another dimension of security), both hydro-hegemony and Political Ecology look for interactions. For instance, Kull (2002) demonstrates that in the face of a criminalized policy against burning (a common method to maintain pastures and forests or to prepare fields for crops), locals in Madagascar found a plethora of ways to negotiate their situation- including "advantage-taking" (e.g. taking advantage of sympathetic politicians, festivals that got "out of hand", social reciprocity, etc.) to continue burning in spite of the policy. Women fieldworkers working for an NGO tasked with engaging women in a participatory research project (which they knew would be ignored by their male colleagues) subverted their roles by doing a poor job or by telling the participants that their inputs would be useless (O'Reilly, 2006). In hydro-hegemony, beyond resorting to virtual water, states use a variety of tactics to contest the hegemonic arrangement, from unilateral construction of water infrastructure (e.g. dams) to using the rules to their advantage (much like Kull's advantage-taking), to producing new constructions of how the basin should operate (which undermines the legitimacy of the existing structure) (Zeitoun et al., 2014).

Despite these similarities, there are two important differences between hydro-hegemony and Political Ecology. Both are discussed in Rebecca Farnum's (2014) critique of the LWRG. First, there is the problem of scale. While hydro-hegemony deals with the national, basin-wide, and international scales, it does not grapple with sub-national groups or communities and how they interact with international water institutions. Farnum (2014) says, "But if the Framework and LWRG are truly to push boundaries and consider alternatives, greater attention must be paid to non-state actors (groups,

populations, organisations, and individuals) at sub-state and transnational levels." Here, insights from Political Ecology could help the transboundary water field get past their tendency to ignore what happens below the level of the nation state. Second, hydro-hegemony research remains a critical approach that deconstructs and critiques the existing structure without offering constructive alternatives.[5] Farnum (2014) says "If academics do not purposefully engage with the voices of the marginalised, or if advocacy fails to do so, theory is yet another avenue through which the most vulnerable are made more vulnerable." She challenges the LWRG to critique their own position in creating and maintaining hegemonic concepts, to leave the Ivory Tower to interact with the populations they intend to help, to write accessibly, and to generate new constructions rather than stopping at the critique of the existing.

I conclude with just a brief statement of how I address some of Farnum's concerns through my research. First, my study includes multiple scales including the sub-national. I focus on the Mekong Basin, encompassing the local to basin-wide scale, as well as the regional and international context in which it exists. Second, I intend for the Integrated Basins at Risk (iBAR) tool to be a path towards a new construction (rather than simply a critique) that allows policymakers and practitioners to create new narratives that correct inequalities and injustices within the basin. Finally, I hope to transcend the difficulty both Political Ecology and hydro-hegemony face with language; I intend to produce accessible products and outputs of my research that are created and given back to the population in my case study basin.

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[5]See Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage. for conceptualizations of paradigms in qualitative research

Significance

In the Basins at Risk study, Wolf et al. (2003) determined that nearly two-thirds of interactions over water are cooperative. In addition, the vast majority of conflict events are mere verbal expressions of disapproval- not wars, not military spats, not even boycotts of meetings or unilateral construction of water projects. Yet, by 2011 measurements, 2.5 billion people- 35% of the global population- still lack access to adequate sanitation facilities, including 1 billion people who have no access to sanitation at all (WHO & UNICEF 2013). Two and a half times the population of the United States, 768 million people, still did not have access to an improved source of drinking water (WHO, 2013). Diarrheal diseases linked to contaminated drinking water kill more than 1.5 million children under the age of five each year, and in 2012, an estimated 627,000 people – 90% from Africa- died from Malaria (Black et al., 2010; WHO 2013). If water cooperation is the gold standard, and on the whole, water cooperation is happening, why do so many people lack access to basic water-related health and security? I refer to this rift between apparent cooperation and remaining human rights discrepancies as the 'cooperation gap.'

Figure 4. Photo. Villagers living outside Banlung, Cambodia bathe, wash clothes, and fill jugs of water from bamboo-tapped springs. Photo Source: Watson (2014).

Notably, the BAR scale does not capture human (nor environmental) suffering related to water beyond direct violence (e.g. military action); nor does it indicate whether positive outcomes (human rights, Millennium Development Goals) are achieved in line with cooperation. Furthermore, the BAR scale does not capture hydrohegemonic actions discussed by Warner & Zeitoun (2008) that lead to environmental injustices (some subpopulations suffering disproportionate costs or harm). In fact, what looks like cooperation on the outside may actually be a hydrohegemon repackaging domination and exploitation by controlling the discourse and vocabulary (Selby, 2003). In sum, the BAR study has made great advances towards our understanding of water and negative peace, but it does not (nor does it claim to) address positive peace.

Yet, to achieve true peace, we must address all forms of violence, pursuing both positive and negative peace. Gottlieb (1999; pp. 27-28) cites not just feminists and environmentalists, but Martin Luther King Jr. and Gandhi as all calling for us to challenge injustice as a fundamental, spiritual requirement. Gottlieb poses:

> "As King put it, we are bound up in an 'inescapable network of mutuality'; and thus our personal spiritual development leads us necessarily toward concern for others. If none of us can be truly free while others are enslaved, so none of us can be truly enlightened or at peace if the fate of others is absent from our awareness… All these perspectives advise us that if spiritual contentment is what we are after, we cannot achieve it by ignoring the injustice to which we, or others, are subject" (Gottlieb, 1999; p. 28).

At the same time, the research on hydrohegemony is largely critical rather than prescriptive. Critical research does a good job at challenging the privileges and patriarchal systems of the status quo, but generally prescribes the canonical complete systematic upheaval- the kind of suggestion that makes policymakers wince or roll their eyes- rather than providing practical solutions that bring together multiple perspectives for the greater common good. Thus, the Marxist and feminist scholars and social/environmental justice crusaders are likely the ones whose names will be left off the guest list, allowing the negative peace/securitized water discourse to continue to dominate.

This push and pull between the status quo and revolution, between incremental change and transformation, reveals a deep rift between political realism and social-

environmental idealism. This rift, another aspect of the 'cooperation gap', exists between those who see the world more dualistically in favor of practical action and those who draw attention to injustice but become paralyzed by the complexity involved in addressing those injustices at a global level. As is evident by the remaining water-linked poverty, suffering, and injustice around the world, it is ineffective for water professionals and academics to exist in separate spheres of pragmatists who buy into the dominant paradigm (be it patriarchy or hydrohegemony) in favor of some "progress" and whistleblowers who cannot propose tangible solutions.

Wolf's (2008) more recent work on water relates to "healing the enlightenment rift" and the notion that Westerners have separated spirituality from decision making to a fault, while most Eastern traditions take a more integrated, holistic view of natural resource decisions. He proposes closing this "rift", re-integrating spirituality as a dimension in water conflict transformation/negotiation processes (Wolf, 2008; pp. 55-62). Stone (2009; pp. 68-69) proposes, "We must look at the relationship between sustainability and idealistic ethical principles. They must bond. The necessities of nourishing our minds and bodies and living ethically must come together in a way that creates harmony and not discord" (Stone, 2009; pp. 68-69).

Thus, if both positive and negative peace are integral, and if we as water scholars and practitioners wish to achieve both, we must work to assess and understand both. Furthermore, we must work to further Galtung's charge to develop win-win solutions that unite positive and negative peace synergistically. I intend to help close the cooperation gap by both identifying ethical dilemmas embedded in structural violence and finding practical, institutional solutions that correct inequity and bring "true peace" (as Galtung would call it) to people living in river basins around the world.

Questions & Hypotheses

My review of the current state of literature surrounding water resources conflict and cooperation related to theories of peace and environmental justice led me to develop the following set of questions and hypotheses related to current gaps and incongruences in both the literature and practice:

What institutional factors are associated with positive or negative human needs impacts related to water?

I want to learn the mechanisms by which more attuned water resources policy and management can be employed to reduce human suffering and injustices and advance human rights. Essentially, I hope to discern leverage points to achieve water-related human rights (positive peace) goals. To this end, I propose that a more comprehensive definition of cooperation is needed- moving "beyond cooperation" to focus on water peace- which spans both negative and positive peace. As an exercise in Political Ecology (see Forsyth, 2008), a shift to a narrative of water peace represents a politicized construction that deconstructs the dominant conflict/cooperation narrative and draws attention to structural injustices (and opportunities to address those injustices) in transboundary water interactions.

1. Do negative peace (absence of violence) and positive peace (absence of structural violence) coexist or conflict?

As discussed above, Galtung (1969) poses that positive peace and negative peace do not have to be in competition with one another; they can coexist. I will test this hypothesis.

2. What is the role of institutions (such as laws and agreements) in promoting EJ related to water?

By exploring the role of institutions, I delve into the mechanisms by which environmental costs and benefits are distributed among basin stakeholders, illuminating the socio-political nature of environmental conflicts. Interestingly, the literature is mixed[6] on the role of institutions in transboundary water conflict and cooperation. Wolf, Yoffe, and Giordano (2003) found that institutional capacity was a key predictor of cooperation as defined by the BAR study (read: negative peace). However, Warner and Zeitoun (2008) Zeitoun and Allan (2008), Selby (2003), and others pose that institutions can make things worse from a positive peace perspective by codifying and validating structural injustices that lead to worse human rights outcomes for basin subpopulations.

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[6] This paradox in the literature surrounding the role of institutions represents the third rift that my research will address (the first two being the rift between cooperation and EJ and the rift between practicality and social idealism).

However, Farmer (2003) proposes that "structural interventions" are the solution to structural violence, suggesting that institutions can play a role in attaining positive peace as well as negative peace. Additionally, Altman (2007) clarifies that "Good structural interventions include legal and social regulations that take as their starting point improving the quality of life, health and citizenship for all… effective interventions uphold human rights." This supports my hypothesis that needs- affirming institutions are central to achieving positive peace. Thus, I hypothesize that institutions are key to closing the cooperation gap between positive and negative peace outcomes; if used holistically and purposefully, they can serve both goals.

3. Is there a relationship between stakeholder participation/collaboration and EJ outcomes?

Galtung (1969; 186) posited that participation and collaboration are paths towards achieving positive and negative peace. While many academics and practitioners alike value collaboration and meaningful participation, I have struggled to identify in the literature more than anecdotal evidence supporting collaboration as a "better" alternative to top-down decision-making. What does "better" even mean?

Sadoff et al. (2008; 74) assert that participation is critical not only to policy negotiation, but to the resulting management institutions:

> "As in negotiations, the nature of the institutions chosen to participate will have great influence on the nature of decisions and, just as important, on the topics addressed. Thus, as in negotiations, it is important that a broad range of interests, including government institutions and civil society organizations, have input not only on the solutions to problems but also on the very problems under consideration. Broad participation may be especially important in many developing country contexts where, at the local level, decisions on water and land resources are made through informal laws which may be overlooked in official channels."

I hypothesize that higher levels of meaningful participation (defined as both representative and empowering) in both water decisions and water institutions will be related to better justice outcomes, and lower levels of meaningful participation will be associated with poorer justice outcomes for sub-national communities. For the purposes of this study, I am not looking at relationship outcomes among participants

nor procedural outcomes; rather, I am focusing directly on substantive environmental justice outcomes related to level of participation.

Figure 5. Photo. A villager living outside Banlung, Cambodia fills a jug with water from bamboo-tapped spring filtered with a sponge. Photo Source: Watson (2014).

Objectives

The goals of this study are as follows:

1. Better understand how water relates to social/environmental justice
2. Develop a transferrable approach for assessing justice/injustice in transboundary basins
3. Glean insight on the role of institutions in securing justice and human needs
4. Glean insight on the role of participation in securing justice and human needs
5. Draw conclusions/recommendations to better achieve human needs

The first (#1) and last (#5) goals are the heart of the dissertation project: I wanted to better understand how water is connected to environmental justice (EJ) outcomes, and I wanted to develop practical tools and recommendations that might help water professionals and activists make the world a better place. These objectives relate to my central questions:

A. What institutional factors are associated with positive or negative human needs impacts related to water?

B. Do negative peace (absence of violence) and positive peace (absence of structural violence) coexist or conflict?

Additionally, these questions were addressed via objective #2. I developed the iBAR and tested it as a tool for assessing justice outcomes related to water. If it proved to be an insightful and user-friendly framework, it may be applied in other basins to expose and understand patterns of injustice. Thus, the iBAR not only helped me to understand environmental injustice to answer my questions; it also may be a tool that I recommend others use to assess and respond to injustice (objective #5, question A).

In order to answer question A and achieve objective #5, I needed to not only learn about injustice related to water, but also about the role of potential tools in addressing that injustice. Particularly, I was interested in how institutions (#3) and stakeholder participation (#4) affect environmental justice outcomes. These objectives link with the following research questions:

C. What is the role of institutions (such as laws and agreements) in promoting EJ related to water?

D. Is there a relationship between stakeholder participation/collaboration and EJ outcomes?

The following table (Table 2) explains briefly how each objective was addressed by the study. Each method will be discussed in more detail in the following chapter.

Table 2. Objectives and related procedure.

#	Objective	Procedure
#1	Better understand how water relates to social/environmental justice	The iBAR was applied to code archival/event data in the Mekong Basin from 1994-2014. This created a history of water-related justice/injustice in the basin. Analysis of temporal trends and relationships shed light on water-linked justice and positive/negative peace outcomes. Interviews of IGO/NGO leaders, conference, and panel notes enriched and added depth to the timeline data.
#2	Develop a transferrable approach for assessing justice/injustice in transboundary basins	Via triangulation of Mekong Basin iBAR data (archival, interviews, conference/panel notes), I will examine whether the picture painted by the iBAR tool is consistent or variable.
#3	Glean insight on the role of institutions in securing justice and human needs	I coded iBAR event data for institutional affiliation and compared institution-linked outcomes to non-institution-linked justice outcomes. Additionally, content analysis of interview, conference, and panel notes illuminated themes and processes by which institutions affect justice within the Mekong Basin.
#4	Glean insight on the role of participation in securing justice and human needs	I collected claims about participation from the archival (news articles) data with the intention of coding it and making comparisons, but found that there were not enough instances of participatory processes captured there to conduct semi-quantitative analysis. However, my interview/conference data proved a rich source of information about participatory processes- or lack thereof- and the barriers to participation in the basin. I used content analysis to generate themes on the role of participation.
#5	Draw conclusions/ recommendations to better achieve human needs	Based on my analysis and findings, I drew conclusions about environmental justice and water, facilitators and barriers to meeting water-related human needs, the potential utility of the iBAR tool, and the possible role of institutions and participatory designs in attaining justice outcomes.

Chapter3: Case Study

To carry out my research objectives, I opted for a case study approach. Case studies are ideal for exploring a topic in depth because they allow for a rich, qualitative description of the phenomena, particularly when those phenomena are difficult to quantify. Case studies also help the audience of a research project to connect more deeply with the topic, as examples and anecdotes facilitate visualization and understanding of what is being studied. However, this approach is very limited when it comes to generalizability; one cannot assume that because something happened one way in the case study, that same phenomena will occur elsewhere. Likewise, case studies are poor for establishing cause-effect relationships. Finally, case studies rely on the researcher's interpretations, which may not match those of other researchers or of the people living and working in the case study site. That being said, a case study method was the most fitting approach for exploring environmental justice impacts and testing out the Integrated Basins at Risk (iBAR) approach for the first time to see what insight it could provide about transboundary water interactions.

I chose the Mekong Basin as my case study. At 4,909 km, the Mekong River (Figure 7) is the tenth largest river in the world and the heart of Southeast Asia. The 795,000-km^2 basin is shared by six countries. Three provinces in southern China fall into the Upper Mekong Basin (called Lancang), while the Myanmar, Lao PDR, Thailand, Cambodia, and Vietnam comprise the Lower Mekong. The Greater Mekong Subregion is home to more than 240 million people, including 100 different ethnic groups, as well as tremendous natural resources and biodiversity (Santasombat, 2011; 1-2). The size, population, and ethnic diversity in the basin make it an ideal candidate for studying environmental justice and human rights, as water policy and management decisions have the capacity to distribute costs and benefits in ways that affect large numbers of people and which may have disparate consequences for different groups.

Figure 6. Photo. In the Mekong Delta, near Can Tho, Vietnam, locals and tourists alike peruse a floating market. Photo Source: Watson (2014).

A Brief History

In the mid-twentieth century, two sets of studies- one by the United Nations Economic Commission for Asia and the Far East (EAFE) and one by the U.S. Bureau of Reclamation- encouraged the Lower Mekong countries of Cambodia, Laos, Thailand, and Vietnam to unite in joint management of the Mekong water resources for hydropower and irrigation development potential. In 1957, the four countries formed the Committee for Coordination of Investigations of the Lower Mekong (commonly known as the Mekong Committee). Despite early successes, the Committee fizzled in the 1970s due to skepticism surrounding plans for massive mainstream dams, political tensions surrounding the Khmer Rouge in Cambodia, and disagreements about whether downstream countries should have the ability to veto projects with transboundary impacts (Wolf & Newton, 2009).

In the early 1990s, the region attained a level of political stability that allowed both the basin countries and the international community to refocus on the development

potential of the Mekong. In 1995, a new Mekong agreement (Cooperation for the Sustainable Development of the Mekong River Basin) that established the Mekong River Commission was adopted by the four downstream countries (Wolf & Newton, 2009).

The upstream countries, China and Myanmar, did not join the agreement, but maintain observer status in the Commission. China proceeded unilaterally with a series of large dams in its portion of the basin, where the Mekong is called the Lancang. This development drew concern from downstream neighbors who- without China signing onto the Mekong agreement- have no avenue to compel China to halt construction or address downstream impacts (which China insists are nonexistent).

Beyond Chinese needs for energy, Thailand is driving the demand for additional energy sources, inciting hydropower development in neighboring countries. Hydropower development occurs in Thailand as well, but with a stronger civil society and a bad track record with the Pak Moon Dam (considered to be a disaster), there is a Not In My Back Yard (NIMBY) attitude that pushes large scale hydropower outside of Thai borders, particularly into Laos. At the same time, critics point to oft overforecasted Thai energy demand and suggest that Egat (the Electricity Generating Authority of Thailand) estimations are a bad basis for large projects with potentially grave consequences downstream (J. Watson, personal interviews, 2014).

The Water-Food-Energy-Environment Nexus & Mekong Politics

In the Mekong, the water-food-energy-environment nexus is prominent and acutely relevant to basin populations' livelihoods and very survival. The ecological integrity of the system is closely tied to the food security of over 60 million basin residents, and ecological services like sediment transport are key to food production in the Delta. Yet, Mekong countries are proceeding with vast growth in hydropower development, with 11 potential mainstream dams and dozens of tributary dams planned for completion by 2030 (Orr, Pittock, Chapagain, & Dumaresq, 2012). Particularly, Laos has ambitions to become the "Battery of Southeast Asia" by maximizing its hydropower potential. In 2010, Laos moved forward with the first mainstem dam on the Lower Mekong-Xayaburi. Since then, Laos has also begun construction on a second mainstem dam at

Don Sahong, though it argued that the many channels in the 4,000 Islands region technically excepted this dam from mainstem status.

Hydropower development decisions are a key leverage point that will determine an array of tradeoffs within the nexus. Losses in fisheries from mainstem dams will require significant land-use change and increased water use to replace lost protein sources, and dozens of planned tributary dams will greatly exacerbate these changes. Likely, the protein losses could not be adequately replaced in-basin, and countries like Cambodia and Vietnam would need to turn to virtual water- food imports- to meet the nutritional needs of the population (Orr et al., 2012).

Beyond the high costs of Xayaburi on the environment and food security, there are potentially few gains. Xayaburi is being constructed near a geological fault line where there was a 4.7-magnitude earthquake in early 2011 and a 6.1-magnitude earthquake in 2007 (The Nation, 2011). Furthermore, sedimentation build-up behind the dam is expected to diminish Xayaburi's capacity to produce electricity by 60% within 30 years (Fuller, 2011). The fact that Mekong developers are pushing ahead with hydropower development without full consideration of system-level, long-term impacts shows a gap in institutional capacity to address nexus-level conflicts.

This failure of nexus-level planning highlights a problem in the Mekong where the right hand does not know what the left hand is doing. Cambodian and Vietnamese government-paid scientists do research showing severe impacts of hydropower on ecosystems and food security, and their government representatives oppose Xayaburi yet continue to sponsor hydropower development in tributaries that could have even greater negative impacts on food security (J. Watson personal interviews, April 2014). For instance, the construction of the Lower Se San 2 dam could lead to a 9.3% basin-wide drop in fish biomass (Ziv, Baran, Nam, Rodriques-Iturbe, & Levin, 2012).

Furthermore, there are discrepancies between sectors. The Thai government may support the protestors decrying the negative impacts of Xayaburi, but Thai banks and developers are behind the project, and Thailand that will receive the majority of the energy benefits from the dam. In 2014, a network of Thai citizen groups filed a lawsuit challenging the legality of the Xayaburi power purchase agreement, claiming that Egat (the Electricity Generating Authority of Thailand) did not significantly account for

impacts of the Lao dam on Thai communities (The Nation, 2014), and these groups have also publically called on Thai banks (Siam Commercial, Krung Thai, Kasikorn, Bangkok Bank) to withdraw their financing of the project (Ganjanakhundee, 2012). This illustrates a nuanced water conflict that involves divergence between branches of government, sectors, and civic groups both within and beyond boundaries, rather than uniform conflict between riparian countries.

Finally, though the MRC requires prior consultation before dam construction, the MRC itself has no authority to police the governments or issue penalties when governments fail to comply (Herbertson, 2013). Yet, the Lao government argues that the Xayaburi Dam fully complies with the Mekong Agreement's requirements. This has created a storm of criticism against the MRC, particularly from environmental NGOs and civil society groups who call the Secretariat ineffective and illegitimate if it cannot enforce the agreement or stop construction of the dam.

There may not be physical violence or hostility in the wake of the dam construction; yet, social and environmental injustices (structural violence) may have grave consequences at the inter- and intra-state levels. Thus, the Mekong is a case where institutional capacity is present, but perhaps not strong enough to resolve nexus, inter-scale conflicts over hydropower with social and environmental justice implications, suggesting that a traditional agreement or River Basin Organization is not a silver bullet solution to environmental justice issues related to modern water conflicts.

Environmental Justice in the Mekong

There is evidence that disparities exist in the Mekong Basin. Around 24.53 million people (72% of the population) in the Mekong Basin do not have access to either safe drinking water and/or UN-defined adequate sanitation (UN Habitat, 2009). Large scale development of the Mekong for hydropower has left poor and marginal communities-those who depend most critically on the Mekong for their subsistence and livelihoods-out of decisions and struggling to cope with massive ecological and economic changes, leading to increasing poverty and income inequality (Santasombat, 2011; 2).

Santasombat (2011; 6-10) describes "transnational enclosure" as the influence of globalization leading to more centralized planning and decision-making. This shift from

traditional, local management to centralized planning dis-embeds the Mekong's resources from the people who have managed and relied on the resources for generations and instead frames them as exploitable resources to fit national or international development goals. Referring to the boom of hydropower dam projects in the Mekong over the past decade, Santasombat (2011; 28) asserts:

> "…the Mekong has increasingly been disembedded from local fabrics of self-reliance and transformed into an exploitable economic resource for national and transnational production and development. Various countries have given a pre-eminent role to hydropower and irrigation projects… The absence of established public participation processes in the riparian countries also means that there is no level at which the public can effectively influence the planning, construction, or operation of most projects."

While enclosure is done in the name of progress and development, the costs and benefits of the projects are distributed in a way that leaves many riverine peoples and the ecosystems that they rely on worse off. Essentially, this economic growth and development-oriented paradigm has created a hydrohegemonic discourse in which the interests of those in power are pursued while the rural populations are objectified, controlled, and treated as cogs (laborers or pawns to be moved out of the way) in the grand scheme (Santasombat, 2011; 35-37). In sum, the interplay between decisions, institutions, and environmental justice outcomes are complicated in the Mekong, making it an ideal case study ripe for investigation.

Figure 7. Map of the Mekong Basin. Source: Greater Mekong Subregion Atlas of the Environment, 2nd Edition (2012).

In sum, the Mekong River is a large transboundary river that affects the lives of millions of people. It is at the crux of balancing globalization and economic development with culture and environment, and the basin populations' basic needs are caught in the crossfire. Studying this basin sheds light on how various institutional factors influence human rights outcomes, and in turn, how decision-makers can craft more just policies.

Chapter 4: Methodological Underpinnings (Framework)

Positive Water Governance (positive peace): iBAR

My research bridges the gap between the applied/practical research and the critical research. It increases our combined understanding of environmental justice in transboundary water management, and significantly, it works to identify strategies to close the gap between practicality and social idealism on the ground. Through this dissertation, I integrate justice and human rights measurement criteria into a complimentary BAR scale that can be used in transboundary basins on a variety of data sources (allowing for triangulation), including: news media, transboundary water agreements (not included in this study, but suggested for future research), and interviews/focus group workshops. This scale bridges the rift between the positive and negative peace camps via an integrated methodology.

I developed a modified, "integrated Basins at Risk" (iBAR) scale that addresses the full range of violence via a holistic/needs approach. The iBAR scale follow the general structure of the BAR scale (negative and positive ratings), but rather than escalating or de-escalating direct violence, this scale is based on the idea of human needs drawn from Maslow's (1987)Hierarchy of Needs, Eastern spiritual conceptualizations of chakras, the needs proposed by Galtung (1990; p.292), and the Universal Declaration of Human Rights. All of these needs share striking similarities, but take Galtung for example:

> "The four classes of basic needs… are: survival needs (negation: death, mortality); well-being needs (negation: misery, morbidity); identity, meaning needs (negation: alienation); and freedom needs (negation: repression). The result is eight types of violence with some subtypes, easily identified for direct violence but more complex for structural violence (see Table [3])... A fifth column could be added at the beginning for the rest of Nature… If this is not satisfied, the result is ecological degradation, breakdown, imbalance. Eco-balance corresponds to survival + well-being + freedom + identity for human basic maintenance. If not satisfied, the result is human degradation. The sum of all five, for all, will define 'peace' "(Galtung, 1990; p.292).

Table 3. Galtung's Typology of Violence. Exploitation A refers to dying (starving, disease) based on unequal exchange, while Exploitation B refers to misery (caused by chronic malnutrition, waterborne disease, etc.). Source: Galtung (1990).

	Survival Needs	Well-being Needs	Identity Needs	Freedom Needs
Direct Violence	Killing	Maiming Siege, Sanctions Misery	Desocialization Resocialization Secondary Citizen	Repression Detention Expulsion
Structural Violence	Exploitation A	Exploitation B	Penetration Segmentation	Marginalization Fragmentation

As you can see below (Figure 8), Maslow's hierarchy of needs follows a similar structure that ranges from basic survival and well-being needs to identity and spiritual needs. Maslow (1943, 1954) expanded his hierarchy to include cognitive and aesthetic needs (1970a) and transcendence needs (1970b), and this adapted hierarchy is the primary source of the iBAR scale. To show the congruence between highly diverse sources, I created a table (Table 4) comparing psychology (Maslow), Maslow applied to water (as interpreted by Wolf 2010), the chakras (from Hindu and other Eastern spiritual traditions), peace studies (Galtung), anthropology (Kellert, 2005), and the Universal Declaration of Human Rights (1948).
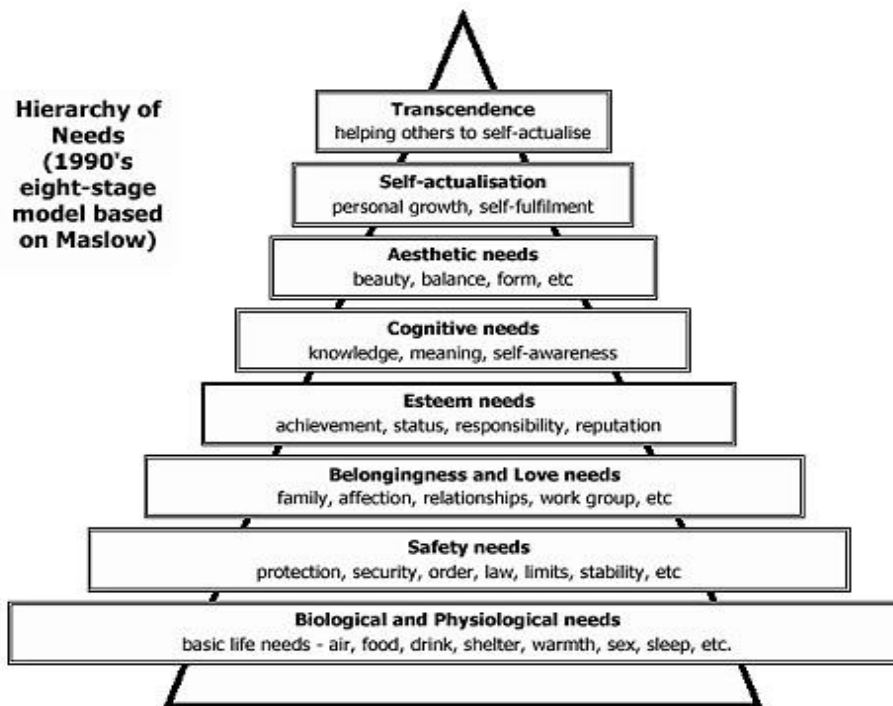
Figure 8. Maslow's Hierarchy of Needs. Source: Chapman (2001

Table 4. Chart comparing Maslow's Hierarchy of Needs to chakras, human rights, and other theories of human needs.

	Maslow (1943, 1954, 1970a, 1970b)	Wolf (2010) - (Maslow interpreted / applied to water)	Chakras	Galtung (1990)	Kellert (2005)	Universal Declaration of Human Rights (1948)
1	Transcendence needs: helping others to achieve self-actualization.		Crown: Knowingness, Wisdom, Inspiration, Charisma, Awareness, Higher Self, Meditation, Self Sacrificing, Visionary		Moralistic: Strong affinity, spiritual reverence, ethical concern for nature- Function: Order and meaning in life, kinship and affiliational ties	
						Art. 18: Everyone has the right to freedom of thought, conscience and religion… and freedom, either alone or in community… to manifest his religion or belief in teaching, practice, worship and observance.
2	Self-Actualization needs: realizing personal potential, self-fulfillment, seeking personal growth and peak experiences.	Self-actualization – water is used in most spiritual traditions as a purifier	Brow: Intuition, Invention, Psychic Abilities, Self Realization, Perception, Release, Understanding, Memory, Fearlessness		Aesthetic: Physical appeal and beauty of nature- Function: Inspiration, harmony, peace, security	Art. 24: Everyone has the right to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay.

	Maslow (1943, 1954, 1970a, 1970b)	Wolf (2010) - (Maslow interpreted /applied to water)	Chakras	Galtung (1990)	Kellert (2005)	Universal Declaration of Human Rights (1948)
3	Aesthetic needs: appreciation and search for beauty, balance, form, etc.		Throat: Communication, Wisdom, Speech, Trust, Creative Expression, Planning, Spatial, Organization, Caution		Symbolic: Use of nature for metaphorical expression, language, expressive thought-Function: Communication, mental development	Art. 27 (1): Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.
4	Cognitive needs: knowledge, meaning, self-awareness		Heart: Relationships, Love, Acceptance, Self-Control, Compassion, Guilt, Forgiveness, Harmony, Peace, Renewal, Growth		Ecologistic-Scientific: systematic study of structure, function, and relationship in nature-Function: Knowledge, understanding, observational skills	Art. 27 (1): Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.
					Naturalistic: satisfaction from direct experience/contact with nature-Function: Curiosity, outdoor skills, mental/phys. development	

	Maslow (1943, 1954, 1970a, 1970b)	Wolf (2010) - (Maslow interpreted /applied to water)	Chakras	Galtung (1990)	Kellert (2005)	Universal Declaration of Human Rights (1948)
5	Esteem needs (internal): self-esteem, achievement, mastery, independence,		Solar Plexus: Personal Power, Will, Knowledge, Wit, Laughter, Mental Clarity, Humor, Optimism, Self-Control, Curiosity, Awareness	Freedom Needs: Repression, detention, expulsion (direct), marginalization (keeping the underdogs on the outside), fragmentation (keeping the underdogs away from each other) (structural)		Art. 23 (3): Everyone who works has the right to just and favorable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection.
6	Esteem needs (external)[7]: status, dominance, prestige, etc.	Esteem – fountains, pools, green lawns			Dominionistic: mastery, physical control, dominance of nature- Function: Mechanical skills, physical prowess, ability to subdue	
7	Social Needs - Belongingness and Love, - work group, family, affection, relationships, etc.	Belongingness and love (best to leave this one to the participants' imaginations)	Sacral: Feelings, Emotions, Intimacy, Procreation, Polarity, Sensuality, Confidence, Sociability, Freedom, Movement	Identity Needs: Desocialization, resocialization (direct), secondary citizen penetration (implanting the top dog inside the underdog), segmentation (giving the underdog only a partial view of what goes on) (structural)	Humanistic: strong affection, emotional attachment, love for nature- Function: Group bounding, sharing, cooperation, companionship	Art. 22: Everyone, as a member of society, has the right to social security and is entitled to realization… of the economic, social and cultural rights indispensable for his dignity and the free development of his personality.

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[7] Maslow proposed that esteem could be divided into lower (labeled "external") and higher (labeled "internal") categories based on whether the esteem comes from outside (respect, status, etc.) or within (independence, mastery, etc.).

	Maslow (1943, 1954, 1970a, 1970b)	Wolf (2010) - (Maslow interpreted /applied to water)	Chakras	Galtung (1990)	Kellert (2005)	Universal Declaration of Human Rights (1948)
8	Safety needs - protection from elements, security, order, law, limits, stability, etc.	Safety needs – fire prevention, moats, national boundaries		Well-being Needs: maiming, siege, sanctions, misery (direct), suffering via chronic malnutrition, waterborne disease, etc. (structural)	Negativistic: fear, aversion, alienation from nature- Function: security, protection, safety	Art. 25 (1): Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment… or other lack of livelihood in circumstances beyond his control.
9	Biological and Physiological needs - air, food, drink, shelter, warmth, sex, sleep, etc.	Physiological needs – e.g., drinking water, irrigated basic foods	Root: Survival, Vitality, Reality, Grounding, Security, Support, Stability, Sexuality, Individuality, Courage, Impulsiveness	Survival Needs: Killing (direct), dying from starvation or disease (structural)	Utilitarian: practical and material exploitation of nature- Function: physical sustenance/se curity	Art. 3: Everyone has the right to life, liberty and security of person

Notice on the far-left column of Table 4, I numbered each of the levels from one to nine. This division serves as the basis for my typology, with negative values representing denial/blocking access to a given value and positive values representing the affirmation/securing of that value. Like the BAR scale, the most severe values lay at the far ends of the scale (e.g. survival is ± 9), representing the most basic needs, while higher level needs have lower number values (e.g. aesthetic needs at ± 3). This is not to say that aesthetic needs are more important per se than recreational or spiritual needs; many may argue differently. Rather, this simply serves as a simple, qualitative,

categorical structure falling between nominal and ordinal that is easy to compare to both Maslow's hierarchy and the original BAR scale.

For comparison, below is the typology used in the original BAR study, which ranges from -7 (formal war) to +7 (unification into one political unit):

Table 5. Basins at Risk scale and descriptions. Source: Wolf, Yoffe, & Giordano (2003); Yoffe (2002).

Rating	BAR	Description
-7	Formal War	Formal declaration of war
-6	Extensive military acts	Acts causing deaths, dislocation, or high strategic cost: use of nuclear weapons, full scale air, naval, or land battles; invasion of territory; occupation of territory; massive bombing of civilian areas; capturing of soldiers in battle; large scale bombing of military installations; chemical or biological warfare
-5	Small-scale military acts	Limited air, sea, or border skirmishes; border police acts; annexing territory already occupied; seizing material of target country; imposing blockades; assassinating leaders of target country; material support of subversive activities against target country
-4	Political/military hostile acts	Inciting riots or rebellions (training or financial aid for rebellions); encouraging guerilla activities against target country; limited and sporadic terrorist actions; kidnapping or torturing foreign citizens or prisoners of war; giving sanctuary to terrorists; breaking diplomatic relations; attacking diplomats or embassies; expelling military advisors; executing alleged spies; nationalizing companies without compensation
-3	Diplomatic/economic hostile acts	Increasing troop mobilization; boycotts; imposing economic sanctions; hindering movement on land, waterways, or in the air; embargoing goods; refusing mutual trade rights; closing borders and blocking free communication; manipulating trade or currency to cause economic problems; halting aid; granting sanctuary to opposition leaders; mobilizing hostile demonstrations against target country; refusing to support foreign military allies; recalling ambassador for emergency consultations regarding target country; refusing visas to other nationals or restricting movement in country; expelling or arresting nationals or press; spying on foreign government officials; terminating major agreements. *Unilateral construction of water projects against another country's protests; reducing flow of water to another country, abrogation of a water agreement*
-2	Strong/official verbal hostility	Strong verbal expressions displaying hostility in interaction: Warning retaliation for acts; making threatening demands and accusations; condemning strongly specific actions or policies; denouncing leaders, system, or ideology; postponing heads of state visits; refusing participation in meetings or summits; leveling strong propaganda attacks; denying support; blocking or vetoing policy or proposals in the UN or other international bodies. *Official interactions only.*

-1	Mild/unofficial verbal hostility	Mild verbal expressions displaying discord in interaction: Low key objection to policies or behavior, communicating dissatisfaction through third party; failing to reach an agreement; refusing protest note; denying accusations; objecting to explanation of goals, position, etc.; requesting change in policy. *Both unofficial and official, including diplomatic notes of protest.*
0	Neutral, non-significant	Rhetorical policy statements; non-consequential news items; non-governmental visitors; indifference statements; compensating for nationalized enterprises or private property; no comment statements
1	Mild verbal support	Minor official exchanges, talks, or policy expressions: Meeting of high officials; conferring on problems of mutual interest; visit by lower officials for talks; issuing joint communiqués; appointing ambassadors; announcing cease-fires; non-governmental exchanges; proposing talks; public non-governmental support of regime; exchanging prisoners of war; requesting support for policy; stating or explaining policy.
2	Official verbal support	Official verbal support of goals, values, or regime: official support of policy; raising legislation to embassy; reaffirming friendship; asking for help against a third party; apologizing for unfavorable actions or statements; allowing entry of press correspondents; thanking or asking for aid; resuming broken diplomatic or other relations.
3	Cultural, scientific agreement/support	(non-strategic): Starting diplomatic relations; establishing technological or scientific communication; proposing or offering economic or military aid; recognizing government; visit by head of state; opening borders; conducting or enacting friendship agreements; conducting cultural or academic agreements or exchanges. *Agreements to set up cooperative working groups.*
4	Non-military, economic, technical, or industrial agreement	Making economic loans, grants; agreeing to economic pacts; giving industrial, cultural, or educational assistance; conducting trade agreements or granting most favored nation status; establishing common transportation or communication networks; selling industrial-technological surplus supplies; providing technical expertise; ceasing economic restrictions; repaying debts; selling non-military goods; giving disaster relief. *Legal, cooperative actions between nations that are not treaties; cooperative projects for watershed management, irrigation, poverty-alleviation.*
5	Military, economic, or strategic support	Selling nuclear power plants or materials; providing air, naval, or land facilities for bases; giving technical or advisory military assistance; granting military aid; sharing highly advanced technology; intervening with military support at request of government; concluding military agreements; training military personnel; joint programs and plans to initiate and pursue disarmament.
6	International water treaty	Major strategic alliance (regional or international): Fighting a war jointly; establishing a joint military command or alliance; conduction joint military maneuvers; establishing economic common market; joining or organizing international alliances; establishing joint programs to raise the global quality of life. *International freshwater treaty.*
7	Unification into one nation	Merging voluntarily into one state; forming one nation with one legally binding government.

The iBAR scale, below (Table 6), demonstrates a very similar structure as the BAR scale (Table 4), but the content of the iBAR scale is based on the human needs/rights typology from Table 3. I color coded Table 6 to mirror the chakra colors used in Table 4. As you can see, the iBAR scale combines the reproducible, codified methodology of negative peace research with the concepts from positive peace research. The specific methodology and applications of the iBAR scale will be addressed in the methods section below.

Table 6. Integrated Basins at Risk (iBAR) scale. The iBAR category shows the type of needs, and the two left-most columns represent the code for that need. Positive values mean a water decision/activity affirms someone's ability to meet that need, while negative values denote that a water decision/activity is projected/stated as deterring or harming someone's ability to meet the need.

Block/deter	Affirm/secure	iBAR	Description
-9	+9	Survival	Drinking water, subsistence agriculture irrigation, food security
-8	+8	Safety/Security Needs	Water for health and well-being (WaSH, waterborne disease), boundaries, water-related disaster protection (e.g. drought, monsoon), stability, basic economic security (including existing economic functions, poverty alleviation)
-7	+7	Social Needs	Water facilitated gatherings, family/community traditions, culture, water facilitated relationships (e.g. between countries, communities)
-6	+6	Esteem Needs (external)	Development, economic growth, status symbols (dams, fountains, pools, lawns, showy projects) - high level
-5	+5	Esteem Needs (internal)	Trade/craft mastery, independence, sovereignty
-4	+4	Cognitive/knowledge/understanding/science Needs	Data, access to science & knowledge about the water source, monitoring, water technology
-3	+3	Aesthetic Needs	Beauty in nature, recreation, ecotourism
-2	+2	Spiritual Needs	Spiritual practices/rituals, seeking growth and fulfillment
-1	+1	Transcendent Needs	Needs beyond human (e.g. intrinsic value of nature)

Hybrid Qualitative/Quantitative Methods

Qualitative and quantitative approaches have both been used throughout the history of Geography, to varying degrees. Geography is the 'description of the earth,' but its role as a qualitative, descriptive study (i.e. regional geography) has left the discipline scrutinized, undervalued, and even rejected (e.g. the elimination of the Geography program at Harvard in 1948) because it did not conform to what positivist

and post-positivists like to think of as "hard" science (Smith, 1987; Guba & Lincoln, 1994). This led to an internal policing, with Geographers criticizing one another and demanding more systematic work aimed at identifying laws (e.g. positivism) in the field (Schaefer, 1953). When cultural geographers like Sauer insisted on a landscape level approach involving field work (a return to regional geography), geographers like David Stoddart (1986) pushed back saying geographers needed to "reclaim the high ground" to study the "big questions" of environmental problems and how to solve them (Castree, 2001).

While there is certainly a place for quantitative, positivist/post-positivist study, it is a fallacy to believe that just because a study is quantitative, it must also be "neutral" or somehow more valid than qualitative studies. First, Castree asserts:

> "Stoddart's brand of 'human-environment relations' geography- far from being objective and neutral- is intellectually limited and politically biased. It's intellectually limited… because it equates nature with 'environmental problems', so ignoring other important human–environment relations (like commercial agriculture or forestry) and non-environmental natures (like the human body). And it's politically biased, so several critical geographers claim, because the knowledge it produces tends to be 'technocratic'" (Castree, 2001).

Many qualitative researchers, particularly in Political Ecology, agree with this notion that quantitative, positivist science is not value free; rather, researchers speak from an embodied, positioned perspective that embeds their own cultural beliefs and understandings into the very fabric of their "hard" qualitative studies (Castree, 2001; Schmidt, 2013; Deitrich, 2011). Furthermore, Guba and Lincoln identify several problems with a quantitative approach:

- It excludes the meaning and purpose of human behavior. It describes what and how but not why.
- There is a disjunction between grand theories with local contexts. Quantitative data only deals with the mainstream and ignores uniqueness and fringe groups and activities.
- General data is inapplicable to individual cases. There is a limitation to the generalizability of quantitative data beyond giving a probability statement.

- Quantitative inquiries exclude the discovery dimension. Hypotheses already formed (where the hypothesis comes from is glossed over) are applied to data rather than letting constructions emerge from the discovery process (Guba & Lincoln, 1994).

While quantitative approaches are used in positivist and post-positivist studies, critical and constructivist studies necessitate qualitative information. Critical research studies historical realism, a virtual reality that is shaped by the social-political and economic context. It requires one to examine the dialogue. Constructivist research takes this one step farther by noting that constructs of reality are relative, and its goal is to construct new narratives to correct inequalities. The positivist and post-positivists are "disinterested scientists" who want to inform policymakers from a neutral perspective (which we have already discussed as a fallacy). Critical theorists are "transformative intellectuals" and advocates who challenge our preexisting notions. Constructivists are "passionate participants" who facilitate multi-voice reconstructions (Guba & Lincoln, 1994).

While the transboundary water community at OSU generally takes a post-positivist approach (e.g. disproving assumptions about the pervasiveness and inevitability of water wars using quantitative methods), the London Water Resources Group takes the critical theory approach towards examining transboundary water interactions. While both of these schools of thought are intellectually interesting and useful in their own ways, a constructivist approach better captures the full spectrum of environmental justice issues in water politics. Even numbers, statistics, and terms like "water wars" are constructions that stakeholders use to navigate power relationships and achieve their goals (e.g. Trottier, 2014).

As such, attempting to "bridge" the OSU (Wolf et al.) and LWRG methods would leave my dissertation stuck between two theoretical approaches, trying to hammer a quantitative peg into a qualitative hole. Rather than bridging the methods, I attempted to reconcile them by transcending them, applying constructivist approaches and utilizing semi-quantitative iBAR data not as the ends but as one means towards a larger qualitative, constructivist analysis.

Beyond environmental justice issues related to water, I attempted to challenge the academic status quo through my work. Farnum (2014) points out several traps in academia, including the use of jargon and the creation of hegemonic concepts that- because they are published by established researchers- limit the field of other equally legitimate ways of conceptualizing a problem. She also discusses the self-referential trap, by which researchers establish their careers on referring to their past work and the work of their friends, and collaborating only with people who share same training and ideas (Farnum, 2014). This creates a system that resists change and clings to established ways of thinking. Thus, academia poses patriarchal barriers to entry for new scholars, particularly women and historically marginalized groups. It also maintains an atmosphere wherein quantitative, "hard" post-positivist science is still viewed as a dualistic -and superior- alternative to qualitative and "soft" social sciences. Even purporting to work on social justice issues is enough for the academy to not take a researcher seriously, judging his or her work as insufficiently complex and rigorous (Pimpare 2012). These enlightenment rift attitudes limit academia's creativity and its potential to solve the world's problems.

Four Arrows (Don Trent Jacobs) compiled the 2008 book on the topic of transcending the rigid academic paradigm: *The authentic dissertation: Alternative ways of knowing, research, and representation.* He tells the story of many different dissertations with common themes surrounding authenticity, and he posits that "alternative" dissertations are just as rigorous as "traditional" ones, only less stifled. Furthermore, he recognizes the spiritual nature of the dissertation process, claiming that:

> "[Authentic dissertations] tap into more diverse perspectives, more authentic experience and reflection, and more creative abilities. They are, in essence, spiritual undertakings that:
> - honor the centrality of the researcher's voice, experience, creativity, and authority,
> - focus more on important questions than on research methodologies per se,
> - reveal virtues (generosity, patience, courage, respect, humility, fortitude, etc.),
> - regard the people's version of reality" (Jacobs, 2008; p. i)

Inspired by Four Arrows' mission "not to replace the historical values of academic research in the Western tradition, but to challenge some of those values and offer alternative ideas that stem from different, sometimes opposing, values," I incorporated authenticity into my dissertation process (Jacobs, 2008; p. i). I attempted to produce an "authentic dissertation" that values the participants and recipients of my research beyond their value to my research design. Traveling and talking people living in the Mekong Basin gave me the opportunity to employ authentic dissertation techniques such as experiencing and photographing life in the basin. Through the Integrated Basins at Risk (iBAR) approach, I embraced complexity and diverse ways of knowing. Particularly, the iBAR approach accepts claims about experienced and potential benefits and harms; it does not demand proof quantifiable in scientific or monetary terms. This allows for qualitative spiritual and cultural benefits and harms to be discussed alongside more quantifiable needs and values. I hope that I have amplified the voices of my participants and the basin stakeholders rather than speaking for them.

Also important to the authenticity of my dissertation is presenting my findings accessibly so that my work will reach a broader audience and challenge the status quo. Rather than putting my dissertation on a shelf in the halls of academia and leaving it there, I share it via dynamic, accessible forms of presentation. I produced a water justice/ethics training exercise to be used in schools or water practitioner trainings. I will publish a summary of my results online, and work with basin practitioners to publish relevant results in reports that can be translated into basin languages. An authentic, constructivist approach that includes deliverables will allow me to contribute outputs valuable to the groups I am studying and the larger transboundary water community. While web materials, photos, and exercises may not be direct elements of my analysis, they will help me to present and convey a richer tapestry of how water and water-related human needs manifest in people's everyday lives.

Chapter 5: Methods

Figure 9. Photo. A monkey eats an ear of corn in front of Cambodia's Angkor Wat. Photo Source: Watson (2014).

Application

In order to address my research questions and objectives via assessment of environmental justice (EJ) in the Mekong Basin, I developed a three-pronged strategy incorporating archival/event data, interview data, and observational data from a Mekong River Commission academic conference and a non-governmental organization (NGO) panel event. I developed a scale- the iBAR- which will serve as the guiding framework in each of the three prongs. The Basins at Risk (BAR) study, which measured events from 1948 to 2003, is the model on which the iBAR and archival methods are based. However, whereas the BAR study measured direct violence as quantifiable events (shots fired, official statements, wars, treaties, etc.), measuring structural violence/injustice presents unique challenges. Specifically, the literature on structural violence (injustice) suggests that it may not appear as a specific event (rather, an ongoing process), and furthermore, may be internalized by the oppressed population or

suppressed, downplayed, or blamed on either the victims or external factors in news media (Galtung, 1990; Zeitoun & Warner, 2006; Warner & Zeitoun, 2008). As such, this study expands the event-based BAR method multi-faceted approach that allows for internal consistency checks.

The second difference between the BAR study and this dissertation is that of scale. Ideally, the iBAR will be a tool that can be applied to transboundary river basins around the world, like the BAR scale, but this study serves only as a first step towards that goal. I tested the iBAR scale, and by using a triangulated approach, I was able to draw conclusions as to the validity and reliability of the iBAR and the strengths and limitations of each prong (archival, interview, observational). Considering that this study in part serves as a pilot for the iBAR, I focused on one basin- the Mekong River- at the basin as well as sub-basin levels, rather than trying to assess all transboundary basins in the world.

Third, this study differs from the BAR study because of its emphasis on justice and participation, which require additional data to be collected along with the primary iBAR data. Particularly, I will keep track of demographic data, which will shed light on which population groups benefit and which are hindered by water management decisions. For instance, one group may be displaced by a hydropower project, negatively affecting their basic economic security (-8 on the iBAR scale), while another population group may be provided with economic growth benefits (external esteem, iBAR +6) from the same policy decision. Keeping track of whose needs are being met and whose are not is critical to understanding the environmental justice applications of water management decisions.

Additionally, I noted the level of participation various stakeholder groups had in water-related decisions. Keeping track of information about participation helped me to test my hypothesis that meaningful, representative participation would be related with more just (higher iBAR) outcomes.

In the next section, I describe my methods for each the archival, interview, and observational prongs of the study. Finally, I discuss how I plan to analyze the data collected through each of the three-prongs.

Archival Data/Events Methods

Comparable to the BAR study, I examined news articles over time to create a timeline and assessment of environmental justice issues in the Mekong Basin. Specifically, I used LexisNexis Academic to search for water-related news articles in the Mekong Basin between 1994 and 2014. I used the following search terms for my initial search:[8]

Terms: ((HLEAD(Mekong OR Lancang *OR "Nam Ta" "Nam Ou" OR "Nam Soung" OR "Nam Khan" OR "Nam Mae Kok" OR "Nam Mae Ing" OR Songkhram OR "Nam Ca Dinh" OR "Se Bang Fai" OR "Se Bang Hiang" OR "Tonle Sap" OR "Se Kong" OR "Se San" OR "Sre Pok" OR Bassac OR "Nine Dragons")*

AND HLEAD(water OR river! OR lake OR dam OR stream OR tributary OR diversion OR irrigation OR pollution OR water quality OR flood! OR drought! OR channel OR canal OR fish OR hydroelect! OR reservoir)

AND HLEAD(treaty OR agree! OR negotiate! OR resolution OR commission OR secretariat OR "joint management" OR "basin management" OR peace OR accord OR settle! OR cooperat! OR collaborat! OR disput! OR conflict! OR disagree! OR sanction! OR war OR troops OR letter of protest OR hostility OR shots fired OR boycott OR protest! *OR policy OR decision OR decide OR plan OR scheme*)

AND ("drinking water" OR WaSH OR sanitation OR hygiene OR development OR "subsistence agriculture" OR displac! OR waterborne OR crops OR security OR cultur! OR tradition! OR historical OR technolog! OR aesthetic OR recreation OR ecotourism OR sport OR ecosystem OR conservation OR "human rights" or "Millennium Development Goals" OR nature OR vulnerab! OR "data sharing" OR training OR educational OR "way of life")

AND NOT HLEAD(sea NOT ocean NOT navigat! NOT nuclear NOT "water cannon" NOT "light water reactor" NOT "mineral water" NOT "hold water" NOT "cold water" NOT "hot water" NOT "water canister" NOT "water tight" NOT " water down" NOT "flood of refugees" NOT Rivera NOT Suez NOT Panama NOT oil NOT drugs *NOT "Vietnam War"*)) and ((#GT113#)) and Date(geq(01/01/1994)))

This search generated 543 news articles between 1 January 1994 and 31 December 2014. In a first sweep of the documents, I combed through the articles and selected those that met the following criteria: A claim that 1) a human decision, plan, or action, 2) affected/would affect the way humans interact with water, 3) which either did or would help or hinder their ability to meet their basic needs (as defined in the iBAR:

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[8] Terms in italics are iBAR additions to the latest Basins at Risk search terms.

survival, safety, social, esteem, cognitive, aesthetic, spiritual, or transcendent needs). Unrelated and duplicate articles were discarded.

Coding

For the second round of coding, I again processed all 543 articles, skipping over those that were discarded in the first pass. I employed a Dedoose- a qualitative web application- for coding, and gave unique code names to each distinctive event. One event- say the construction of the Xayaburi Dam- would come up again and again over time in various articles, and using the app, I tagged each occurrence using its specific code- XAYA. Often, schemes of several dams were referenced as a group, and in these cases, I used a code encompassing the group. However, if an article singled out an individual project, that was coded under its individual code. For instance, the Xayaburi project falls both under its individual code, XAYA, and the code THE12, which references the group of twelve mainstream dams planned for the Mekong. If an article talked about effects of Xayaburi individually, I coded it as XAYA, but if it talked only about the mainstream dams, the THE12 code was applied.

I exported the articles with their event codes attached as comments from Dedoose to a Word document, which I used for the third level of coding. At this stage, I created an Excel file housing all of the event code names and some descriptive text about the events. This file is also where I compiled information about the level and representativeness of participation alluded to for each event. Information included in this spreadsheet included:

- Event code
- Event description
- Event type(s)
- Claims about participation levels/representativeness

In the third level of coding, I read through each article in the Word document, looking specifically for references to human needs as defined by the iBAR, i.e. my dependent variables. These events and iBAR ratings were coded based on the article publication date into a second Excel spreadsheet with the following fields:

- Event code

- Date bin based on the article publication date (January-June were coded as the year, July-December were coded as the year + ".5")
- Demographics (who's needs are purportedly being impacted)
- iBAR codes (-9 to +9)
- Article text on which each code was based

Again, the criteria I used were: A claim that 1) a human decision, plan, or action, 2) affected/would affect the way humans interact with water, 3) which either did or would help or hinder their ability to meet their basic needs (as defined in the iBAR: survival, safety, social, esteem- divided into external and internal, cognitive, aesthetic, spiritual, or transcendent needs). Some important notes on the event coding criteria:

The Human Element:

The event had to be a human decision and not natural phenomenon. Floods, droughts, and climate change[9] all came up in the articles and all do affect the way people interact with water, and how/whether they can meet their basic needs. However, I specifically wanted to examine human leverage points. Thus, while the flood or drought were not included as events, a drought mitigation measure or a climate change adaptation initiative qualified. If a flood was pinned on Chinese dams upstream, it was coded on the iBAR scale (as a -8, security needs) under the dams' event code, but the flood itself was not an event with its own set of effects.

Interactions with Water:

This varies from the BAR study in a significant way, as the BAR events only qualified as events if the action was about water as a distinct and non-substitutable resource. Shipping and infrastructure, particularly, were excluded from BAR analysis because shipping and transportation happen not just on water but via many avenues. However, I chose to broaden my net to capture all ways people interact with the resource, justifiable in the field of nature-society geography. Ferrymen losing their jobs after the construction of a bridge, increased transboundary river patrols after an agreement sparked by the murder of Chinese sailors on a cargo ship, and poacher-turned-

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[9] Acknowledging that climate change is human-caused, but distinguishing between the phenomena of climate change (as an effect) and the human decisions/actions that are causing it, which is beyond the scope of this study (policies - changes in interactions with water - meeting needs vs. policies - climate change - changes in interactions with water - meeting needs)

conservationist studies of waterfowl on the Tonle Sap all qualified as iBAR events but not BAR events.

Time:

Many of these events come up again and again in the news discourse over time, and I wanted to capture that in my data. However, in flurries of media activity, the same claims would be repeated many times in the span of a few days as various news outlets essentially duplicated one another. The desire to capture temporal trends at a reasonable resolution led to the creation of six-month date bins. Each event could be marked with a specific iBAR code once per date bin.

So, if seven articles between January and June of 2011 talked about Xayaburi, and three mentioned a positive economic impact, two mentioned potential negative environmental consequences, and six talked about negative implications for livelihoods, these would be the codes: XAYA, 2011, +6; XAYA, 2011, -1; XAYA, 2011, -8. Within that six-month bin, it did not matter how often the same code reappeared. For instance, if two different articles within a time bin discussed two different groups affected by an event in different ways, but those ways both fell under one iBAR code, they were both coded under as one occurrence of the code. However, as soon as an article fell in a new six-month period (e.g. July-December 2011, for our example), the slate was wiped clean and any event could receive any code again. For example, a July 2011 article mentioning potential positive economic growth associated with Xayaburi could get a new XAYA, 2011.5, +6 code because the date bin switched to 2011.5.

Claims/Discourse:

Note that my criteria allowed me to code based on claimed and projected effects rather than stated, fact-checked effects. In this way, I assessed the reality projected in the discourse rather than that captured by scientific, on the ground measurements. Coding via the discourse allowed me to capture the variables based on what was said (or implied) rather than my own determinants of what the effects are/would be. How do we know if there will be cultural or spiritual implications of a decision? How do we decide whether or not a dam hurts the aesthetic needs of the population, or whether it helps? My evaluations may differ greatly from those of actual stakeholders. Essentially, I decided that the best way to remove my personal lens from the equation was to let the

people tell me, via the news, whether an event affected a particular need. This was my best attempt to capture qualitative, hard-to-measure (and often based on self-reporting, anyways) variables across multiple scales.

Similar to the problem of capturing the qualitative, there is also the problem of capturing the longitudinal. Events themselves happen over time (e.g. a plan, a decision, multiple stages of implementation, etc.), and the effects happen at varied times and paces among those impacted. Some positive or negative effects of a plan or decision happen well before that decision is implemented. For example, merely announcing a plan for a dam or signing a power purchase agreement may reap esteem (both external and internal) benefits for a country long before construction begins, while security effects, both positive (e.g. flood risk management, poverty alleviation) and negative (e.g. displacements for construction, loss of livelihoods, etc.), could occur discretely or nebulously in the short, medium, and long term. Coding effects as and when they are projected in the discourse allows for the capture of the nebulous, qualitative, long-term effects that could otherwise slip through the sieve.

It is important to note, though, that I did not eliminate any voices or their corresponding claims from the discourse. This means that my data captured sometimes directly conflicting statements. For example, some claim that China's cascade of dams will increase insecurity downstream, while China claims it will increase security via more consistent flows. One article might discuss both of these premises and may even disagree with one perspective of the other, but both are captured in the coding. Likewise, the claims in propaganda pieces are also captured. Thus, it is important to remember that the data represent the discourse.

One aspect of the discourse not captured, however, is the counterclaims. These counterclaims come in two forms: The author claims either that the plan/action 1) will not have the negative effects claimed by others, e.g. a politician saying a dam will not harm anyone downstream, or 2) will not have positive effects claimed by others, e.g. an environmental organization saying a dam will not actually help the economic growth of a country.

Data Processing

While applying iBAR codes, I flagged articles and codes of which I was unsure, and revisited them once all the coding was complete to make a final determination. At the end of the event coding, I had 566 iBAR codes divided among 42 six-month time bins spanning the 21 years between January 1994 and December 2014. I revisited my list of event codes and eliminated those that were not associated with any iBAR ratings and ensured all event codes from the iBAR had a matching listing in the event codes spreadsheet.

Next, I combined my two spreadsheets by transferring the Event Type(s) to match with each event in my iBAR coding. This allowed me to filter my codes by type of event. Additionally, I created a second layer of demographics coding. Each iBAR code was initially coded with a list of affected countries/peoples/stakeholders, and I took this data and grouped them into the following bins:

- MRC Countries (Cambodia, Laos, Thailand, and/or Vietnam, or some combination of those, but excluding China and Myanmar)
- Basin Countries (any of the MRC countries, plus China and/or Myanmar)
- Least Developed Countries (Cambodia, Laos, and/or Myanmar- chosen by Least Developed Nation status)
- Communities (any mention of poor communities, indigenous peoples, fishers, farmers, local activists)
- Politicians (local/national politicians and political parties)
- Environmentalists (environmental NGOs, typically international)*
- Foreign/Economic Interests (out-of-basin countries, investors, companies, global financing institutions, tourists)*

* The Environmentalist and Foreign/Economic Interests groupings frequently co-occurred with one or several other groupings, and so I divided them into unique columns. Thus, an iBAR code affecting some need of Thailand, China, and foreign investors was captured both as "Basin Countries" and "Foreign/Economic Interests."

This data was analyzed with descriptive statistics to create timelines and data pictures of EJ in the Mekong River Basin. The data was also analyzed for relationships between BAR events and iBAR outcomes.

Interview Methods

Capturing structural violence (environmental injustice) in events gleaned from newspapers alone is potentially insufficient, particularly in a part of the world where freedom of the press is rated poorly (see Figure 10). Thus, gaining a more nuanced understanding of water-linked environmental justice in the region necessitated a qualitative, on-the-ground approach.

Figure 10. 2013 World Press Freedom Map. Note that Mekong countries are related "difficult" to "very severe." Source: Reporters Without Borders (2013).

To conduct this research authentically, it was critical for me to talk to actual people working and living in the basin to confirm and expand on what I learned from the event data. Thus, I conducted several semi-structured conversations with practitioners (n = 6) including representatives from intergovernmental organizations (IGOs) and nongovernmental organizations (NGOs) in the Mekong Basin, including:

- Mekong River Commission
- International Rivers
- World Fish
- International Water Management Institute (IWMI) Challenge Program on Water and Food (CGIAR)

- 3S Rivers Protection Network (3SPN)

- The Center for People and Forests (RECOFTC)

In each of these conversations, I asked the interviewee for important information from the past and present pertaining to the iBAR needs. I also asked them to project what they envision could happen in the basin over the next decades relative to the various values. For instance, one line of inquiry may involve questions such as:

- How do the various peoples in the Mekong Basin use water for safety and security?

- How has that changed over the last ten years?

- How will it change in the coming years?

Beyond questions related to iBAR needs, I also asked about participatory processes in the basin and about the role of institutions in the basin. Questions on these topics included:

- What institutions have affected changes in the basin over the past 10 years?

- What needs are represented in basin institutions?

- How- if at all- have local populations been engaged to participate in basin decisions?

- Who is engaged, and who/what needs are left out?

I analyzed the notes from my interviews via content analysis to identify common themes regarding iBAR needs, institutions, and participation. I summarized the results in several tables and interpreted them into figures for discussion.

Two interviews took place in Thailand, two in Lao PDR, one in Cambodia, and one in Vietnam, taking me across the basin in the process. I traveled by plane (rarely), car (rarely), metro, train, motorbike, and boats of various sizes and trustworthiness across all four Lower Mekong states. As I traveled, I had many informal conversations with residents about their experiences with water-related needs, and I observed how people interact with water in their daily lives. Photos are included sporadically in this dissertation to give the reader a sense of the place beyond the graphs and tables.

Conference/Panel Methods

The Second Mekong River Commission Summit and International Conference was held in Ho Chi Minh City, Vietnam, on April 2-5, 2014. I attended the April 2-3 International Conference portion of the event, which was themed: Cooperation for Water, Energy, and Food Security in Transboundary Basins under Changing Climate. I also attended a panel discussion hosted on April 4 by the Save the Mekong Coalition. This was an unofficial side event that highlighted voices and opinions outside of those expressed at the conference. The panel discussion theme was: The Journey from Hua Hin to Ho Chi Minh City and Future of the Mekong River.

At both the conference and panel discussion, I took notes on the content of the presentations and the context of politics and interactions between participants. I analyzed the notes from both the conference and the panel via content analysis to identify common themes regarding iBAR needs, institutions, and participation. Additionally, I compiled a list of questions asked at both events and their respective answers (when available in my notes). I synthesized each of these questions and provided commentary based on my assessment of the iBAR events (news articles) and the interviews I conducted in the basin.

Figure 11. Photo. In the Mekong Delta, a woman steers a long boat through a muddy channel. Photo Source: Watson (2014).

Analysis

The initial portion of my analysis involved compiling all of the event data and producing timelines and descriptive statistics to paint a picture of environmental justice in the Mekong Basin. I utilized scatter plots to display iBAR impacts over time, with different point markers displaying different categories of events or different affected populations. Additionally, I took counts of the number of each iBAR rating by category and used these to produce line and bar graphs.[10] While the statistical options for categorical-level data are limited, I conducted Chi-Square tests for relevant comparisons between institutional variables related to justice outcomes, [11] including:

- Least Developed Countries (LDCs) vs. communities: all events
- LDCs vs. communities: dam project events
- LDCs & communities: hydropower events vs. all other events
- Research/data sharing: with institution vs. without
- Conservation/climate change: with institution vs. without
- Research/data sharing, conservation, and climate change: with institution vs. without

Finally, I re-coded Basins at Risk (BAR) data into the same six-month bins as the iBAR event data and created a timeline scatterplot and an area chart to compare and contrast iBAR (positive peace) outcomes with BAR (negative peace) events over time.[12]

For the on-the-ground qualitative data, content analysis illuminated themes emerged from the interviews, conference, and panel. Particularly, I coded all three sets of notes by iBAR needs in the basin (nine categories: survival, security, social, external esteem, internal esteem, knowledge, aesthetic, spiritual, and transcendent needs).[13] Then, I went through the three sets of notes again and extracted all statements about institutions. I identified several sets of themes in these notes, and regrouped all of the statements into their relevant categories: NGOs, financiers, MRC, MRC future,

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[10] Relevant objectives: Better understand how water relates to social/environmental justice, glean insight on the role of institutions in securing justice and human needs
[11] Relevant objective: Glean insight on the role of institutions in securing justice and human needs
[12] Relevant objectives: Better understand how water relates to social/environmental justice, develop a transferrable approach for assessing justice/injustice in transboundary basins
[13] Relevant objective: Better understand how water relates to social/environmental justice

enclosure, corruption, face-saving, unenforceability, and a right hand/left hand problem.[14] Third, I again combed through the three sets of notes, extracting all statements about participation. These, I regrouped into country-specific statements (by country), and general statements. I then applied a secondary level of coding by identified themes: of level of engagement, when/who, political will, capacity, and fear.[15]

Finally, from the conference and panel notes, I recorded all of the questions, and when I had recorded the answers, the relevant answers. I added a third column to this data where I added commentary based on my observations at the time, my review of the 21 years of basin news events, and my interviews. This observational data served as both an interesting portrait of politics in the basin and as a means for cross-checking the themes from my various data sources.

All together, these various data collection methods and analysis techniques helped me to address my motivating question: How can we better achieve positive peace related to water?[16] Through a comprehensive assessment of environmental justice in the Mekong Basin and the relationships between justice, participation, and institutions, I will be able to recommend potential tools and techniques that may be applied – at least in the Mekong, if not more broadly – to improve human rights outcomes. Furthermore, if the iBAR tool proves to be a valid means of assessing justice, this approach could be used to assess and better understand environmental justice in basins around the world.

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[14] Relevant objective: Glean insight on the role of institutions in securing justice and human needs

[15] Relevant objective: Glean insight on the role of participation in securing justice and human needs

[16] Relevant objective: Draw conclusions/recommendations to better achieve human needs

Chapter 6: Results

This chapter contains the results of my EJ study of the Mekong Basin. It begins with general information about the iBAR data and interesting contextual information about the basin, and then it focuses on results pertinent to each of my four research questions. In the first section, I first provide an overview of the event data, followed by qualitative information about the iBAR categories. Then, I discuss information in an appendix that provides unique political insight into basin relationships. Finally, I spend a little time discussing event data surrounding dam construction, as hydropower-related activities dominated the iBAR event data.

After this general discussion, each of the four following sections includes results pertinent to each of my research questions. The results contained within each section may stem from event data, qualitative data, or both.

Political Context

Events

My iBAR event analysis produced 566 iBAR codes across 42 time bins spanning 21 years between January 1994 and December 2014. These results create an interesting picture of environmental justice in the Mekong Basin over two decades of metamorphosis in the region (see Figure 12).
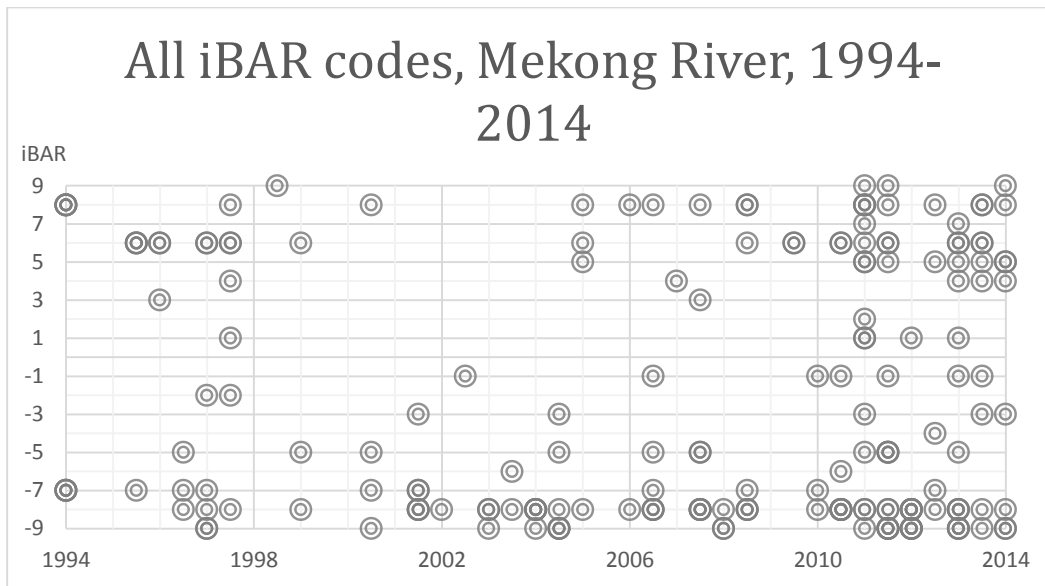
Figure 12. All iBAR Codes, Mekong River 1994-2014. This shows a significant increase in the number of EJ impacts reported in the Mekong Basin over time, paralleling the increasing development activity in the region. It may also suggest increased media attention paid to EJ impacts over time.

Over the 21-year period, claims about iBAR needs impacts increased, both in variety and quantity. In fact, around two-thirds of the codes (68%) occur in the second half of the time frame (mid-2004 through 2014). This is likely the result of an increase in specific Mekong projects being discussed in the news media, which could be attributed to several possible factors: 1) there is more going on for the news outlets to discuss, 2) there is more interest from the news media, 3) there are more voices talking. This last factor, combined with what seems like increased sensitivity to the variety of potential impacts of policies and actions in the Mekong, could also explain the increased spread of values represented in the more recent years.

When looking at this graph (and others following), note that darker data points represent overlapping codes from multiple events during that specific timeframe. For instance, multiple articles in early 2011 discussing plans ranging from dams to conservation measures all mentioned potential positive iBAR impacts at the security level (iBAR +8), which is shown as a darker data point in the graph.

iBAR Observations

Using the iBAR categories as a coding scheme, I combed through my interview notes, conference notes, and panel notes looking for statements about each of the categories of needs in the Mekong. I paraphrased the ideas mentioned in a chart, and highlighted (in light orange) those themes that were not well-represented in the iBAR events/news articles.

The iBAR scale is broken into three tables below, for display purposes. The first (Table 7) shows themes in the survival (iBAR ± 9), security (iBAR ± 8), and social (iBAR ± 7) needs.

Table 7: Interview, Conference, & Panel Themes within Mekong Survival, Security, and Social Needs.

Survival (± 9)	Safety/Security Needs (± 8)	Social Needs (± 7)
drinking, some straight from the river- problems with arsenic and salinity	transportation (including to the hospital)	cultural ceremonies involving river/sand bars
cooking	gold panning	collecting seaweed
subsistence farming, riverbank gardens	bathing in river after childbirth- poor WQ leads to infection	rice wine includes river water
digging wells because river water is poor WQ	diet based on diversity of fish, affected negatively by switch to aquaculture	kids playing in the river, fear of rapid change in water level
risks from transportation of hazardous goods, especially fuel-spills/fires could affect food security	poverty, how can people get past it without security?	Naga fireballs
food security (fish) threatened by hydro development- protein and micronutrients are primary concerns	threat of climate change & sea level rise	bamboo bridges bring communities together
tradeoffs to increase livestock (for food security) would require massive land use change	resettlement: highlands populated by indigenous people are also best for hydropower	roads create opportunities to connect

food prices could go up, making .5-3 million vulnerable	resettlement: big promises, don't deliver (e.g. poorly funded clinics)	Songkran- celebrated with water, cleansing the past, celebrating the future
	rapid changes in water level	water is a nexus for relationships
	floods and droughts (China blamed, but some evidence suggests their role is not as big as claimed)	fish paste made in Tonle Sap- savory element in almost all regional food- could be lost
	recent increasing attention to social sustainability of dams (driven by U.S. and EU), including new schools and healthcare, plus % cut from dam revenue	water as a uniting force
	sediment in Delta threatened by dams blocking sediment- critical to agriculture, subsidence will exacerbate effects of sea level rise	
	those who work in the water are getting skin infections from poor WQ	
	more time spent trying to find fish	
	livestock die from poor WQ	
	water-food-energy nexus, important for the livelihoods of people in the basin-- but can't ignore water quality issue	
	Millennium Development Goals, Sustainable Development Goals (MDGs/SDGs)	
	risks from transportation of hazardous goods, especially fuel- spills/fires could affect livelihoods, water quality	
	WEP can be a straitjacket to other nexuses like water + poverty	

	economic security: threatened if bridge construction impedes shipping (i.e. to Tonle Sap)	

The second table (Table 8) shows esteem needs, both external (iBAR ± 6) and internal (iBAR ± 5), plus cognitive needs (iBAR ± 4).

Table 8. Interview, Conference, & Panel Themes within Mekong External Esteem, Internal Esteem, and Cognitive Needs.

Esteem Needs: External (± 6)	Esteem Needs: Internal (± 5)	Cognitive Needs (± 4)
wealth = pride	loss of livelihoods can lead to debt, drinking, gambling	research shared little, too technical
all-weather roads	displacement -> change of career (fishing to frogging, slash and burn to rice cultivation)	research not sent to the right people
roads -> motorbikes (injuries went up)	Mekong is a source of regional pride	outsiders/NGOs/academia hosting fieldtrips so communities know what a dam looks like
bright lights big city is powerful	self-sufficiency	people unaware of their legal rights, educational campaigns
desire for "modernity"	resettled populations reverting to previous livelihoods	narratives vs. science (hard to link downstream- especially delta- changes to Chinese dams, but blame them vs. considering CC)
some anti-dam change to "we built this! We're a modern country!"	not provided sufficient options in the resettlement process	understudied ecological system
money = profound motivator	in Cambodia, fish stock decline leads to migration (no industry/jobs) and leaves a dearth of young people for the labor force (because they go to Thailand, Vietnam, Malaysia)	Thailand and Vietnam have more experts and scientists

within the region, developments (reservoirs, golf courses) seen as beautiful emblems	increasing area cleared and irrigated for agriculture, along with changes in access rights for irrigation, drives some out of agriculture (maybe to fishing)	MRC data collection, but still deal with competing information (dueling experts)
"state of the art" dam (Xayaburi), pride in experimental designs, offended by criticism	authenticity of fish from river- considered nutritionally superior- declining (and being replaced with aquaculture)	countries may be slow/evasive in contributing to studies
Economic development is driving priority		takes time to ID sources of problems, and problems are more diffuse (makes it hard for those who would protest)
assistance is based on GDP growth as the main performance indicator, making it the top priority (provide energy to grow businesses)		need for more information sharing
transportation		
over-forecasting of power demand in Thailand		

Finally, the third table (Table 9) shows aesthetic (iBAR ± 3), spiritual (iBAR ± 2), and transcendent (iBAR ± 1) needs.

Table 9. Interview, Conference, & Panel Themes within Mekong External Esteem, Internal Esteem, and Cognitive Needs.

Aesthetic Needs (± 3)	Spiritual Needs (± 2)	Transcendent Needs (± 1)
Tonle Sap is an attraction	cultural ceremonies involving river/sand bars	community-based research
Ecotourism	Naga fireballs	community investment in protecting/preserving resources
children play in water (but often cannot swim)	Buddhist and animist uses for water	self-regulation of fishing (stewardship)

		protecting Mekong Giant Catfish & Irrawaddy Dolphin
ceremonies (like Songkran) are recreational	spirits live in the river- need to appease	
within the region, developments (reservoirs, golf courses) seen as beautiful emblems	cave spirit near Xayaburi, contractors worked with the communities to appease the spirit	ecosystem services- not a top priority unless they are turned into $ values
potential recreational value of reservoirs	fear of repercussions from spirits for development of river	ecosystem is affected slowly, not always visibly, incremental, patchy
	forbidden to desecrate graves, sacred places including spirit houses (affected by reservoirs & dam construction)	hydropower dams are the big debate; meanwhile, thousands irrigation dams are making a potentially greater impact on fish
	relocation of spiritual places has to be part of resettlement plans, must bring in monks to do it	tributary dams (e.g. Lower Sesan 2) can do more damage to fish stocks than mainstream
	everywhere is sacred	habitat segmentation is a threat
		mangroves, wetlands, water quality (affected by dams)
		worry about one-size fits all fish ladder for 1000 species of fish ("fish shouldn't' need passports")

A few things stand out from these charts. First, the spiritual needs and repercussions on those needs, while almost absent from the event articles, were highlighted by the people living and working in the basin who I interviewed. Second, security needs are a major focus. They represent a broad set of salient basin phenomena. Third, the justification for labeling economic growth and development as externally-focused esteem needs becomes apparent: My interviewees talked about the

pride basin residents have for their development projects, the view of development projects as national jewels, and a deep value in being perceived as modern or state of the art. In sum, the interviews provide depth and nuance to the understanding of each iBAR value as they occur in the Mekong Basin.

Questions, or, "The Burn Book"

While attending the MRC conference, it became quickly apparent to me that the politics were in the questions: more specifically, in the Q&A sessions. Who asked what question of whom on which topic provided a rich portrait of current politics in the Mekong Basin. Questions reveal values. Questions reveal fears. Questions accuse, which also reveals fears. Questions, sometimes, are not even questions, but comments made just to weigh in on a topic. Answers (or sidestepping answers) to those questions reveal values and fears, as well. In a region where saving face is important, questions and responses were used to deliver jabs and burns.

I took notes on questions asked at sessions I attended at the conference and at the panel event, and I collected them in an excel file affectionately termed "The Burn Book" for all of the political scorn hidden- sometimes barely- beneath the surface of the comments. Those paraphrased questions, answers (when available), and my analysis of both are summarized in the two tables in Appendices A and B.

Dams

Plans and activities related to dam construction were a major force in the Mekong Basin between 1994 and 2014, precipitating many reactions including stated and projected impacts on the basic needs of Mekong populations and stakeholders. In total, 61.48% of iBAR codes were linked with dam construction proposals and activities. The following graphs explore how those iBAR codes differed among affected groups.
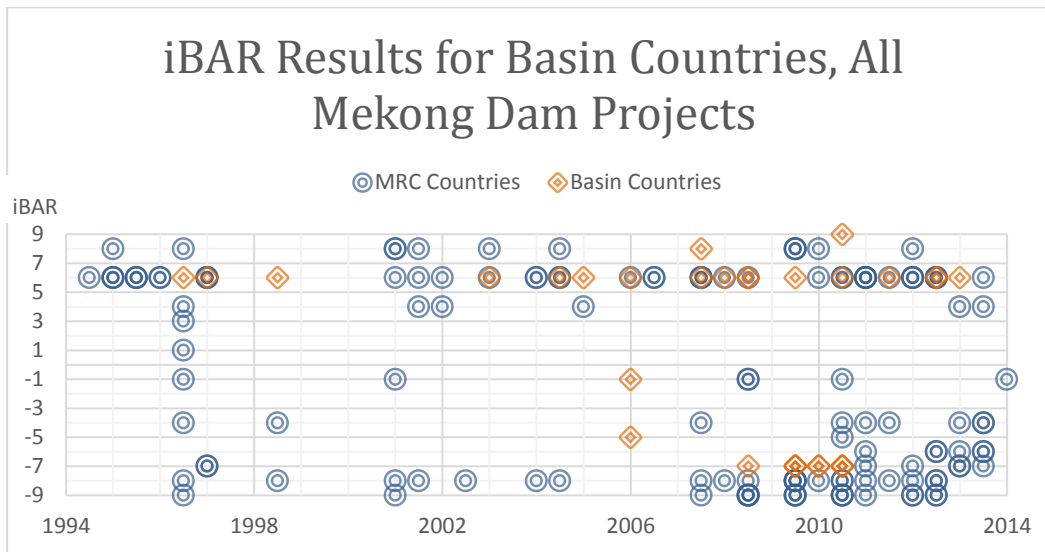
Figure 13. iBAR Effects of Dam Projects, All Basin Countries. Dam building impacts, both positive and particularly negative, became a much greater part of the news media dialogue starting in the late aughts. While dams were primarily a positive force in upstream countries, around 2010, the discourse shifted to claims that China would hurt its diplomatic relations (iBAR -7) via continued dam construction upstream.

This graph (Figure 13) shows the relationship between the MRC countries and their upstream neighbors related to hydropower development in the basin. Initial promotion of hydropower for economic growth (iBAR +6) in the mid-90s stalled briefly during an economic downturn in the late 1990s, then picked up and has remained consistent through 2014. However, the negative effects of dam building on a broader set of the needs of downstream (MRC) countries became a much greater part of the discourse starting in the mid-to late 2000s. The dams tend to be a positive force in upstream countries, particularly for China, but notably, around 2010, the dialogue shifted towards claims that China would hurt its diplomatic relationships and create regional political instability (iBAR -7) if it continued unilateral and secretive dam construction upstream.
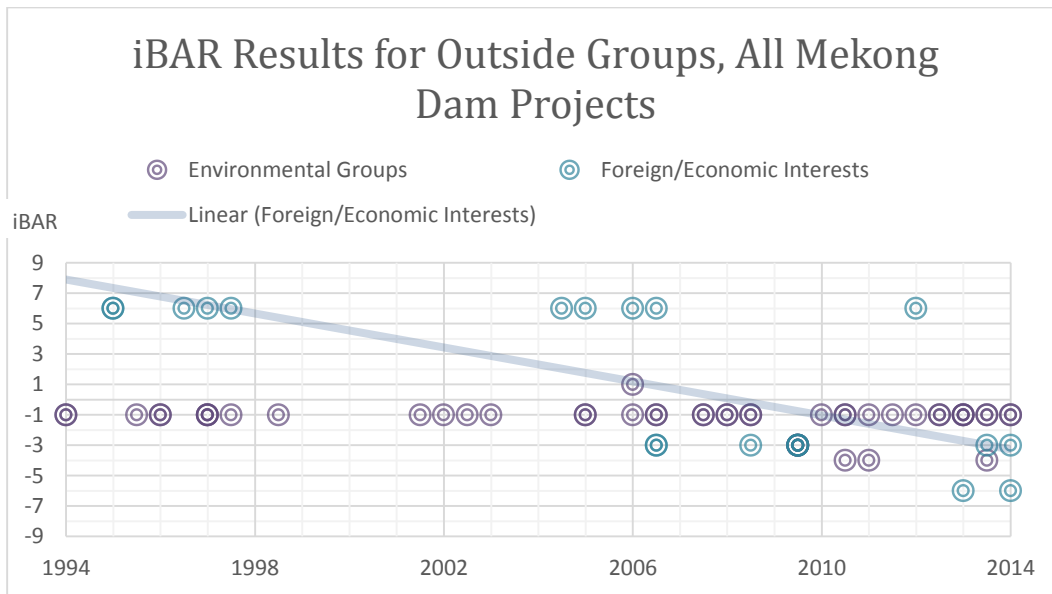
Figure 14. iBAR Effects of Dam Projects on Outside Influences. As expected, dam construction is associated with negative impacts on environmental groups' abilities to meet their transcendent needs (which encompass needs beyond human, i.e. the environment). Interestingly, the impact of dam development on foreign economic interests has switched from primarily needs-affirming (particularly economic benefits) to needs-deterring (particularly hurting aesthetic- e.g. tourism- and esteem- e.g. reputation- needs).

Showing iBAR effects of Mekong dams for environmental groups and foreign/economic interests, this graph (Figure 14) shows an interesting trend of more negative impacts for the latter. The "foreign/economic interests" category encompasses everything from tourists to construction companies, investor countries, and international financiers like the World Bank. Around 2006, there is more discussion of the potential negative impact of dams on tourism (iBAR -3). Towards 2013, an interesting phenomena occurs where critics of dams make claims that continuing with projects despite public opposition and protests will damage the reputation of those companies and lenders (iBAR -6). This is a great example of a recent trend in public discourse calling out the reputation of companies/institutions based on their social justice stances, as we see in the United States with brands' support (or not) of LGBT+ rights movements.

What institutional factors are associated with positive or negative impacts on human needs related to water?

Events

To analyze environmental justice implications of basin activities, I filtered the iBAR codes to look specifically at Least Developed Countries (iBAR impacts specifically affecting LDCs in the Mekong: Cambodia, Laos, and/or Myanmar) and communities (iBAR impacts specifically affecting poor, riverine, or minority communities, or communities defined by a profession, such as local fishers or farmers). The following graphs show the stated or projected environmental justice impacts of Mekong activities between 1994 and 2014.

Along with the graphs, I report medians and modes. Median reporting is typically used for ordinal data, while mode is applied with nominal (categorical) data. Conservatively, the iBAR data should be considered categorical, as it is murky to make the assumption that one type of needs- say, aesthetic- is more important than another- say, spiritual needs. However, there is an ordinal (ranked) quality to the data, since it is based on Maslow's Hierarchy, which specifies that meeting more basic needs (survival, security, etc.- the extreme ends of the iBAR scale) is important to pursuing the higher level (aesthetic, self-actualization, etc.) needs. Thus, median is not an inappropriate approach. Additionally, reporting the median provides additional information about whether the overall spread of impacts skewed towards needs-affirming or needs-deterring. However, the median rating could be an iBAR value that only appeared once in the spread of data, so long as it falls in the middle of the spread. Thus, reporting mode provides additional insight into what iBAR value appeared most frequently. These strengths and limitations are important to remember when appraising the results.
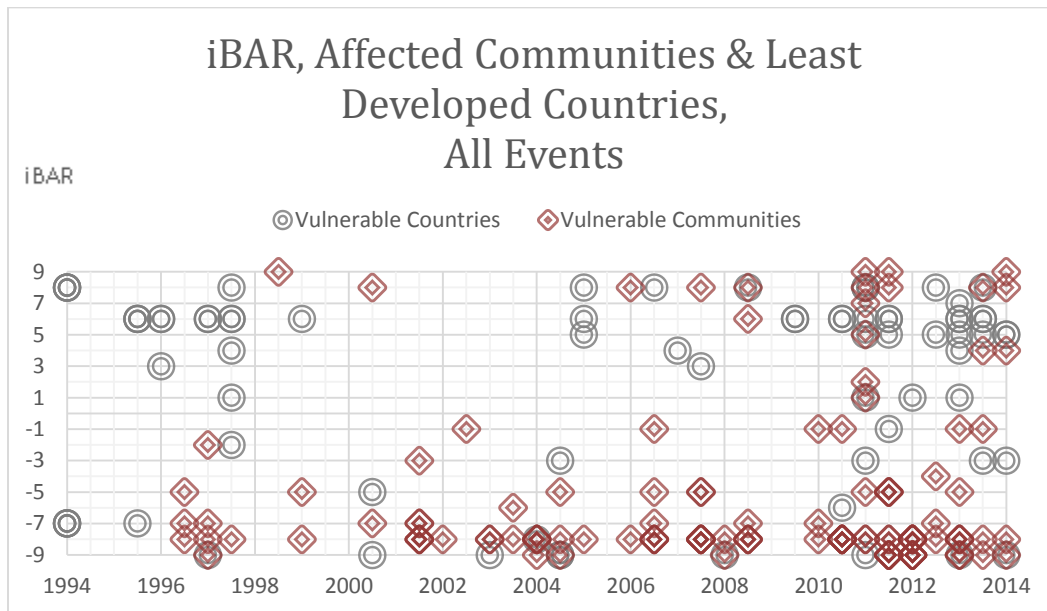
Figure 15. iBAR Impacts on Communities & Least Developed Countries, All Events. Note especially that the impacts skew much more negatively for communities when compared to LDCs.

As the potential impacts of plans and activities in the Mekong are portrayed in the media, LDCs and communities in the Mekong Basin have significantly different experiences (see Figure 15). The median iBAR rating for LDCs is +5 (mode +6), while the median (and mode) rating for communities is -8. Note that some of the positive potential impacts on needs, particularly those of the LDCs, are the result of those countries putting forth their own plans and decisions to use water to meet their needs, particularly economic growth (iBAR +6), poverty alleviation (iBAR +8), and independence/sovereignty (iBAR +5). The graph also illuminates an increase over the last 21 years in the discussion of how decisions affect both LDCs and communities, and the more recent discussions also span a much wider set of needs than those discussed in the 1990s and early 2000s.
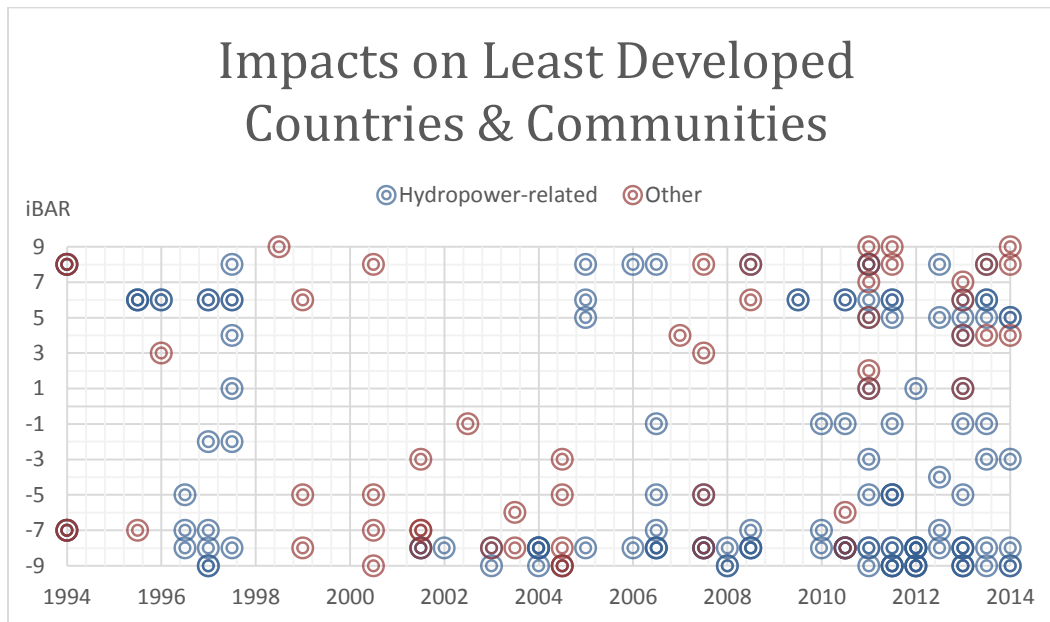
Figure 16. Hydropower Impacts on Least Developed Countries (LDCs)/Communities. When compared to other types of events, we can see that hydropower-related impacts are associated with a large concentration of negative impacts, particularly on survival (e.g. food security) and security (e.g. livelihoods) needs of LDCs/communities.

Is there a significant difference between hydropower-related and other types of events' impacts on Least Developed Countries communities? The median iBAR rating for hydropower-related events (n=144) that affected LDCs/communities was -7 (mode = -8), while the median for all other types of events (n=53) affecting LDCs/communities was +1 (mode = +8). This suggests that hydropower-related activities affect LDCs and communities in a significantly different way than other plans, policies, and activities, at least as projected in public discourse about the Mekong from 1994-2014 (see Figure 16).
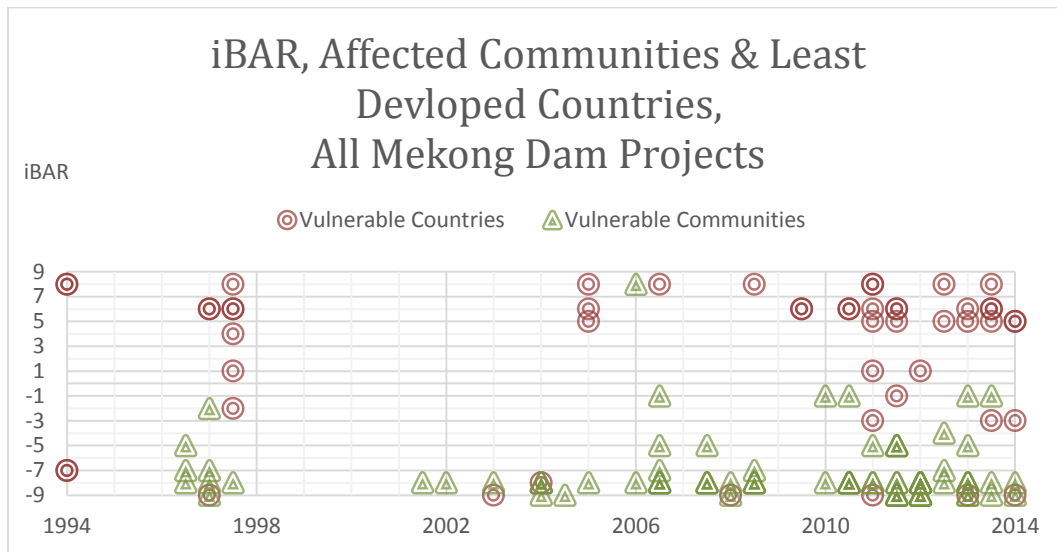
Figure 17. iBAR Impacts of Dams on Communities & Least Developed Countries. This highlights a phenomenon where LDCs- particularly Laos- pursue development to meet state-level economic needs at the expense of communities both within and beyond their borders.

This graph (Figure 17) shows the stark difference between Least Developed Countries (defined here as Cambodia, Laos, and/or Myanmar) and communities as they are affected by dam development in the Mekong Basin. The median (and mode) iBAR effects of hydropower on LDCs were +6, while for communities, the median (and mode) iBAR rating was -8. In the context of the Mekong, this tells a very clear story about LDC countries, particularly Laos, promoting dam-building for economic growth (+6) as its ticket out of LDC status. Meanwhile, others warn of the potentially devastating effects on livelihoods (-8) and food security (-9) in communities downstream.

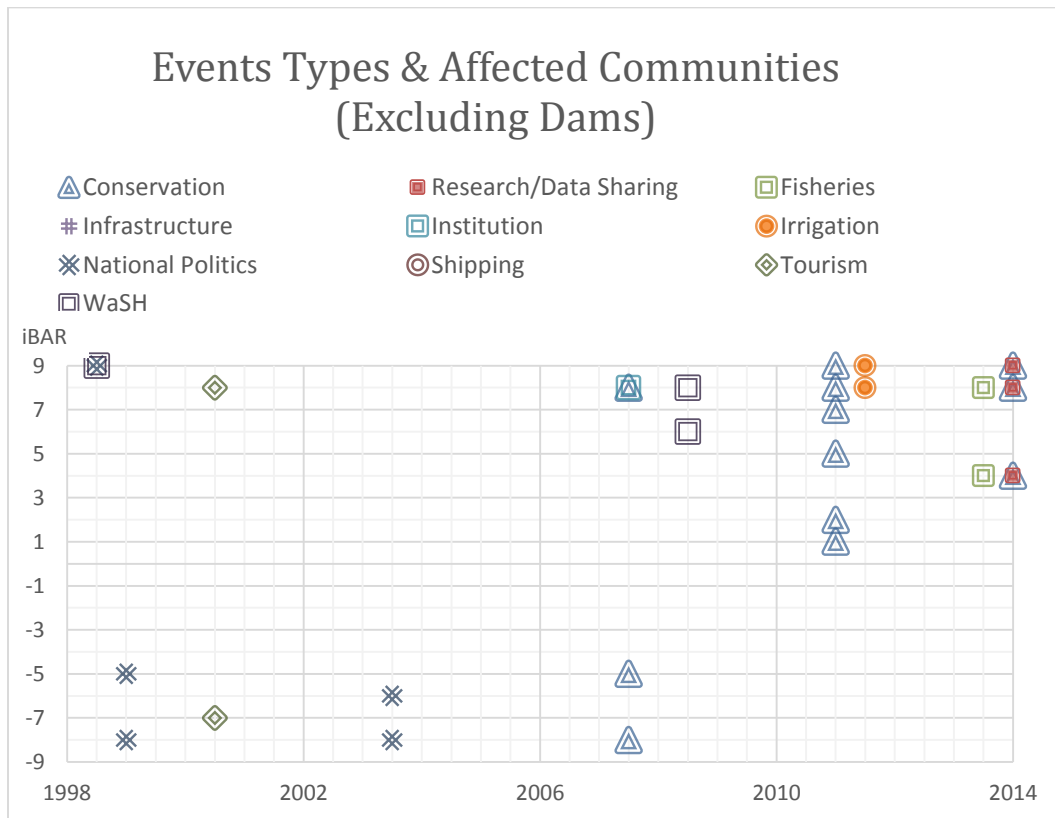Figure 18. iBAR Impacts on Communities by Event Type, Excluding Dams. While the previous figure shows the detrimental potential/proclaimed effects of dams on communities, this figure illuminates that other types of events also have specific needs-affirming or needs-deterring effects on vulnerable populations. Shipping and infrastructure are associated with negative impacts, while irrigation, fisheries, research/data sharing, WaSH, and most conservation and tourism initiatives are primarily associated with needs-affirming impacts.

When it comes to communities at the sub-national level, there is a clear relationship between type of activity and impacts on human needs (see Figure 18). Shipping and infrastructure were only associated with negative iBAR ratings. It sounds counterintuitive that infrastructure would have only negative impacts on communities, but the ratings may be a result of the way the projects were discussed in the media. Benefits of those projects (mostly bridges) were discussed at a larger scale, relating to national, regional, or broader economic interests. While there may have been benefits of these projects for communities, they were not mentioned.

Research/data sharing, fisheries, irrigation, and water for sanitation and health (WaSH) initiatives were all cited as having only positive impacts. Tourism, conservation,

and national politics were split, with some positive and some negative iBAR impact ratings. All of the projects and plans associated with positive iBAR impacts for communities were essentially about helping those communities, although there may have been ulterior motives (i.e. conservation, winning political favor).

However, since the iBAR ratings are alleged and projected, it may be that actual results varied. An example of this possibility can be observed in the only negative impacts in the conservation event category, both associated with a conservation effort to protect the Irrawaddy Dolphin. More stringent regulations on fishing led to negative impacts on livelihoods (iBAR -8) and independence (iBAR -5). Likewise, a fisheries project may be promoted by the government in the news media for its future positive impacts, and we may be missing the counterargument that tells us about possible cons.

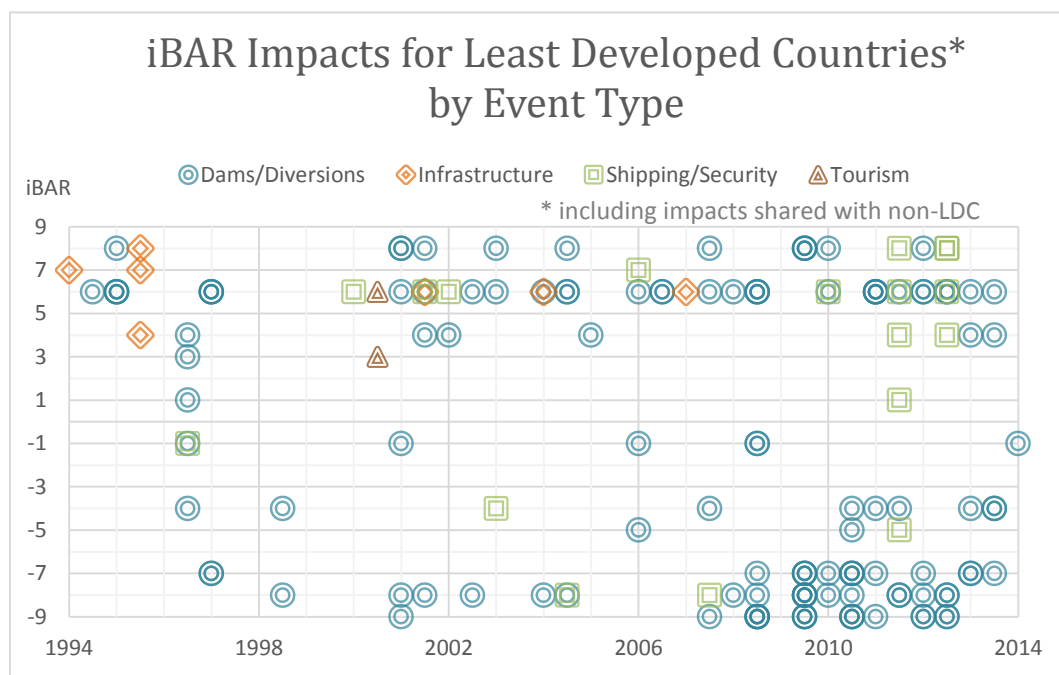Figure 19. iBAR Impacts on Least Developed Countries by Event Type- I. Unlike the previous graphs, this one and the following two look at impacts on LDCs that also impact non-LDC countries. Interestingly, it captures the positive impact of infrastructure projects at the regional level, suggesting that infrastructure and hydropower development are two areas that potentially benefit LDCs while harming communities.

Often in the iBAR data, an event would allegedly affect not just the vulnerable country, but other countries as well. For instance, MRC initiatives affect both its LDC (Cambodia, Laos) and less vulnerable (Thailand, Vietnam) members. This graph (Figure 19) expands on the previous to include all iBAR data for Least Developed Countries, including those also pertaining to non-LDCs. Divided by event category, this graph again shows the mixed impact of dam plans/projects. However hydropower-related initiatives besides actual dams and diversions (e.g. those captured here were also conservation and/or research/data sharing) are associated with positive iBAR outcomes (see Figure 20 below).

Interestingly, this graph also captures the positive impacts of infrastructure at the national to regional levels, though (as shown in Figure 16) the effects were negative at the community level. This alludes to another instance- along with dam development- where the needs of LDCs and the needs of communities are apparently at odds with one another.
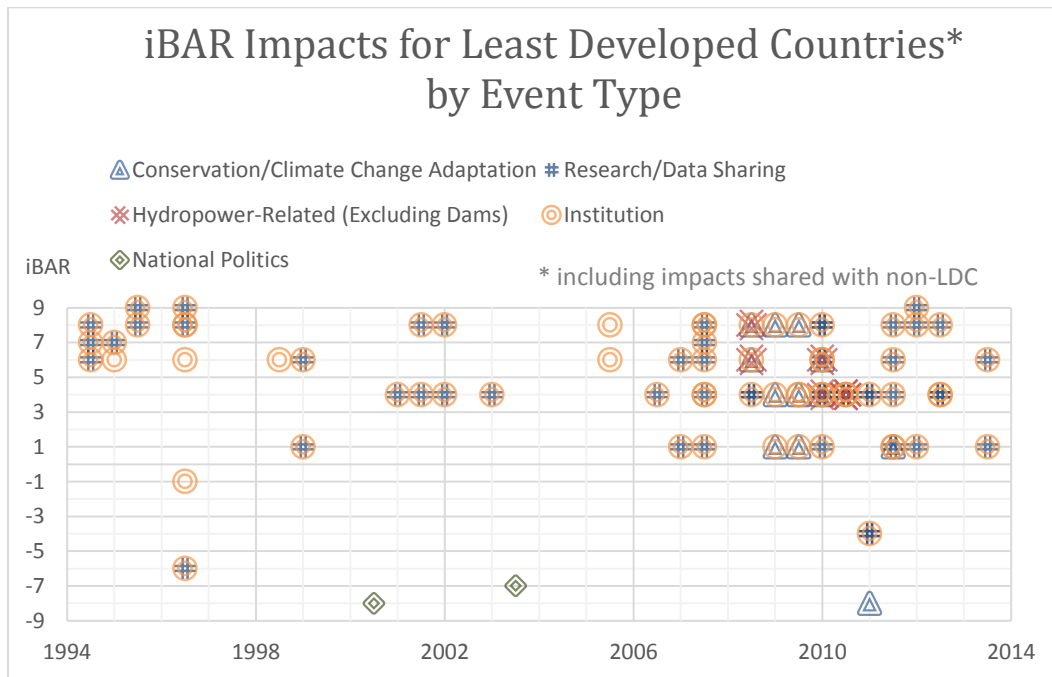

Figure 20. iBAR Impacts on Least Developed Countries by Event Type- II. This graph shows a significant positive influence of institutions on affirming the needs of LDCs, but at a regional level rather than for LDCs in isolation.

A continuation of the previous graph, this graph (Figure 20) shows the remaining event types that affected LDCs. Particularly, while the previous graph focused on physical or economic initiatives in the basin, this graph shows the political, scientific, and institutional types of events. There is significant overlap here, as particular events fell under multiple types. However, the iBAR ratings clearly weigh much more heavily on the positive side of the iBAR scale.

Interviews & Conference/Panel Themes

After conducting my interviews and attending both the conference and workshop, taking notes, and rereading my notes several times, I identified several themes regarding institutions in the Mekong Basin. Here, I use a broader definition of institutions than I did with the event data. I include NGOs, financiers, and civil society organizations (each corresponding with a theme identified in the interview –conference-panel data). I also identified themes of enclosure, corruption, face-saving, unenforceable institutions, and a right hand/left hand problem. Additionally, I compiled separate notes on the MRC and the MRC's future, and I kept a running "other" category for institution-relevant statements of interest that did not fit the above categories. Tables showing select statements in each thematic area, paraphrased from my notes, are below.

Table 10. Interview, Conference, & Panel Note Themes Relating to Institutions in the Mekong Basin: Civil Society, NGOs, & Donors.

Civil Society

- Civil society organizations are becoming a little stronger, especially in Thailand
- Thai civil society movement is the most powerful in the region- comes from Pak Moon, red shirts, village level - They know what they're doing.
- Is it time to consider sanctions against Lao?
- International courts are a last resort- rarely solves central issue
- Some hydroprojects in Vietnam stopped by public pressure
- NGO: If you want to stop Xayaburi, focus on the PPA (Power Purchase Agreement) contract. Drive public attention towards EGAT to get them to postpone terms and conditions for Xayaburi and give more time for studying impacts. Consumer pressure is needed. Support the Thai civil challenge of the PPA. It may be illegal in light of the Mekong Agreement.
- Thailand is most open, Cambodia is demanding to participate (someone else said in Cambodia, people sleep), but Laos and Vietnamese citizens are afraid to speak out (the DAD- decide-announce-defend method). In Lao, people glance nervously.
- Thai people sued (Xayaburi) for right to participate

NGOs

- NGOs and universities play a role in giving marginal people a voice
- sometimes decision-makers ask NGOs for advice, but it is questionable/doubtful that they will follow that advice
- NGOs host fieldtrips, try to build capacity for democratic participation by training people and providing resources
- NGOs are hosting educational campaigns to help communities understand their rights
- Laos vehemently denies the influence of NGOs (do not want to recognize their legitimacy/say)

Donors

- some dams are better than others- US/EU financed are preoccupied with social sustainability, which leads to elaborate resettlement plans
- Social/environmental sustiainability plans are stifled using the "it will scare away investors" argument
- Nam Theun 2, Theun Hinboun- both European investors, both had extensive social management plans including long lists of indicators - While it is unlikely they will be fully realized, Theun Hinboun has shown 2 continuous years of improvement
- Donor funded, council (4 PMs) requested, new full Mekong study (fisheries, sediment, irrigation)- hire outsiders to do the study
- Ask: who is investing? Decisions are made in the background, not at official meetings
- Europe doesn't have one voice, and the American's are still an unknown.
- Big players: Korea, China, Japan, Malaysia, Vietnam
- Must make business case for why private sector should adopt social and environmental standards
- Need to involve them from the beginning
- Involve private sector in the knowledge generation process
- CIA (cumulative impact assessment) can be death by a thousand cuts

Table 11. Interview, Conference, & Panel Note Themes Relating to Institutions in the Mekong Basin: Corruption, Face-Saving, Enclosure.

Corruption	Face-Saving	Enclosure
• the governments incentivize local government officials who sell out the communities without consultation - can be a threat even if the community has tenure	• Economic growth is the main priority- The rest is just to placate outsiders and look good.	• land grabs- rubber plants, Chinese companies
• institutions in the Mekong are good at maximizing income, but so much of that income goes back into the pockets of individuals (not to the communities)	• In China, no one believes the results of EIA (Environmental Impact Assessment), but at least we do one.	• the communities need tenure, which would give them access to loans, plus the ability and desire to invest in their ecosystems - provides security which is key to getting out of poverty
• Cambodia and Vietnam continue to build dams despite knowing it will harm them… because dams concentrate money to one source, and it is easier to graft from profits ["right hand doesn't see what the left hand is doing."]	• Laos- workshops not meaningful because everyone knows you can't speak against the government's plans, great consequences, disappearances of agitators	• resource rich communities are less likely to have tenure, disenfranchises communities, especially minorities
• system of concessions and bribes, works for individual interests but not the public- family ("mafia") driven with local "bosses" - benefits few	• Cambodia- political climate is changing, but consultation is mostly meaningless: communities are given the wrong info in the wrong languages. Asked yes/no with no info about costs -- Dams built before EIA is finished	• the governments incentivize local government officials who sell out the communities without consultation - can be a threat even if the community has tenure
• thousands of small dams, under the radar (any for irrigation, owned by private companies), going up quickly due to changes in land use	• There is a Natural Resource Assessment Law in Cambodia, but plans (hydropower, mining) go into effect too quickly to complete the assessments. They don't have the capacity to do all of the assessments for the number of projects. They only did one report on Lower Sesan 2. China has an Overseas Investment Environmental Protection law, but never follows through; it just goes ahead with the projects anyways.	• some view hydropower as a way to restrict the population's access to water
• 3S: protest in Kratie for company taking land- guards with machine guns shot at protestors (and never faced consequences); increases fear of speaking out		• the area surrounding reservoirs becomes restricted access to prevent erosion
• Dozens of people, locals, abducted/disappear, when they speak out about being dispossessed-- not activists, just people who have lost everything. When they speak out, they disappear.	• Laos is scared of participation, but the current system of polarization and protests is bad for saving face	• Cambodia and Vietnam continue to build dams despite knowing it will harm them… because dams concentrate money to one source, and it is easier to graft from profits ["right hand doesn't see what the left hand is doing."]
• Thais have vibrant civil society which will challenge the government to a degree, but will not speak out against "big wigs"… They will speak out against companies, but not against generals.	• Laos vehemently denies the influence of NGOs (do not want to recognize their legitimacy/say)	• Tonle Sap- example of how profound water grab can be
• if there is a fishing commune, and a poacher is caught, there are no rules, no rights, no way to fine him… and he may come back with gunmen (Cambodia)	• Xayaburi: Information sharing, villagers said it shouldn't be called participation	• From forest to monoculture - land use change is the biggest change affecting people's daily lives (particularly in Cambodia)
• In Kampong Thom province, poachers will come with gunmen and take what they want-- illegal, but no enforcement power, and no willingness to stop them because the poachers have connections/pay bribes to the local politicians (Cambodia)	• Laos- workshops not meaningful because everyone knows you can't speak against the government's plans, great consequences, disappearances of agitators	• 45% of Cambodia has been given as concessions to companies (Chinese, Korean, Malaysian)
• (Cambodia) Poachers will donate to a local politician's campaign funds (bribe to look the other way), and the politician uses the money to buy votes	• Laos- workshops not meaningful because everyone knows you can't speak against the government's plans, great consequences, disappearances of agitators	• system of concessions and bribes, works for individual interests but not the public- family ("mafia") driven with local "bosses" - benefits few
• Laos- workshops not meaningful because everyone knows you can't speak against the government's plans, great consequences, disappearances of agitators	• Cambodia- political climate is changing, but consultation is mostly meaningless: communities are given the wrong info in the wrong languages. Asked yes/no with no info about costs	• thousands of small dams, under the radar (any for irrigation, owned by private companies), going up quickly due to changes in land use
• issues when national revenue goes up from development, but national-to-local sharing mechanisms are weak	• Without ability to visualize and understand consequences, the communities cannot debate or deliberate or express their fears	• 3S: local people completely dispossessed, cemeteries bulldozed, protest in Kratie for company taking land- guards with machine guns shot at protestors (and never faced consequences)
• the governments incentivize local government officials who sell out the communities without consultation - can be a threat even if the community has tenure	• Laos- no conversation anyways, locals are unaware of their rights (question about whether that is deliberate)	• shift to irrigated agriculture is changing the system from open access to private or communal (village level) water rights
	• Laos and Vietnamese citizens are afraid to speak out (the DAD method)	• government (?) tries to do community fisheries, but it doesn't work well because there are no institutional tools to manage it

Table 12. Interview, Conference, & Panel Note Themes Relating to Institutions in the Mekong Basin: Unenforceability, .Right Hand-Left Hand.

Unenforceability

- Institutions- laws and policies include all the "good stuff" (consultation, participation, etc.), but it is not implemented. E.g. Nam Mang 3 sidestepped it by declaring emergency status (2005)
- ASEAN declaration for Human Rights, not followed, very weak
- Transportation: Mekong Agreement Article 9, some transboundary agreements, but ineffective and limited enforcement + some lack of compliance + lack of training capacity (how to follow rules)
- There is a Natural Resource Assessment Law in Cambodia, but plans (hydropower, mining) go into effect too quickly to complete the assessments. They don't have the capacity to do all of the assessments for the number of projects. They only did one report on Lower Sesan 2.
- China has an Overseas Investment Environmental Protection law, but never follows through; it just goes ahead with the projects anyways.
- MRC needs "teeth", needs cooperation to prevent future conflict
- MRC secretariat doesn't have the power to stop Laos (no enforcement capacity)
- MRC Secretariat cannot order the countries to do anything. MRC is the countries; they are the boss. The Secretariat's role is to provide good information
- MRC is NATO: No Action, Talk Only
- MRC: works with Minister of Water Resources or Environment, not higher level (like the Energy Ministers, who could affect the PM decisions)
- MRC: ineffective, not doing what it should be

Right-Hand/Left-Hand

- Thai communities don't want dams, NIMBY, so they're building them elsewhere
- Cambodia and Vietnam continue to build dams despite knowing it will harm them… because dams concentrate money to one source, and it is easier to graft from profits
- Laos- very conscientious scientists and experts
- Cambodian public servants are genuinely concerned about effects of Don Sahong, but they can't speak out because it would go against their own country's policy about dam building (i.e. Lower Sesan 2)
- The guys in the delta are very concerned about sediments; the guys in Hanoi keep funding more dams.
- The right hand doesn't know what the left is doing.

What is the role of institutions (such as laws and agreements) in promoting environmental justice related to water?

Focusing in on the effects of institutions on LDCs and affected communities, in particular, there are interesting trends in the event data. First, in my assessment of the Mekong between 1994 and 2014, there was only two institutional event iBAR ratings for vulnerable populations or LDCs alone (a UN backed initiative influencing Cambodia and select Cambodian villagers). However, institutions did have a significant, positive effect on the needs of LDCs when considered out of isolation. For example, the MRC activities did not (reportedly) directly and solely benefit Cambodia or Laos, but benefitted them both alongside Thailand and/or Vietnam.
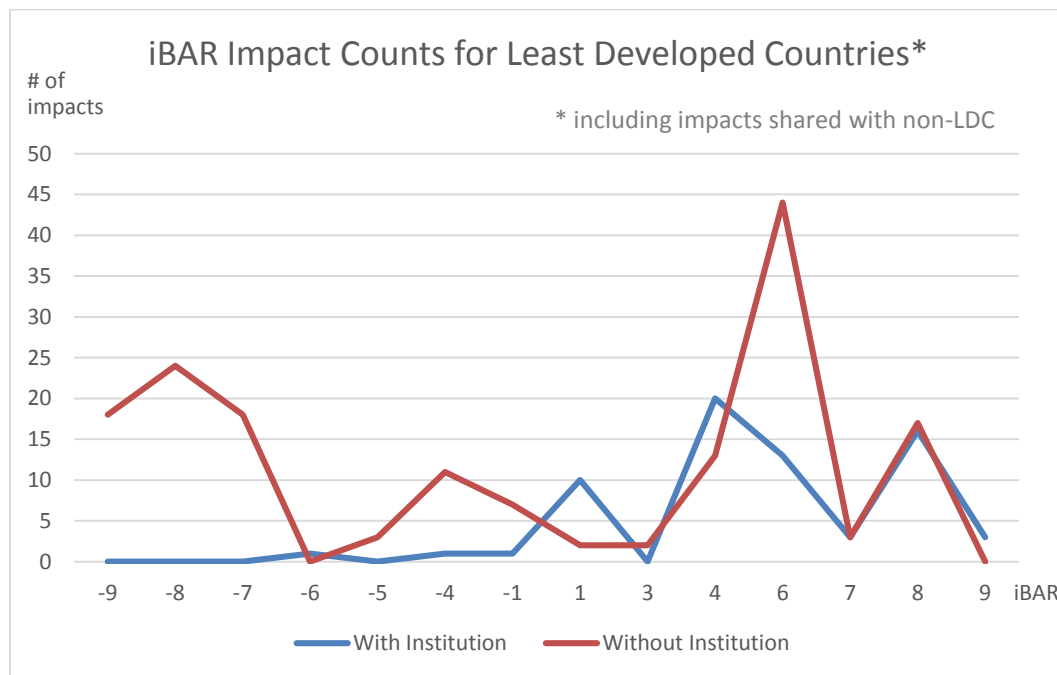
Figure 21. iBAR Impact Counts for Least Developed Countries, by Institutional Presence. Institutions have a positive effect on basic needs for LDCs. Events associated with institutions were associated with 95.5% needs-affirming impacts, while non-institutional events were split half needs-affirming, half needs-deterring.

Figure 21 shows counts for each iBAR rating for Least Developed Countries (inclusive), divided into institution-affiliated events and events not associated with an institution. It demonstrates the positive effect of institutions on countries' abilities to

meet their basic needs. In fact, while non-institutional iBAR codes were split evenly between affirming (positive) and deterring (negative), iBAR codes for institution-linked events were 95.5% affirming for LDCs.

Figure 22. Photo. Children bathe and play in the Mekong at Don Det, in the 4,000 Islands region of Laos. Their floatation devices consist of tethered used plastic water bottles. Photo Source: Watson (2014).

I also examined the role of institutions more broadly, in terms of all effects and not just those on LDCs and communities. Coding the iBAR event data by event type(s) allowed me to look at the variations in iBAR impact based on whether or not an event was affiliated with an institution.

Figure 23. iBAR Impacts by Event Type. Notably, hydropower impacts, both positive and negative, dominated the public news media discourse throughout the 1994-2014 time period, representing a high proportion of all codes.
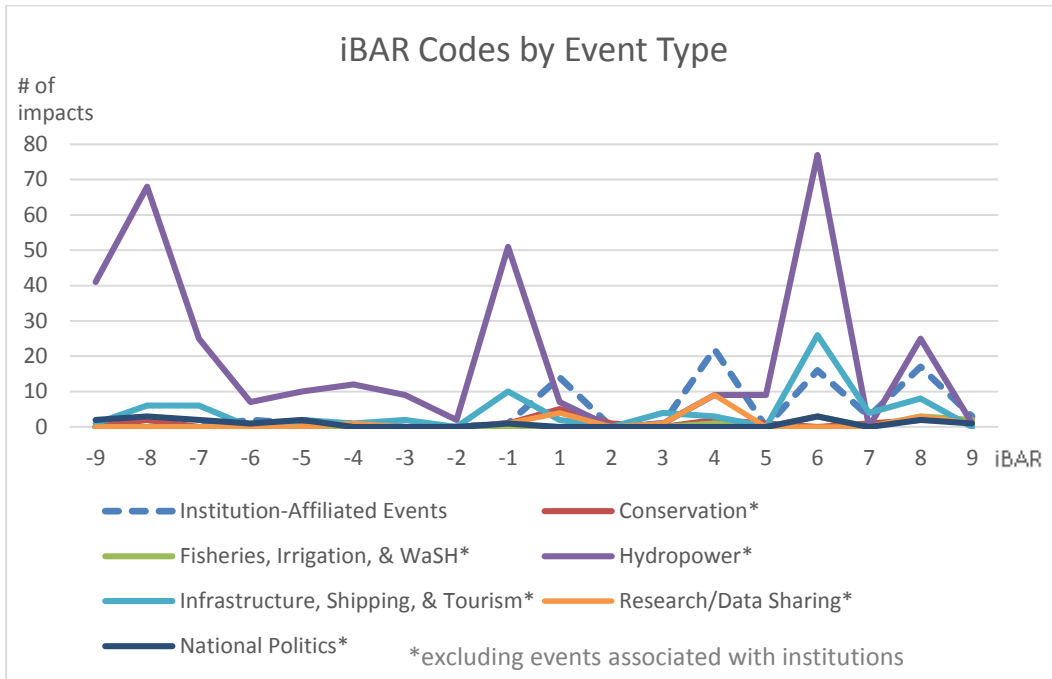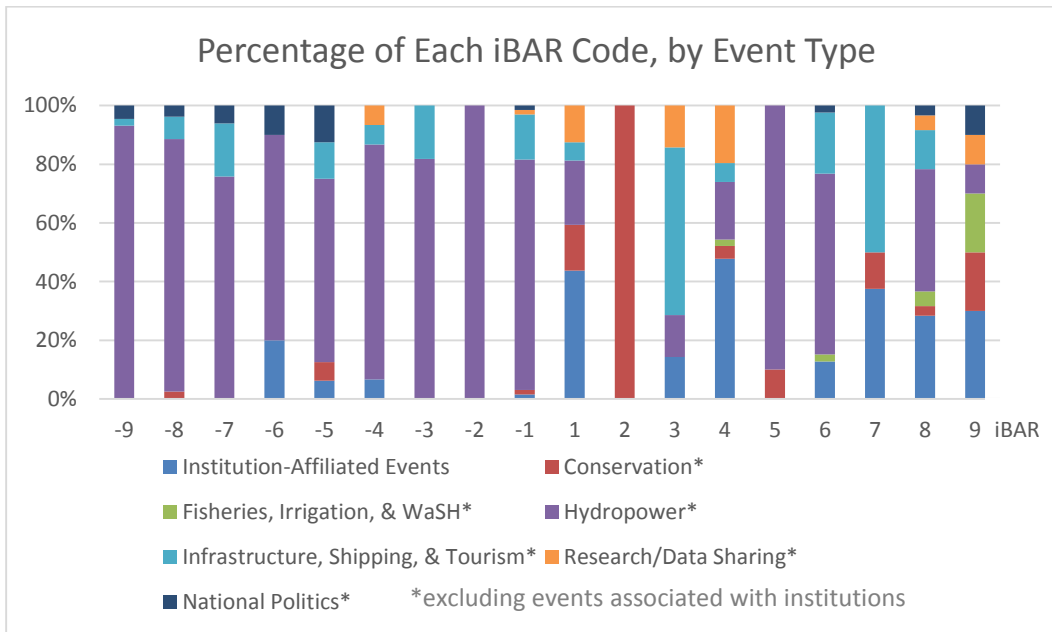

Figure 24. Percentage of Each iBAR Code, by Event Type. This graph shows, for each iBAR code, the percentages of each code that fell under each event category. Because

hydropower is such a dominant source of codes, hydropower impacts make up the majority of several iBAR categories.

Figures 23 and 24 show the distribution of iBAR codes by event type. All codes associated with events linked to institutions were pulled from the data, and the remaining events were divided into their respective event categories. Some similar categories- particularly those with only a few associated iBAR codes- were collapsed for ease of display. Specifically, the fisheries, irrigation, and WaSH codes were combined into one grouping, and the infrastructure, shipping/security, and tourism codes were collapsed into another grouping. Figure 21 shows the actual numbers of codes per iBAR category, while Figure 22 shows the percentage of each iBAR code associated with each event type. The main take-away from these graphs is that in the public discourse between 1994 and 2014 in the Mekong, the pros and cons of hydropower were discussed far more than those of any other type of activity.
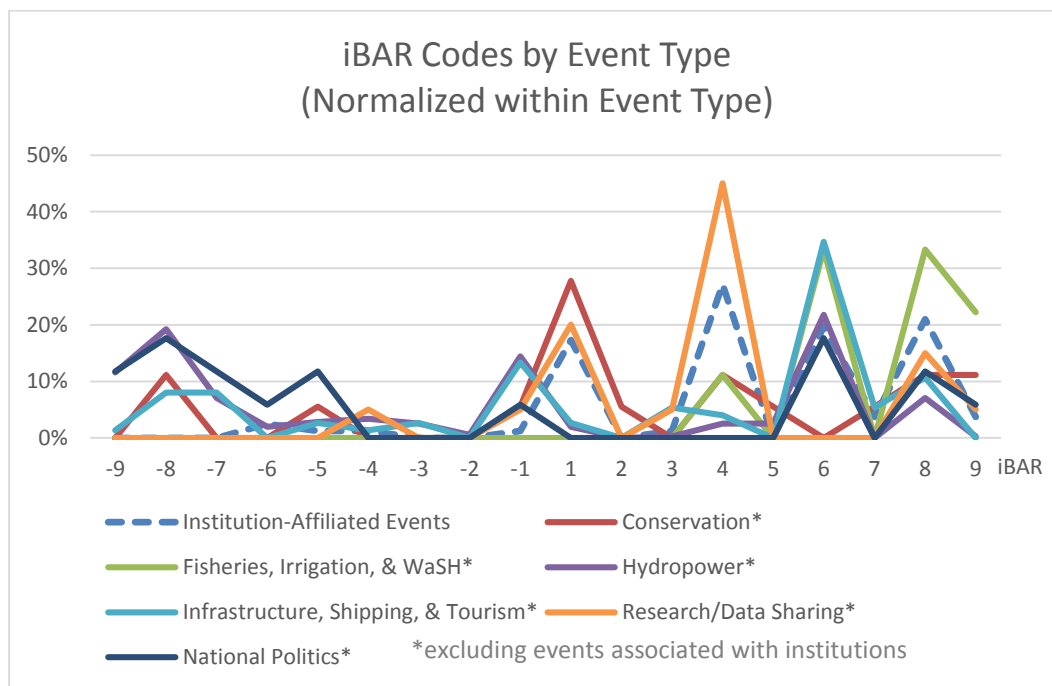
Figure 25. iBAR Impacts by Event Type, Normalized within Event Type. By normalizing the codes within event types, we can see where each event stands it in its impacts. Note that institutions have four spikes: affirming transcendent, knowledge, external esteem, and security needs.
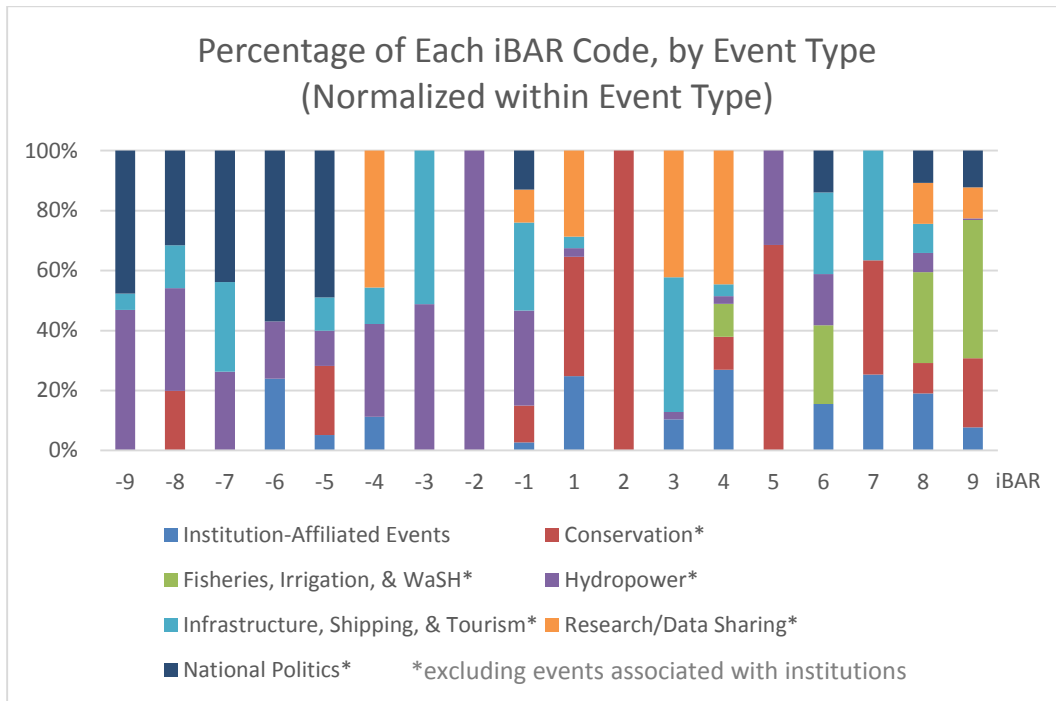
Figure 26. iBAR Impacts by Event Type, Normalized within Event Type. Note that conservation was the only event type associated with affirming spiritual practices (+2) and hydropower the only affiliated with deterring spiritual practices (-2). However, these iBAR categories had very low code counts, and it is likely that the media subsumed spirituality under its discussion of impacts on culture.

To look more closely at the trends among different event types, I normalized the data within the event type. E.g. Hydropower code counts for each iBAR rating were divided by the total number of hydropower codes to create a percentage. Figure 25 shows this normalized graph, and the results fit what we would expect to see. Conservation efforts are associated more strongly with iBAR +1 (affirming transcendent needs, which encompass care for ecosystems), research/data sharing events are associated with iBAR +4 (affirming knowledge needs), and hydropower plus the infrastructure, shipping, and tourism category are associated most strongly with iBAR +6 (affirming external esteem needs, encompassing economic growth). National politics- which in my selected news articles, often revolved around corruption and unilateral action- stand out in the needs-deterring iBAR categories (-5, -6, -8, and -9: internal and external esteem, security, and survival). Hydropower also stands out in the negative

iBAR ratings, particularly -1, -8, and -9 (deterring transcendent, security, and survival needs).

Figure 26, which shows these normalized trends as a function of total iBAR scores in each category, further demonstrates these trends. Notably, the only event types affiliated with spiritual needs are conservation (affirming spiritual practices) and hydropower (deterring spiritual practices), but these are based on an extremely low number of codes (n=3). Spiritual needs related to water were not often discussed in the media, and when they were potentially involved, they were conflated with culture (i.e. practices were talked about as cultural rather than spiritual practices, though they may actually have spiritual significance).

The events linked to institutions show four major spikes, all on the affirmational side of the spectrum. Institutions are linked with relatively high counts of transcendent (+1), knowledge (+4), external esteem (+6), and security (+8). Looking back at our raw counts, there are more iBAR +1 (transcendent) outcomes associated with institutions than there are with non-institutional conservation/climate change initiatives. There are also more +4 (knowledge) outcomes associated with institutions than there are associated with non-institutional research/data sharing arrangements.

Since conservation and research/data sharing frequently, but not always, overlapped with institution-related events, I used these two cases for comparison. I divided iBAR codes for conservation and climate change initiatives (n=51) based on whether they were also coded as an institutional event type, and I did the same for research/data sharing events (n=71). Both had fairly low numbers of associated codes.
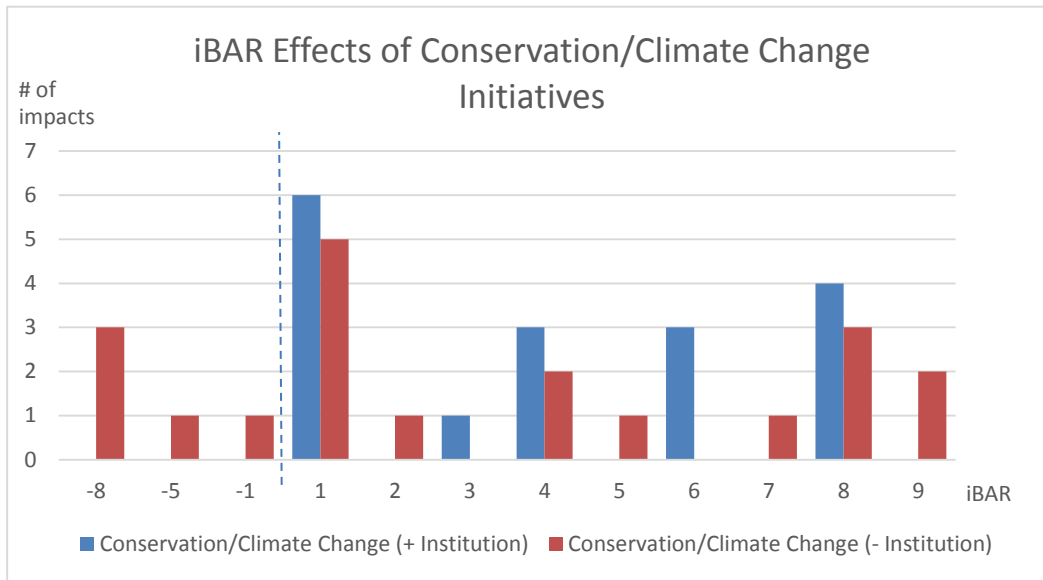
Figure 27. iBAR Effects of Conservation/Climate Change Initiatives, Institution Present or Absent. Overall these two sets of data are very similar. The institution-absent conservation initiatives were associated with some negative impacts while the institution-present ones were not, but it is important to notice that the counts in these categories are very low.
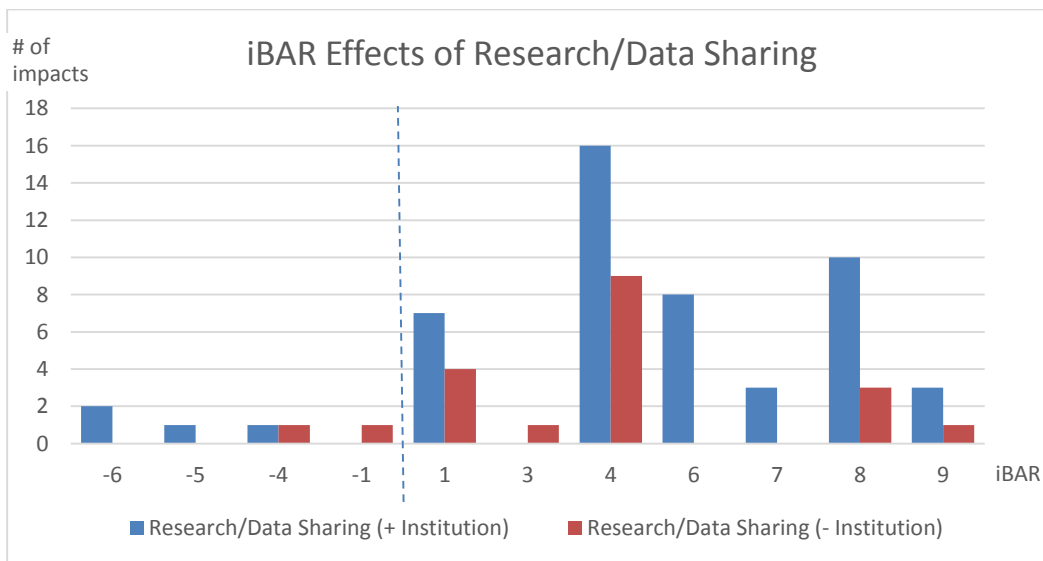
Figure 28. iBAR Effects of Research/Data Sharing Initiatives, Institution Present or Absent. Institution present vs. absent research/data sharing initiatives were not significantly different in their impact on basin populations. Notably, institutions are

defined as treaties or River Basin Organizations, but a broader definition of institutions that captures NGO and academic initiatives may capture all these impacts.

Figures 27 and 28 show the spread of iBAR codes for conservation/climate change initiatives and research/data sharing initiatives, divided by whether they were the product of an institution.[17] While there was insufficient data for statistical analysis, the similarity of the distributions suggests that in these cases surveyed, there was not a significant difference between these types of efforts that was dependent on the presence of an institution (defined as an international governance body or agreement). A broader definition of institution that captures the initiatives of NGOs and academic institutions would likely capture most of these events, however, and would likely yield different results.
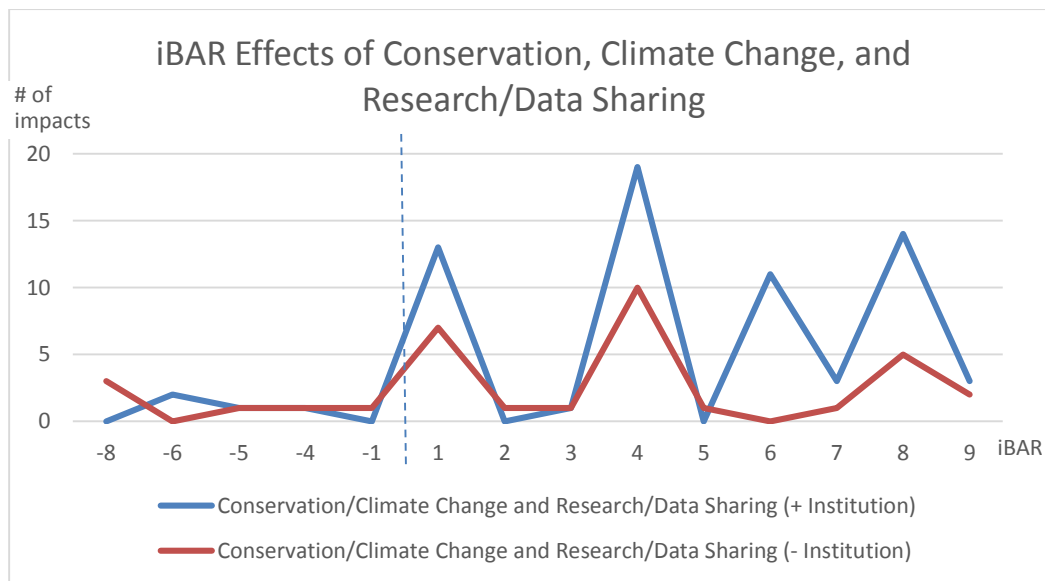
Figure 29. iBAR Effects of Conservation/Climate Change and Research/Data Sharing Initiatives, Institution Present or Absent. The notable difference between institution-present and absent event impacts is that institution-linked events affirm external esteem (e.g. economic growth) needs while institution-absent events do not. As manifestations of basin country's will, institutions like the MRC must work to keep these types of needs in the forefront. However, the non-institutional groups like NGOs and academics are more at liberty to focus on affirming other values without linking those values to economic development.

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[17] Some iBAR ratings had zero cases, and thus are not included in the display. A dotted line marks the division between deterring (negative) and affirming (positive) iBAR ratings in the two graphs.

By combining conservation, climate change, and research/data sharing initiatives' iBAR impacts into one graph (Figure 29), we can see more clearly the similarities and differences depending on the presence of an institution. Both with- and without-institution categories show spikes at +1. +4. And +8, though there was a higher volume of these codes for events associated with institutions. There is a notable difference at the +6 (external esteem) level, suggesting that during this period in the Mekong, institutions were better at capturing the external esteem needs- primarily in the form of economic growth- of Mekong stakeholders.

Do negative peace (absence of violence) and positive peace (absence of structural violence) coexist or conflict?

Comparing iBAR to BAR ratings turned out to be a challenge, because although the iBAR scale was designed to mimic the BAR scale, the ratings are still categorical (nominal) rather than interval or ratio-level, which means that they are not ideal for statistical analysis. However, by making the datasets slightly more comparable, I was able to produce some illuminating qualitative results. For this analysis, I used the subsets of iBAR data and BAR data that overlapped with one another: January 1994 through June 2013.
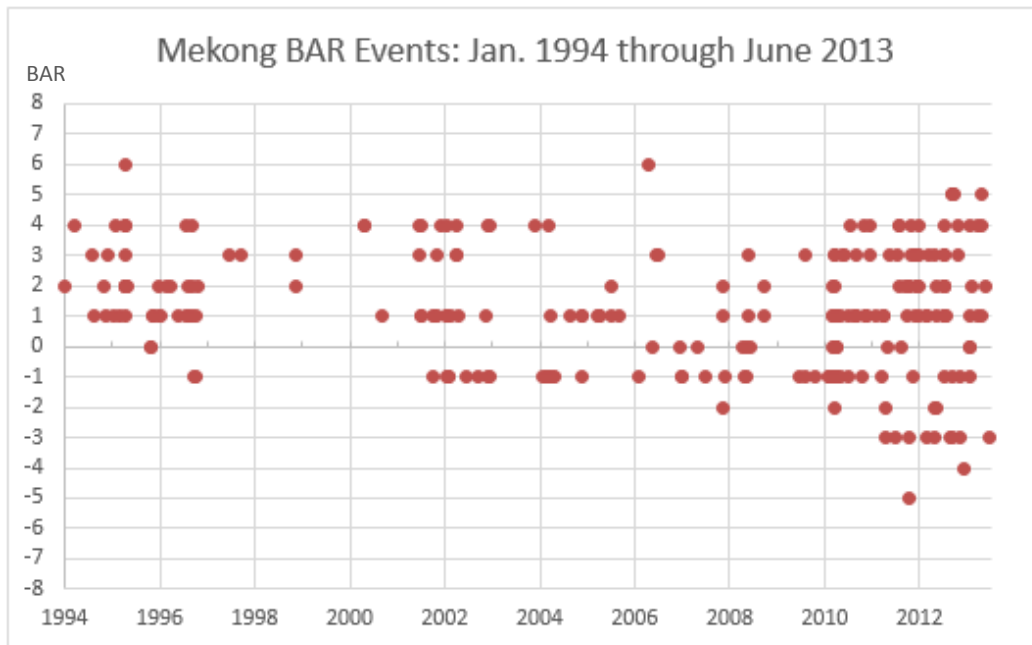
Figure 30. Basins at Risk (BAR) Events in the Mekong Basin: Jan. 1994 through June 2013. Like the iBAR impacts, the frequency of conflict and cooperation increased over time.
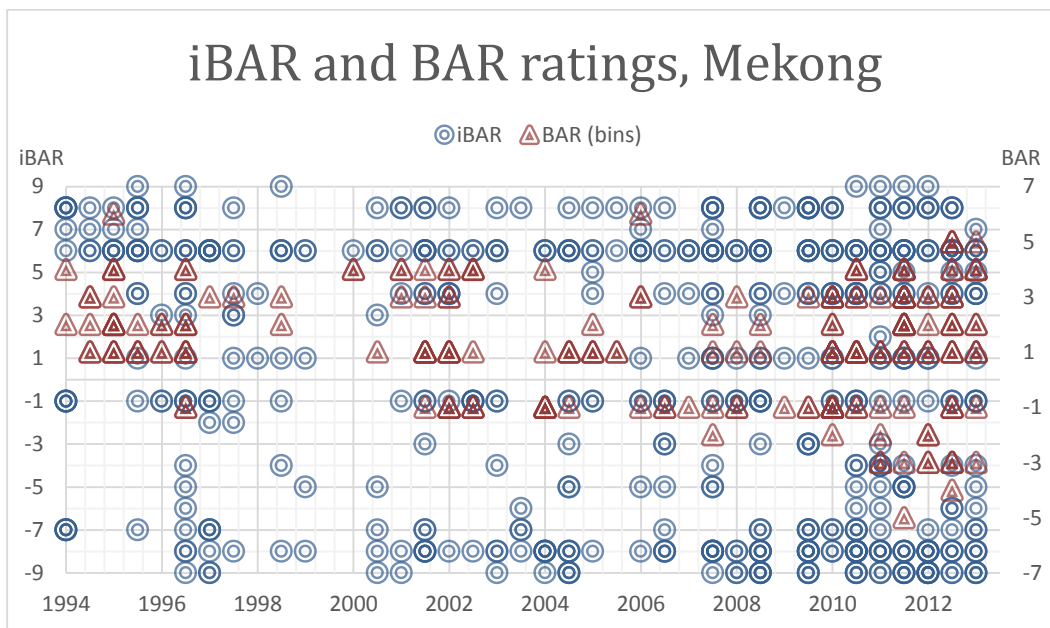
Figure 31. iBAR and BAR Mekong Codes: Jan. 1994 through June 2013. Both scales show increased activity over time, but while conflict and cooperation remain on the more

mellow (BAR codes closer to 0) end of the scale, iBAR shows more codes at the extreme ends (closer to iBAR ±9). While conflict, particularly, remains subdued, the potential for severe needs-deterring impacts is high.

To make the BAR data (Figure 30) more compatible with the iBAR, I re-coded each BAR code into the date bins I used in the iBAR coding. For instance, BAR events coded 8-Jan-1995, 27-Jan-1995, 5-Apr-1995, and 20-Apr-1995 were all recoded as 1995, while events happening in November and December of that year were re-coded as 1995.5 (the ".5" code denoting the second half of the year). This allowed me to plot iBAR and BAR data on the same graph, Figure 31. Note that since the iBAR scale runs to ± 9, and the BAR to ± 7, I plotted the data on two separate axes.

Two trends are apparent in Figure 31. First, as in the iBAR events, BAR scale events become more frequent towards the end of the timeframe, both on the positive and negative sides of the spectrum. Second, BAR ratings stay closer to neutral; events are typically on the milder end of both conflict and cooperation- the "verbal expressions" of cooperation and hostility end. However, iBAR impacts focus more on the extremes, particularly in the negative (deterring) side of the scale- discussing negative impacts on survival and security.

The different pictures painted by the BAR and iBAR scales suggest that there is more to the situation than the negative peace aspect (BAR scale) alone. The BAR data shows 72.4% cooperative actions over this time period in the Mekong. The positive peace iBAR is split much more evenly (52% needs affirming), and those negative iBAR ratings suggest that despite injustices, perhaps this is a basin where countries do not openly fight with one another. However, the spattering of lower BAR ratings in more recent history hints that the water conflict is growing with the pressures of development.
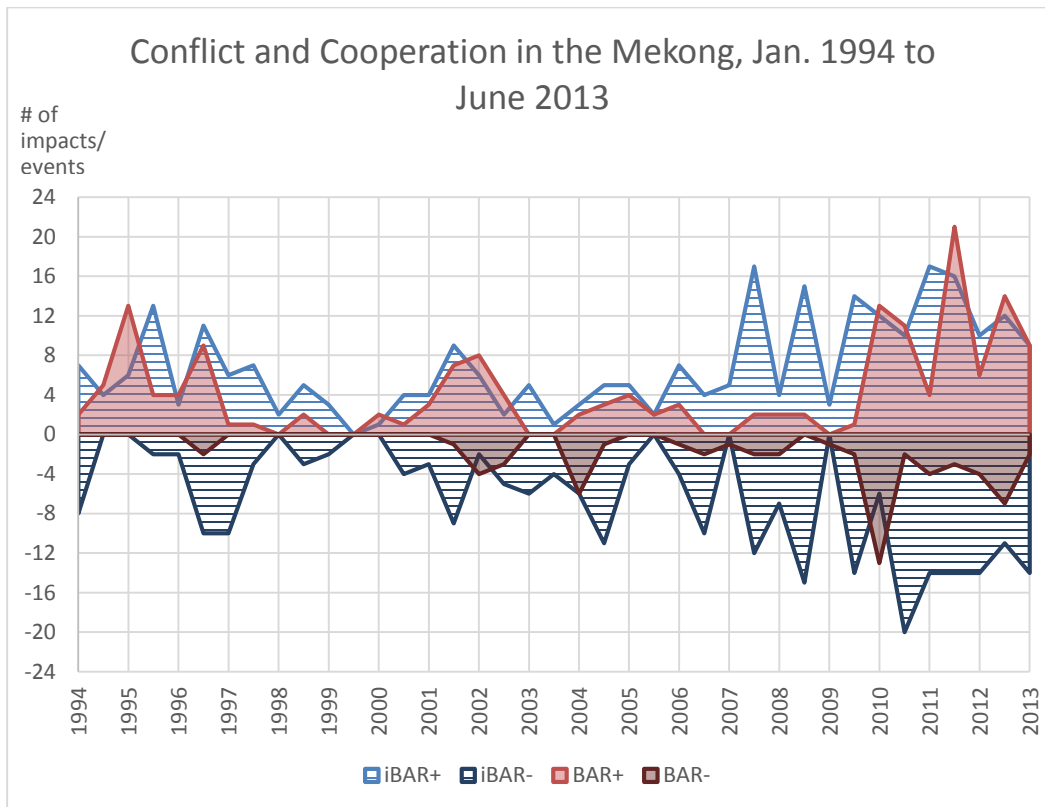
Figure 32. iBAR and BAR Mekong Code Frequencies: Jan. 1994 through June 2013. Note that, on the positive (cooperative/needs-affirming) end of the scale, spikes in cooperative events preceded spikes in discussions of positive impacts, but over time, the dialogue became more proactive in discussing impacts (both positive and negative) before cooperative or conflictive events happened. Also note that the level of conflict does not match with the rate of needs-deterring impacts projected in the basin.

Within each six-month time bin, I took counts (frequencies) for both the BAR and iBAR of the number of positive- cooperative or needs affirming and negative- conflictive or needs deterring- events/impacts. I plotted them together (Figure 32), with negative event/impact counts shown as negative counts and positive event/impact counts shown as positive counts. Again, you can see the ramping up of events towards the end of the timeframe. In the BAR scale, there is especially an uptick in cooperative events.

Across the time period, there are several instances where counts of positive BAR events are associated with similar rises in positive iBAR impacts. Interestingly, in the 1990s, the impacts (iBAR) increases lagged behind the positive BAR event spikes, but after 2000, the iBAR spikes happen in the time bin (six months earlier) than the BAR

spikes. This could suggest that the media's role has changed from reporting after-the-fact on outcomes to a more proactive role of voicing of concerns and perspectives that proceeds official acts of cooperation or conflict by the countries.

Is there a relationship between stakeholder participation/collaboration and environmental justice outcomes?

Events

Through my interview data, conference, and panel notes, I found very little evidence of any participation happening before a decision.[18] In fact, I only found three of my events that referenced stakeholder participation in the initiative, but each was associated with only a very low count of iBAR impacts (Mekong sustainable hydropower initiative- 3, Environmental Considerations for Sustainable Hydropower- 3, and MRC climate change initiative- 1). Thus, coding all of my events by level of participation and comparing outcomes against one another, as I had intended, proved not to be possible.

Interviews & Conference/ Panel Notes

When asked about participation of basin stakeholders in decision-making processes, most of my interviewees provided a country-by-country breakdown. Thus, I organized the statements about participation in my notes into bins for each country. I also captured general statements about participation, and together with the country-specific data, grouped these statements (notes) into themes of level of engagement, when/who, political will, capacity, and fear.

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[18] The conference was a participatory activity, but it was not linked with any particular decision or policy outcome. Rather, it was a forum for research and general discussion about the Mekong's water-energy-food (WEF) nexus, cooperation, and climate change.

Table 13. Interview, Conference, & Panel Note Themes Relating to Participation in the Mekong Basin, by Country.

Cambodia

- Political climate is changing, but consultation is mostly meaningless: communities are given the wrong info in the wrong languages. Asked yes/no with no info about costs
- Dams built before EIA finished
- CCP lost elections in all districts surrounding Lower Sesan 2, but that has not changed the outcome
- Cambodia is demanding to participate
- In Cambodia, people sleep
- Cambodian public servants are genuinely concerned about effects of Don Sahong, but they can't speak out because it would go against their own country's policy about dam building (i.e. Lower Sesan 2)
- Cambodians are demanding to participate, moving forward slowly (not as organized as Thais)

Laos

- Propoganda pushing hydro
- Workshops not meaningful because everyone knows you can't speak against the government's plans, great consequences, disappearances of agitators
- No conversation, locals are unaware of their rights (question about whether that is deliberate)
- Laos is scared of participation, but the current system of polarization and protests is bad for saving face
- Laos vehemently denies the influence of NGOs (do not want to recognize their legitimacy/say)
- In Laos, people glance around nervously [when you ask their opinions].
- Vietnamese and Lao citizens are afraid to speak out. The countries use the decide-announce-defend (DAD) method.
- Xayaburi: Information sharing, villagers said it shouldn't be called participation.

Thailand

- Thai people sued (Xayaburi) for right to participate
- Thailand is the most open [politically, of the MRC countries]
- in Thailand, people know their rights a bit better
- Thailand is the most open, requires public hearings
- The people can sue the government and Prime Minister

Vietnam

- Huge shift to consulting NGOs, but still not communities
- Vietnamese and Lao citizens are afraid to speak out. The countries use the decide-announce-defend (DAD) method.
- The guys in the delta are very concerned about sediments; the guys in Hanoi keep funding more dams.
- Some hydroprojects in Vietnam were stopped by public pressure.

Table 14. Interview, Conference, & Panel Note Themes Relating to Participation in the Mekong Basin.

Level of Engagement

- Vietnamese and Laos use the decide-announce-defend (DAD) method.
- Locals not involved in the dam plans- or resettlement agreements, get forced into "crummy" deals- new careers (e.g. from fish to frogging, but have to pay for water; slash and burn to rice farming, but then have to irrigate)
- People have mostly zero say in decisions
- Thailand requires public hearings

When/Who

- Vietnam- huge shift to consulting NGOs, but still not communities
- Usually men because of language issues
- Late stage involvement
- Location of participatory events mean only the powerful can be involved - no dissemination back to community members

Political Will for Meaningful Participation

- Laos is scared of participation, but the current system of polarization and protests is bad for saving face
- Laos vehemently denies the influence of NGOs (do not want to recognize their legitimacy/say)
- Xayaburi: Information sharing, villagers said it shouldn't be called participation
- Cambodia- political climate is changing, but consultation is mostly meaningless: communities are given the wrong info in the wrong languages- asked yes/no (about a dam) with no info about costs
- Laos- propoganda, pushing hydropower

Capacity for Meaningful Participation

- Thai people sued (Xayaburi) for right to participate
- In Thailand, people know their rights a bit better
- Thailand is most open, requires public hearings - the people can sue the government and Prime Minister
- Laos- no conversation, locals are unaware of their rights (question about whether that is deliberate)
- Knowledge of challenges (among the basin population) is increasing, but capacity to act is still low
- Without the ability to visualize and understand consequences, the communities cannot debate or deliberate or express their fears
- Cambodians are demanding to participate, moving forward slowly (not as organized as Thais)
- Some hydroprojects in Vietnam stopped by public pressure

Fear

- Vietnamese and Lao citizens are afraid to speak out.
- Laos- workshops not meaningful because everyone knows you can't speak against the government's plans, great consequences, disappearances of agitators
- In Lao, people glance around nervously [when you ask their opinions].

Summary

This chapter consisted of two sets of results: semi-quantitative results of the iBAR analysis of Mekong news media between 1994 and 2014 and qualitative themes stemming from semi-structured interviews, plus conference and panel notes and observations. The iBAR analysis revealed several EJ trends regarding how Least Developed Countries and communities are affected by water management in the Mekong, and it also revealed the varied impacts of different types of events as well as the influence of institutional capacity on needs-related outcomes. The qualitative analysis added depth to the conceptualizations of each type of need as they are experienced in the Mekong. It also revealed themes about institutions and participatory processes and roadblocks to environmental justice in the Mekong. The following chapter (Chapter 7) will discuss these results and their implications in greater detail.

Chapter 7: Discussion

Thus far, we have explored through the literature the world of water conflict and cooperation as they relate to environmental justice. I introduced the iBAR and described a mixed-method approach including archival event data, interviews, and observational notes from the Mekong River Commission International Conference and Save the Mekong Coalition panel discussion. In the previous chapter, I detailed the results related to each of these methods, and in this chapter, I highlight themes and expand on the significance of those results, particularly focusing on their significance for the Mekong.

From the event analysis, I identified several themes and trends. In this chapter, I discuss disparities between Least Developed Countries (LDCs) and communities, the impact of needs-affirming initiatives, the impact of Mekong institutions based on population and type of needs, the difference between events with and without formal institutions, the impact of dams, the similarities and differences between the Basins at Risk (BAR) and Integrated Basins at Risk (iBAR) events, and the manner of the international community's engagement in the Mekong.

Next, I explore the significance of the results of my interviews and observational notes. I propose a Corruption-Enclosure-Face nexus to explain the web of factors that prevent environmental justice from being actualized in the Mekong Basin. I discuss a right hand/left hand problem, wherein basin countries exhibit schizophrenic and self-harming tendencies. Next, I discuss the tension boiling over unenforceable institutions, followed by an exploration of the way NGOs and civil society are rising to fill the void. Finally, I discuss the role of financial institutions in the basin.

Jumping ahead, Chapter 8 puts all of these themes in context of one another. It revisits my research objectives, evaluates the significance of the iBAR, and proposes recommendations for practitioners who wish to use these results to craft better water management practices in pursuit of environmental justice.

Events Themes

This section expands on the results pertaining to the event (news article) analysis of the Mekong Basin between 1994 and 2014. The first eight themes pertain directly to the iBAR results discussed in Chapter 6, and the ninth- final- theme ("Too Many Cooks") is a

qualitative one I observed in my review of the news articles that was not captured in the formal semi-qualitative iBAR analysis nor the qualitative interview/observational analysis; yet, I included it out of interest and pertinence to other themes and Mekong water politics more broadly.

Least Developed Countries vs. Communities

In the Mekong, there is an unfortunate trend where vulnerable countries, particularly Laos, are meeting their needs, particularly external esteem needs (i.e. development) at the expense of the needs of vulnerable basin communities. This is especially apparent when one looks at the graph of iBAR outcomes related to dam projects, divided by impacts on Least Developed Countries and communities. The recent smattering of high iBAR ratings (especially iBAR +5 and +6) for LDCs is counterweighted by low iBAR ratings (especially iBAR -8 and -9) for communities.

This trend suggests that if you are a vulnerable country, you can take matters into your own hands to meet your needs. This is exactly what Laos is doing by becoming "the battery of Southeast Asia." By pursuing development goals despite regional disapproval, Laos is further exercising its need for sovereignty (iBAR +5). However, meeting one's needs- even if you are a vulnerable country- at the expense of communities and regional cooperation will not lead to true positive peace. Rather, Laos's approach steps on the backs of the more vulnerable in an attempt to climb out of Least Developed Country (LDC) status, and it risks the loss of negative peace in the basin by creating an atmosphere of political tension.

Figure 33. Photo. School children play under a waterfall near Banlung, Cambodia. Photo Source: Watson (2014).

Intentionally Needs-Affirming Actions/Decisions Affirm Needs

If you are a water practitioner who wants to facilitate communities in meeting their basic needs, your best bet is to initiate a project which has the goal of affirming a given need. For communities, research/data sharing, fisheries, irrigation, and water for sanitation and health (WaSH) initiatives were associated with positive iBAR impacts only, as was conservation (besides one misguided dolphin conservation effort that disenfranchised the local people). While the underlying motive of those conducting these projects in the Mekong may not have been to help the community- it may have been to sway votes or to achieve a conservation goal- the fact that these projects focused specifically on the needs of communities meant that those communities received, or would receive, positive impacts.

It is important to remember here that the iBAR codes are made from claims and proposed effects as well as stated effects, so we may well have a biased picture of the results of these projects. It is a well-known human tendency to avoid promoting our failures. However, with the exception of the misguided dolphin project, there were no news articles, no detractors decrying cons of these initiatives.

Mekong Institutions Lift Everyone Together

There were almost no iBAR impacts of institutions solely on communities (one data point) or countries (one data point). However, the picture changes when looking at vulnerable countries alongside other basin countries. For instance, the MRC was not associated with any direct benefits to Cambodia or Laos alone, but it was associated with needs-affirming impacts for Cambodia alongside Thailand and Vietnam. Analyzing the institution-linked impacts on vulnerable countries including the notion that their neighbors could benefit as well, 95.5% of institution-linked impacts were needs-affirming.

This suggests that institutions like the MRC are not- at least according to the claims in the media- working under any type of affirmative action to benefit the most vulnerable of their members, but they are providing at least some needs-affirming benefits to vulnerable countries as a function of serving the group.

It is important to mention, however, that a recent major critique of institutions like the MRC and Mekong agreement is their failure to prevent harm to vulnerable countries. They provide some needs-affirming benefits, but they do not prevent needs-deterring events from befalling vulnerable countries or populations. It is not in their programming or authority to do so.

Mekong Institutions Work for Some Values

When iBAR event data for institution-affiliated events was compared against other, non-institution-affiliated events, it was apparent that Mekong institutions excel in affirming a specific set of needs, namely: transcendent (iBAR +1), knowledge (iBAR +4), external esteem (iBAR +6), and security (iBAR +8) needs. Institutions are good, in the Mekong, at affirming environmental concerns, of building knowledge about the river resources, at promoting development, and at working on issues like droughts and floods that affect the security of member countries.

They have not grappled as well with the more qualitative values: spiritual needs, cultural needs, or social needs. Notably, social needs include inter-country relationships, the facilitating of which is one of the primary goals of the Mekong River Commission Secretariat. Yet, that was not something that came up frequently as an alleged outcome of MRC activities.

Institutions Perform a Little Better

Contrasting the iBAR outcomes for institution-present and institution-absent research/data sharing, conservation, and climate change initiatives, I found a significant difference between the two, with the institution-present events producing higher counts of transcendent (iBAR +1), knowledge (iBAR +4), external esteem (iBAR +6), and security (iBAR +8) outcomes. The most significant difference was in affirming external esteem needs, which was substantially higher for institution-present events than for institution-absent.

In these iBAR event analyses, I used a stricter definition of institution- defined as an international agreement or governance structure- to match that of the Basins at Risk project. However, institutions can be universities, NGOs, civil society organizations, national or local laws, or financial institutions. I suspect that a broader interpretation of institutions would show more marked trends on the positive side of the iBAR scale.

Dams are Worse for Downstream Needs

This is another installment of "research stating the obvious," but like "needs-affirming events affirm needs," it is still helpful to see the trends in some kind of systematically meaningful way. When divided into Lower Mekong and all-basin groupings (which included China and Myanmar, but potentially Lower Mekong countries as well), the iBAR impacts of dams are largely positive for the latter group and mixed-to-problematic when looking at iBAR impacts for the Lower Mekong countries. I.e. In the Lower Mekong, there are many more negative iBAR ratings covering a broader set of needs.

The Changing Impact of Dams on Private Industry/Financiers

Dams are good for private industry and for countries and financing institutions hoping to get a toehold in the region and a piece of the development action. This is expected and visible in the Mekong event data. However, in the very recent past, dam detractors are attacking the reputation of those who fund dams that will allegedly be socially and environmentally devastating. This contrasts the purely affirming role of dams for external esteem needs (i.e. status) with threats to that same need.

Positive Peace and Negative Peace: Not in the Mekong

Comparing counts of cooperative/conflictive and needs-affirming/needs-deterring events over time showed an interesting pattern in the Mekong. Often, rises in the number of cooperative events (negative peace) occurred alongside spikes in the numbers of needs-affirming (positive peace) outcomes.

However, to have positive-peace, there must be the absence of injustice- defined in the iBAR as alleged needs-deterring outcomes. Yet, in the Mekong, there were several large upticks of injustice during periods characterized by predominantly cooperative events. While 72.4% of BAR events were cooperative, the iBAR showed only 52% needs-affirming outcomes in the same nineteen and a half year period between January 1994 and June 2013.

Interestingly, after 2000, the spikes in iBAR ratings (both positive and negative) happened in the six-month period prior to the spikes in cooperation/conflict events, suggesting that the media is taking a more proactive role in voicing multiple perspectives during the build-up to official state-level action. While this trend is less severe in the conflict events, it still suggests that a ramping up of discussion of injustice in the news could be followed by state-level conflict. It is a trend worth investigating in other basins. On the positive side, a ramping up of discussion of needs-affirming activities could be the opening of a policy window for state cooperation.

Figure 34. Photos. A woman panning for gold on the Mekong near Luang Prabang, Laos, and fish traps near the Don Sahong Dam construction site. Photo Source: Watson (2014).

Too Many Cooks

Sometime around the mid-1990s, the global community decided that Southeast Asia was stable enough for development, which precipitated a gold rush for Mekong resources and development opportunities. Many institutions sprang up at once: the Mekong River Commission, the Greater Mekong Subregion (GMS), the Asian Development Bank, and the Association for Southeast Asian Nations (ASEAN) were just a few attempts to organize Mekong development. Players like Japan, South Korea, and the European Union all offered annual summits for cooperation between Mekong countries and their countries, individually. Essentially, there were too many cooks in the kitchen, proposing separate but semi-overlapping visions for the region, each hoping to gain associated contracts and profits. The following quotes, pulled from newspaper articles, illuminate this trend and the chaotic atmosphere it created in the region:

- "Australia is moving to sharply expand its economic assistance to Southeast Asian countries, partly in hopes of spurring a rebound of its own sluggish economy." - June 14, 1994[19]
- "During the past year the Japanese government took a cautious approach to regional economic reconstruction, comprehensively studying projects and taking time to carefully work out plans for the orderly extension of aid. We hail this approach, but when we consider that many countries are competing to win suitable projects for economic aid, the government's attitude seems too cautious." - June 14, 1994[20]
- "South Korea has already invited ministers from the six Mekong countries to a conference in March to elaborate on their current plans. At the press conference on Thursday, [Malaysia's Minister of International Trade and Industry] agreed with media comments that the 10 Asian nations gathered in Chiang Rai were already an "informal" East Asian Economic Caucus, a Malaysian pet project... [S]he said she was opposed to institutionalising the two-day Asia-Europe Meeting, which will begin in Bangkok on March 1. She said there was already a "proliferation" of structures, like the Asia-Pacific Economic Forum, World Trade Organisation and Asean Free Trade Area. Formalising the Asia-Europe Meeting would 'dissipate our limited resources'." - February 17, 1996[21]

[19] The Daily Yomiuri, June 14, 1994, Can Japan compete in newly rising Indochina? BYLINE: Hiroshi Hori
[20] The Daily Yomiuri, June 14, 1994, Can Japan compete in newly rising Indochina? BYLINE: Hiroshi Hori
[21] The Straits Times (Singapore), Mekong growth to be discussed with Europe, February 17, 1996 Lee Siew Hua in Chiang Rai

- "Planners and businessmen from the six countries which make up the GMS forum- and big contractors in Singapore, Japan, Europe and the United States -would have no doubt about the potential of a region that holds 225 million people... The problem, as summed up in Kunming, is the bewildering web of planning agencies which, far from allowing the Mekong to flow, has tied it up in knots... Worthwhile efforts, all. But something has to give. Some of these units will have to go out of existence, or be absorbed, before any sense can be made of action plans and the funding found." – September 7, 1996[22]
- "These days, [the Mekong River Commission] has also found more players on the field, which can create immense synergy and, perhaps, a certain amount of duplication plus competition for precious funds. Among others, the Manila-based Asian Development Bank has stepped in with its own Mekong initiative and Asean is creating frameworks for its participation in the golden region. Times have changed, and the sometimes, conflicting demands of member-countries for water use dramatise this fact." – September 8, 1996[23]
- "The four-decade-old MRC group has survived the Vietnam war, civil war in Cambodia and the Laotian war of independence. It now plans to turn the Mekong region into the next growth area. However, eight rival bodies have sprung up to develop the area, posing competition to the MRC and duplicating the work it has done." - November 20, 1996[24]
- "Demand for power, water, transport and communications may soon transform a hitherto sleepy part of wide-awake Asia. The Mekong is now attracting so much interest that a real problem is emerging of too many international bodies competing to develop it." – December 5, 1996[25]
- "Entrepreneurs and investors from around the world are eyeing the countries along the Mekong River with growing interest. Until a few years ago, Laos, Cambodia, Myanmar (Burma) and Vietnam roused little curiosity in international investment circles. But, now, plans for more than US$40 billion in projects are on the drawing board, with many more to follow." – December 5, 1996[26]

This created a lot of confusion in those early years, and it may have, ironically,

undermined a comprehensive basin development strategy and facilitated the

piecemeal, country-centric approach that has characterized the development in the

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[22] The Straits Times (Singapore), Quiet flows the Mekong, September 7, 1996
[23] The Straits Times (Singapore), 100 ongoing projects to give area a boost, September 8, 1996
[24] Business Times (Singapore), Mekong panel to kick off US$ 200m project studies, November 20, 1996
Harish Mehta
[25] THE AUSTRALIAN, December 5, 1996, Financial benefits to flow from river region development BYLINE: CISCA SPENCER
[26] The Financial Post (Toronto, Canada), December 5, 1996, DAILY EDITION, Mekong River region a hot new growth area, BYLINE: Catherine Wheeler

2000s and 2010s. Though the dust has settled on the initial rush for influence, there is still evidence of countries vying for positions of power in the Mekong. For instance:

- "Clinton held talks with foreign ministers of Mekong nations such as Thailand, Laos, Cambodia and Vietnam on issues such as cooperation in the fields of environment, health and education, as well as the establishment of a partnership between Mekong River Commission (MRC) and Mississippi River Commission (MRC). The two measures taken so far show that US policy towards East Asia integration has changed from previous wait-and-see manner to active participation, setting up a regional cooperation mechanism based on bilateral ties. " - August 3, 2009[27]
- "Japan and China have found themselves competing for influence when it comes to development of the Mekong area, implementing their own plans regarding the building of transport corridors via the construction of roads, bridges and tunnels. ...Also of importance is cooperation with the United States. The administration of U.S. President Barack Obama has placed importance on strengthening its ties with Asian nations. In July, the United States held its first-ever ministerial meeting with four Mekong nations in Thailand--Myanmar being the only nation excluded from the forum." - November 8, 2009[28]
- "Hungary and many countries in the Danube basin have long experience in water and river management, which Thailand and countries in the Mekong basin could learn from. Hungary sent representatives to the Asia-Pacific Water Summit in Chiang Mai last month and invited Thailand to join the Budapest Water Summit in October to continue the dialogue and exchange views on water management." - June 6, 2013[29]

This modern manifestation of the "too many cooks" problem looks a little less obvious on the surface, but it is still the same game: strategic diplomacy with an eye to economic ties and potential preference for contracts. Not to say that this is entirely bad; in fact, it is an example of mutual benefits that can occur both within and beyond the basin. Even beyond the purely economic motivation, these institutional ties can highlight environmental justice affirm a broader set of needs- if the intention is set. However, the economics-driven, individualistic, Wild West version has and will continue to trample the most vulnerable people in the basin.

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[27] BBC Monitoring Asia Pacific – Political, August 3, 2009, Chinese party daily notes changes to US policy in East Asia
[28] The Daily Yomiuri(Tokyo), November 8, 2009, EDITORIAL; Japan, China, U.S. can play joint role in Mekong
BYLINE: Yomiuri
[29] The Nation (Thailand), June 6, 2013, Hungary, Thailand agree to cooperate on water management

Interview/Conference/Panel Themes

Corruption-Enclosure-Face (CEF) Nexus

    I entered this research with a naïve expectation that what we need to do to achieve environmental justice in transboundary water management was craft institutions- agreements, NGOs- that are sensitive and attentive to the array of needs and values of basin populations. While the event evidence does show that projects targeted at affirming certain needs purportedly help communities, I realized very quickly through my ground-truthing interviews and observational data that the content of an agreement or institution is only one factor in whether communities see any benefits or participate meaningfully in the decision-making or implementation processes. There is a whole set of other variables at play, and in the Mekong, this includes what I deem the Corruption-Enclosure-Face (CEF) Nexus.
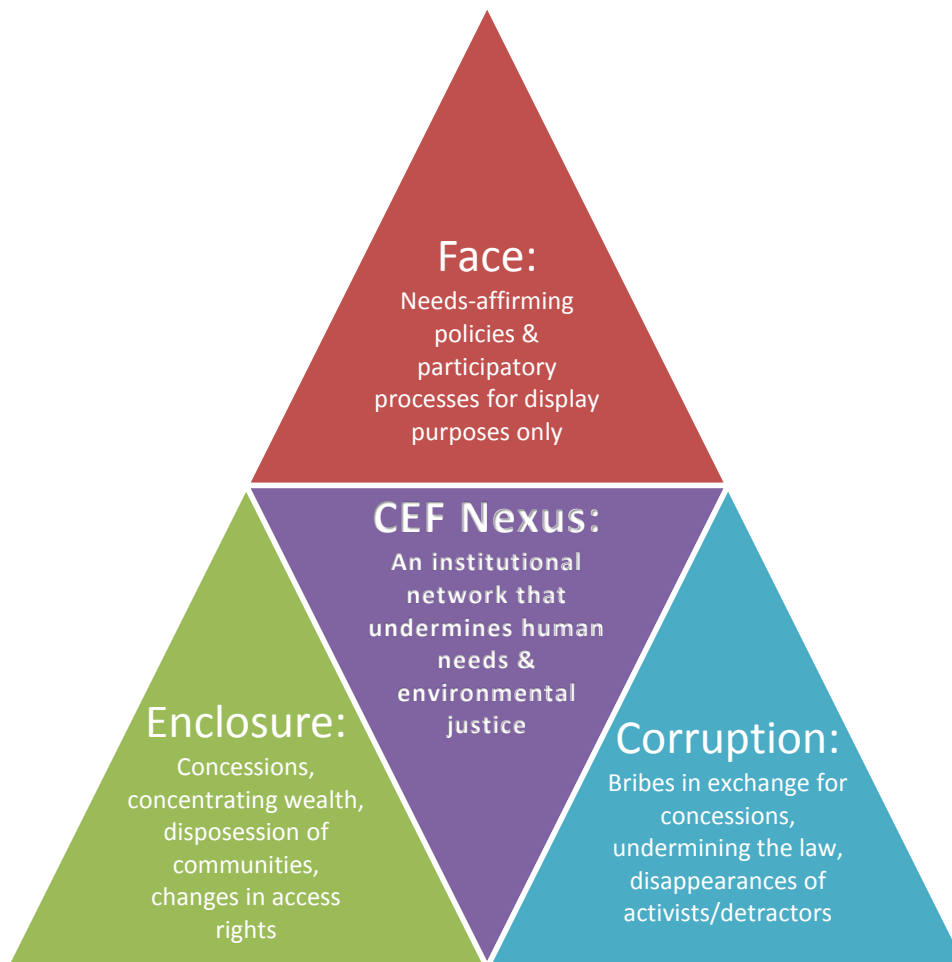
Figure 35. The Corruption-Enclosure-Face (CEF) Nexus.

Figure 35 shows the elements of the CEF nexus. Face represents face-saving, a topic that came up again and again as a cultural and political value in Mekong countries. The countries and decision-makers want to look good: developed, state of the art, diplomatic, democratic.[30] They know they need to look good if they want to attract investors and maintain aid. They do not want to be seen as corrupt or repressive. However, according to my interviewees, they also do not want to be swayed from development objectives, particularly because these objectives contribute to face-saving.

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[30] Notably, in other basins, "face" might have a completely opposite manifestations, wherein governments want to receive mutual benefits from cooperating with their neighbors, but politicians do not want to be associated with that cooperation because hating the neighbors is a national unifier. Future research should address how this manifestation of face-saving interacts with the other elements of the CEF Nexus.

For instance, if a country needs to show GDP growth to get aid and decides that the best path to grow the economy is through hydropower, it likely would not want to be stopped by social or environmental concerns, particularly if the decision-makers truly believe that the hydropower development will ultimately produce the most benefit for everyone.

Corruption, the bottom-right piece, is the keystone. Corruption means that environmental rule of law is not being fully realized. Particularly, my interviewees listed examples in which key elements of the United Nations Environment Programme (UNEP) definition of environmental rule of law- namely accountability, transparency, liability, and fair enforcement- are weak. A corrupt politician or bureaucrat- in the absence of accountability and transparency- can say one thing and do something entirely different. He or she can commit to a social/environmental sustainability process to save face, but implement it corruptly to procure the desired outcomes.

For instance, an official could interview community members who do not understand the implications of a project, who are not educated about their rights, and who are fearful of opposing the government due to the disappearances of activists and others who speak out. Then, the official could provide his or her own translation services. Without accountability and transparency, the official could reach out to a friend or business partner to serve as a representative of the community, pay a bribe, and have him speak for his district and provide the desired public participation support of the policy or project. Ultimately, without strong environmental rule of law, the public participation process can be manipulated to make inequitable decisions look like they have broad support. One quote from a 2006 news article about Nam Theun 2 dam in Laos captured the suspicion surrounding the authenticity of the public participation processes:

> "In Sop Hai, a 49-year-old woman, who gave her name as Fong, said she hoped to be able send her six children to school after resettlement, and to grow vegetables on a plot promised by the government. Still, a government representative monitored and helped to translate all interviews, which yielded no statements of dissent." – *Dam project brings Laos cash and controversy, I. Gatsiounis, International Herald Tribune, March 16, 2006*

Corruption is also a key element of enclosure, the process discussed by Santasombat (2011) wherein communities are disimbedded and planning becomes more centralized. In my interviews, this often came up in terms of "land grabs" and "water grabs" by which the government would sell off large parcels of land via concessions or contract large hydropower development. According to my interviewees, this is how some politicians concentrate wealth in one place- making it much easier and more lucrative to benefit privately from public environmental goods and services. Enclosure, finally, ties back to face-saving because enclosure produces the kinds of big projects and big income-production initiatives that make a country look successful, particularly when success is defined narrowly as economic growth. .
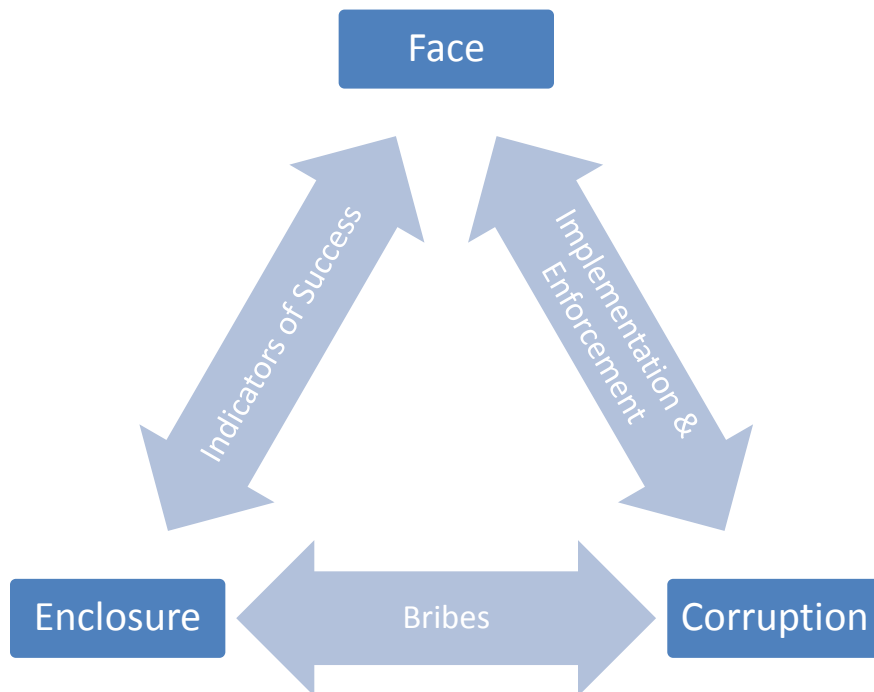
Figure 36. Interactions within the CEF Nexus.

Figure 36 illustrates the processes by which the CEF nexus works. These processes are also the leverage points where practitioners can consider interventions to break this

damaging cycle. Suggestions for practitioners are discussed in Chapter 8, but are also expanded upon here.

The CEF nexus is a sticky web in which needs-affirming laws and institutions become snagged before they can bring needs-affirming (or in this case, prevent needs-deterring) impacts to communities. A "good" law or agreement will not be enough if it is subverted in its implementation. Increasing environmental rule of law- including adequate, implementable laws, access to information, meaningful public participation, accountability, transparency, liability, fair enforcement, and a commitment to human rights- are needed if this web is to be broken. How, though, can one establish rule of law until a country has reached a point of development where it has the capacity to enforce rule of law? It is a catch-22, visualized in Figure 37.

Change Indicators

is needed to stop

Env. Rule of Law

Corruption

via development, builds capacity for

Penalties, Dispute Res.
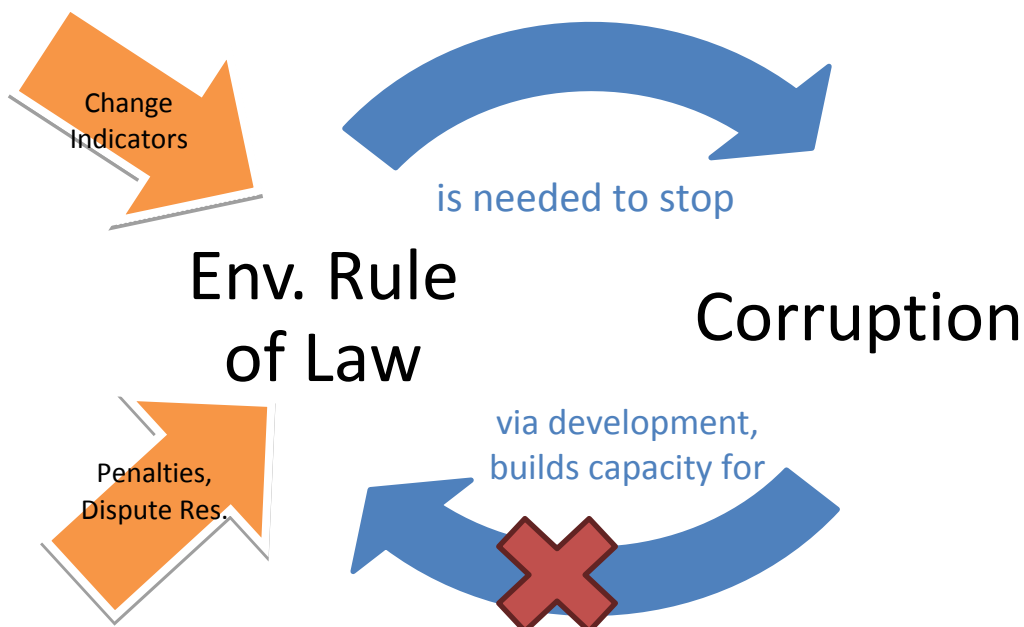
Figure 37. The Catch-22 of Development, Rule of Law, and Corruption, Plus External Leverage Points to Break the Cycle.

However, this Catch-22 is not a closed loop system. Corruption is not the only way for a poor country to develop. However, countries and financial institutions funding these countries and development projects within them need to remember that corruption is an incentive. Implementing needs-affirming projects with meaningful participation requires changing that incentive structure: changing the indicators of

success, adding checks on implementation (to avoid the Sop Hai problem above), and penalties/dispute mechanisms will change the incentive structure to achieve stability and stability-linked rule of law while taking corruption out of the loop. These, combined with increasing environmental rule of law, will help break the CEF nexus, allowing needs-affirming, environmentally just policies to get through to the people who need them.
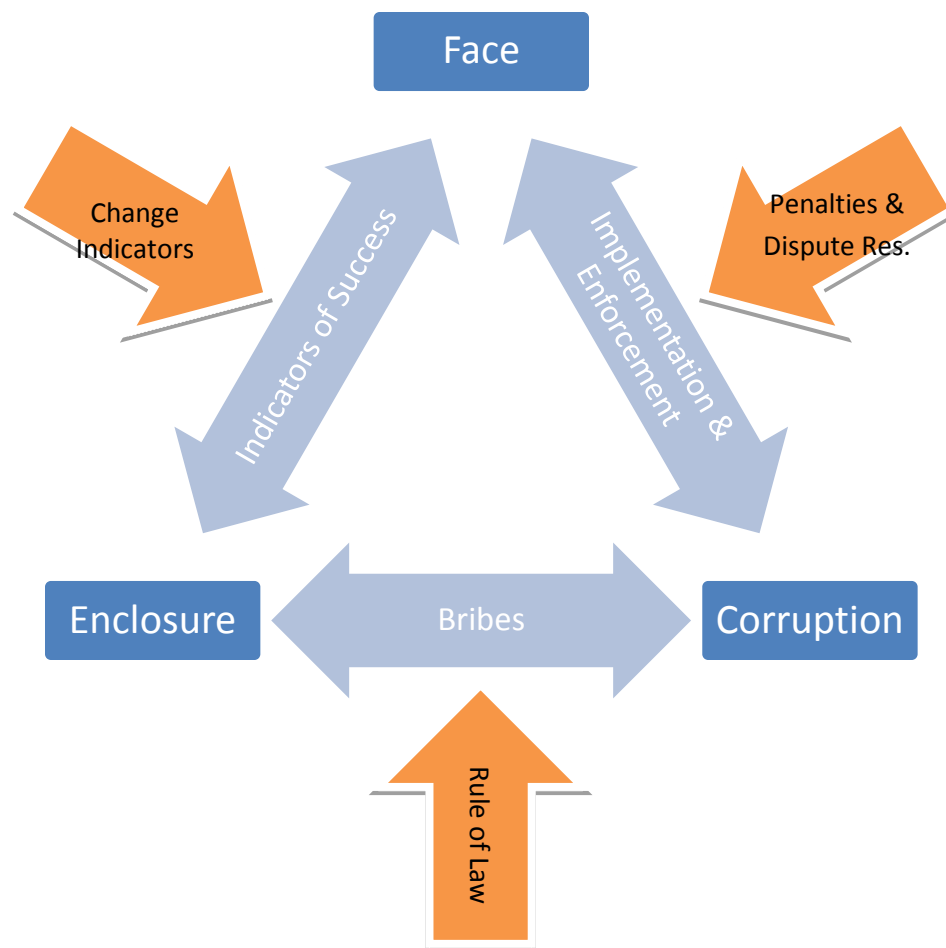
Figure 38. Leverage Points for Interrupting the CEF Nexus.

Right hand/Left Hand

The right hand/left hand problem is different from face-saving, where countries intentionally do not do what they say. Rather, this theme represents countries' schizophrenic views on development. On one hand, water and environmental agencies

are studying the potentially devastating effects of dams- on, say, delta farming or Cambodian food security and income from fisheries, but on the other hand, their central governments or state-run energy suppliers are continuing to fund those same dams.

Another permutation of this trend is scientists from an affected country holding their tongues on opposing a neighboring country's dam development, because their government does not want that same criticism turned against domestic projects. For instance, Cambodia has a strong incentive to oppose Don Sahong dam, a project just across the border in Laos with potentially massive effects on Cambodian fisheries, but opposing Don Sahong might draw fire on Lower Sesan 2, which is projected to have devastating effects on sediment flows to the downstream Vietnam Delta.

Of course, injustice anywhere is a threat to justice everywhere, and wiping out Cambodian fisheries will hurt Laos just as damaging the delta will ultimately hurt Cambodia. Yet, because the decisions are made diffusely, with water ministers in the MRC, energy ministers making backroom deals with contractors, and Hanoi funding dams while the delta cancels them, the right hand/left hand problem continues. The best way to address it is to get everyone on the same page: to have a comprehensive planning strategy that includes all of the relevant players- all the hands- in one room.

Unenforceable Institutions

A recurring theme in my interviews was the powerlessness and/or unwillingness of institutions to prevent injustices in the Mekong Basin. The ASEAN Declaration for Human Rights, Mekong transportation hazards agreements, Cambodia's Natural Resource Assessment Law, and China's Overseas Investment Environmental Protection Law were all cited as being weak and falling short of their mandates. The reason for this lack of implementation could, in this case, be either corruption or lack of capacity, but the problem cited by the interviewees is lack of enforcement. There are no mechanisms to penalize countries who fail to follow the law/agreement. In other words, the institutions have no teeth.

In the Mekong, many people- especially NGOs and civil society organizations- are skewering the MRC and calling it ineffective and broken because of its lack of enforcement surrounding the prior consultation process. However, the MRC Secretariat

insists that its role is to serve the member countries, not tell them what to do (or infringe on their sovereignty); its role is to build cooperation capacity by generating shared information and building understanding among members. While RBOs were associated with positive (needs-affirming) results for vulnerable countries, they did very little related to communities.

Furthermore, detractors criticize the MRC for its inability to prevent negative basin impacts. They say it needs teeth. Particularly, Laos proposed contesting narratives- that the prior consultation process was complete for Xayaburi, that the Don Sahong dam was not a mainstream dam- that subverted the institutionalized prior consultation process. To those frustrated with the prior informed consent process, the MRC member countries' unwillingness to relinquish any sovereignty to give the Secretariat enforcement power is a portrait of the individualistic, country-centric development characterizing the basin.

With no official channel to challenge Laos' narratives within the MRC institutional framework, countries were left with only the option of diplomatic pressure on Laos's face-saving. This achieved minor gains: delays on Xayaburi and opening the Don Sahong project to a modified version of prior consultation. However, if these dams would ultimately be as destructive to basin populations, particularly poor, indigenous communities and vulnerable countries, as detractors insist they will be, the diplomatic approach has been insufficient in stopping this projected harm.

Filling the Void

When negative impacts are expected to befall basin countries, including vulnerable countries and communities, and the governance structures in place are either corrupt or unenforceable, what do people do? In the Mekong, they have started exploring other avenues to achieve their goals and/or to achieve better justice outcomes. We see this in the rise of civil society, particularly in Thailand, with the suing of the government over Xayaburi dam, and with the questions about bilateral treaties, sanctions, and other options that come up in the conference and panel Q&As.

This is not a trend that should be taken lightly, as protests and growing civil unrest triggered by water may reach a tipping point and turn into full-blown violence or revolt.

Take, for instance, this anecdote about disenfranchised communities and the Xayaburi Dam:

> "One participant at a forum about the dam late last month at the Foreign Correspondents' Club (FCCT) in Bangkok warned that the level of anger in riverside communities about the likely negative impacts on villagers' livelihoods was at boiling point. 'People [at a meeting in Chiang Khan] were talking about coming to Bangkok to burn down state buildings, if this dam and others go ahead - that is how strong the feelings were,' a Western resident warned." *–Thailand could destroy the Mekong River as we know it, The Nation, March 29, 2011*

Technically, burning down state buildings would not be state vs. state violence, but it would most certainly be water violence. It is also not outside of the range of possibilities: while I was in Bangkok in March of 2014, there were protests shutting down whole quadrants of the city, and two grenades were thrown into crowds of protestors. Though Thailand offers some opportunities for its citizens to check the government, these allusions to violence are cause for concern if citizens feel disenfranchised by the political process. Notably, violent protests and government overthrows are bad for saving face.

NGOs are also playing a role in pushing for environmental justice in the absence of international institutions with enforcement capacity. Specifically, my interviewees discussed several initiatives by which NGOs were building capacity to participate among vulnerable Mekong communities, including: education about rights, field trips and dam education, trainings, and video documentation projects (to amplify the voices of marginal peoples). This will not replace the role of institutions like the MRC, but it creates a baseline of democratic capacity so that communities have a channel to resist the CEF nexus.

Figure 39. Photo. Asian Elephants at the Elephant Nature Park outside of Chiang Mai, Thailand. Photo Source: Watson (2014).

Financiers' Leverage

Interviewees and conference attendees both cited the importance of private industry and the donor community in influencing Mekong Basin outcomes, both generally and pertaining to communities. While I am sure some would disagree, one of my interviewees cited Nam Theun 2 and Theun Hinboun dams as European-funded projects with extensive social sustainability plans, suggesting that these projects had at least marginally better outcomes than others. This suggests that financiers with an eye for justice can exert pressure on developers and countries to reduce the needs-deterring aspects of development projects. Perhaps they could even steer countries away from the most harmful projects by incentivizing them to pursue others instead.

Notably, there is some concern that too extensive requirements will drive Mekong countries to give up on European or World Bank financing, turning instead to neighboring countries like China who will not impose the same restrictions. This argument came up several times related to the Nam Theun 2 dam in Laos:

- "Bank staff also insisted those studies be conducted in 'an open, transparent, participatory process' -- unheard-of in Laos. 'It was like a guest

walking into your house and telling you to rearrange your furniture,' said a senior Laotian hydropower official."- August 13, 1997, *World Bank proceeds cautiously on Laos dam Proposed hydroelectric project seen as test case of the financial institution's drive to transform itself into a more democratic, ecosensitive and entrepreneurial force*, The Globe and Mail (Canada)

- "The Nam Theun 2 project has been in the planning stages for about a decade and a half. While the project will now go ahead with World Bank financing, the Laotian government has made it clear that it doesn't need such headaches: for future projects it will look to a neighbor, probably Vietnam, for help." - *Unloved, but Not Unbuilt, Henry Fountain, The New York Times, June 5, 2005*

Likewise, my interviewees noted that countries employ the argument that social sustainability plans will scare away investors. Thus, an idea proposed at the Mekong summit's international conference was to 1) make a business case for why the private sector should adopt social and environmental standards, and 2) involve the private sector/donor community from the beginning.

Chapter 8: Conclusion

While the previous chapter discussed my research results by data source and theme, this chapter explores each of my research objectives and shows how those themes fit together to tell a cohesive story. I discuss how water relates to environmental justice, talk about the utility, pros, and cons of the iBAR method, summarize the conclusions about the role of institutions and the role of participation, and draw conclusions based on my results for water resources conflict and cooperation practitioners.

Figure 40. Photo. Rice terraces near Sapa, Vietnam. Photo Source: Watson (2014).

Better understand how water relates to social/environmental justice

The environmental conflict thesis of Political Ecology focuses on the distribution of environmental costs and benefits and the underlying socio-political factors driving those distributions (Robbins, 2004). Using the iBAR as a prism held up to the Mekong, I produced a panchromatic picture of environmental justice in the basin. The event impacts, displayed over time as they varied by event type and as they varied by affected

population, showed how multiple variables converge to produce justice and injustice in the river basin. Specifically, some of those variables include:

- Countries vs. Communities: Sub-national communities experience a much higher proportion of negative (needs-deterring) impacts compared to vulnerable countries. At least some of these negative impacts for communities come from the vulnerable countries, stepping on the backs of the poor to rise out of LDC status. As one of my interviewees mused, "Why do the poor always have to sacrifice?" Is the only/best pathway for a country to rise out of poverty to sacrifice its vulnerable people and the vulnerable countries and peoples living downstream?

- Hydropower: Hydropower is a class of its own- affecting vulnerable countries and communities in a significantly different way than other types of events. These impacts are very different for vulnerable countries than they are for communities (as described in the previous bullet point).

- Needs-Affirming Initiatives: Research/data sharing, fisheries, irrigation, and water for sanitation and health (WaSH) initiatives were all associated with only positive impacts on communities, as were conservation initiatives with the exclusion of one project. This shows the needs-affirming potential of targeted initiatives and initiatives that include elements targeted at communities.

I proposed that a more comprehensive definition of water cooperation should be inclusive and sensitive to both positive and negative peace outcomes. My comparison of the BAR and iBAR data shows that negative peace alone does not capture all the conflict and cooperation in the basin[31]. Including positive peace data alongside our traditional negative peace data shows that, at least in the Mekong, there are winners and losers, and the level of cooperation does not necessarily reflect the level of environmental justice in a basin.

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[31] Do negative peace (absence of violence) and positive peace (absence of structural violence) coexist or conflict?

Develop a transferrable approach for assessing justice/injustice in transboundary basins

I realized as I completed my study that Integrated Basins at Risk (iBAR) is not an appropriate name for my scale, at least not yet. This study was only a first step in testing the tool. If the tool were applied in all transboundary basins, it could be used to identify the most vulnerable basins where most needs-deterring events are happening. A researcher or practitioner could even focus on a particular subset of needs, say, if they were particularly interested identifying the most culturally vulnerable basins. Likewise, practitioners interested in environmental justice could hone in on basins where impacts on vulnerable countries and/or communities are highest. The iBAR scale, thus, has potential to live up to its name.

However, there are several important caveats to consider before applying the iBAR events methods in other basins, including:

- The iBAR is a great example of how data can be misleading if wielded incorrectly. Remember that each of the "events" could be only plans, and the iBAR "effects" are all alleged effects, most of which are projected/possible future effects if a plan comes to fruition. It would be a mistake to look at iBAR data as actual, on the ground effects happening at the time the codes occur.

- Likewise, the iBAR captured claims of alleged effects even if the article author only brought up the claim to argue against it. A reoccurring example of this is an article talking about the negative downstream effects of China's dams, but adding an offhanded comment that China claims its dams will help its neighbors by reducing flooding. China's claim was coded as an iBAR +8, even if the author in the next sentence lampoons that claim with a description of how the natural hydrograph is actually very important in places like the Vietnam Delta. Rather than wading into the murky waters of deciding which claims were "valid" and which should be discarded, I captured them all. This is important to remember when looking at the data.

- The iBAR events capture alleged effects, but what about counter-claims that effects will not actually happen? Some examples of counter-claims include a

country saying its dams will have no downstream impact or an NGO claiming a dam will not produce economic benefits as expected due to over-forecasted power demand and sedimentation. The iBAR- as it is now- has no way of capturing negating claims, though they exist as part of the discourse.

- The iBAR ratings are the result of constructions in the public discourse, which can be influenced by soft (ideational) power and hegemonic concepts, as described by Zeitoun & Warner (2006), Forsyth (2008), Trottier (2014), and Farnum (2014). For instance, the news media may parrot discussions of the water-food-energy (WFE) nexus, driving up iBAR ±6, ±8, and ±9 rating counts, while ignoring impacts on culture, recreation, knowledge, or other needs- though these might be an important part of the reality people experience on the ground. The iBAR events data will not capture impacts if no one is talking about them.

- Along the same thread, my Mekong iBAR events did not capture several needs that were revealed through the interviews. It excelled particularly at capturing the iBAR -8, -1, and +6 level impacts, while interviews provided a more detailed picture of the iBAR -7, -2, -5 impacts. This highlights the importance of a mixed-method approach that includes ground-truthing to learn more about what each need looks like in a particular basin and what events have relevant impacts on those needs.

Finally, I developed a portion of the iBAR events scale pertaining to participation that I was unable to use in this study, as my news articles alluded to no participation before decisions were made, and only mentions of nominal participation after-the-fact for only a small subset of events. I did not have the right type or enough information, thus, to conduct analysis. However, I intended a participation scale to be part of the iBAR process, and it may prove much more interesting and useful in other basins. Thus, the instructions for this method is included here:

Note the level of participation various stakeholder groups have in water-related decisions. For this scale, use the 'public participation spectrum' from Dore et al. (2010) detailed in Table 1. Code stakeholder participation on a scale from 0 to 5, with: 0= no stakeholder involvement, 1= inform, 2= consult, 3= involve, 4=

collaborate, and 5=empower. Apply this scale to the participatory process in general (rather than divided by each particular stakeholder group), but also collect qualitative data about who was or was not at the table. Code this qualitative data (about who was engaged in the multi-stakeholder process) by Likert scale (e.g. highly representative = no major stakeholders excluded, fairly representative = reports of one or two minor groups being excluded, fairly unrepresentative = reports of significant groups or several minor groups being excluded, highly unrepresentative = cherry-picked, major stakeholders or blocs excluded). Keeping track of both level of participation and level of representativeness will help future researchers test the hypothesis that meaningful, representative participation is related to more just (higher iBAR) outcomes.

Glean insight on the role of institutions in securing justice and human needs

In my study, I explored the role of Mekong institutions as they related to environmental justice.[32] The iBAR method allowed me to hone in and examine claims about justice impacts, both positive and negative, on basin communities. My on-the-ground approach of conducting interviews and taking notes at both the conference and panel expanded on what I gleaned from the event data, providing more depth and assertions of relationships between institutional variables and outcomes. The following list summarizes potentially transferrable themes about the role of institutional variables for transboundary water justice:

- Over the 21-year period in the Mekong, institutions- under the stricter agreement/IGO definition- were associated with positive, needs-affirming outcomes for vulnerable countries, but not in a targeted way. Rather, institutions benefited vulnerable countries along with their less-vulnerable neighbors in a "lift everyone up" approach, particularly for certain needs (e.g. knowledge, iBAR +4).

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[32] What institutional factors are associated with positive or negative human rights impacts related to water?

- Regardless of the content of an agreement or the stated intent of an initiative, the corruption-enclosure-face (CEF) nexus, at least in the Mekong, is a confounding factor in achieving EJ. The CEF nexus provides insight on the degradation and marginalization thesis of Political Ecology (Robbins, 2004): it answers the why and how questions related to the countries' and the global market's roles in Mekong environmental change.

- While in some cases, laws/agreements/institutions are ignored, in others, countries lack the capacity for proper implementation or enforcement. This was illustrated in the discussions of Cambodia's Environmental Impact Assessments (EIAs), where the government could not- even if it wanted to- conduct EIAs at the speed of incoming project proposals.

- There is a problem of schizophrenic positions on water management within national government, particularly between water and environment ministries and energy ministries/institutions. Countries both study and warn of the impacts of dams on their own population and environment while also funding dam-construction. This links closely with the "Too Many Cooks" theme in Mekong management, where a Wild West, individualistic, bilateral approach dominates regional attempts at water governance.

- The role of river basin organizations (RBOs) is contested. Mekong institutions were successful at affirming needs, but unsuccessful at preventing needs-deterring activities. Enforcement and other sovereignty-infringing measures are outside of the MRC's mandate.

- However, even if the role is to build cooperation and knowledge, basin countries and populations need somewhere to turn when they think injustice is impending. If the RBO cannot fill this role, civil society and NGOs will step in and perhaps take more conflictive approaches such as litigation. The resistance to environmental change shown by NGOs and civic groups in the Mekong highlights the environmental identity and social movement thesis of Political Ecology (Robbins, 2004). As communities increasingly see their identities and

livelihoods threatened (iBAR -5, -8, -9) by development decisions, there has

been a concurrent rise in public outcry, protests, and other forms of resistance.

How do we define what is or is not an institution? Is international governance body
or agreement/treaty too narrow a definition when looking at multi-scale outcomes? For
the iBAR event data, I used the BAR, basin-level conceptualization of institutions as
international agreements or governance bodies, but the interview and observational
data suggested that, for a multi-scale approach, a broader set of institutions should be
considered, including NGOs, academia, national and local laws, and civil society
organizations, for example.

It would be interesting to re-evaluate the iBAR impacts using a broader definition of
institution. I suspect that a broader definition would amplify the trends we saw. For
instance, I expect that most of the research/data sharing, conservation/climate change
impacts (predominantly positive) I coded as institution-absent would be considered
institution-present under a broader definition that included universities and NGOs, thus
amplifying the positive influence of institutions overall in the basin.

However, I suspected, reading through the 543 news documents my search
generated, that I did not capture the full range of institution-related projects and
impacts, especially at a broadly defined level. It seemed like I gathered anecdotes here
and there, but not a comprehensive overview. Confirming my suspicions, my
interviewees mentioned offhand projects that appeared nowhere in my news article
review. Thus, future research about broadly-defined institutional impacts should
consider a) revising the search terms for a more targeted approach, and/or b) turning to
grey literature like NGO reports to gather a richer picture of these projects in the basin.

Glean insight on the role of participation in securing justice and human needs

When I started this research, I thought I would be able to analyze varied justice
impacts by participation level and representativeness.[33] I hoped to identify some
evidence that cooperation is linked with substantive outcomes. I learned very quickly,

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[33] Is there a relationship between stakeholder participation/collaboration and EJ
outcomes?

however, that cooperation- particularly cooperation before a decision is made- is not happening in the Mekong. Rather, the "DAD method" -decide, announce, defend- is the closest thing to cooperation, especially at the national level (i.e. involvement of affected communities in decisions about projects affecting them).

In the Mekong, involvement happens at a late stage, after the decisions are made. Essentially, communities have no say about whether they will be negatively affected, and they may only get nominal say in how bad the effects will be. Even these after-the-fact participatory processes are problematic in several ways:

- A culture of fear exists around opposing government decisions. Activists disappear, as do everyday people- proclaimed non-activists- who speak about the negative impacts of national development projects on their lives and livelihoods.

- The communities lack capacity to meaningfully participate. Many- especially outside of Thailand- do not know their rights. Others have no prior knowledge or understanding of what a dam looks like and how it will affect their lives. This lack of knowledge makes it impossible for meaningful participation. My interviewees suggested that perhaps the governments would like to keep it this way.

- Those who are consulted are usually men, and usually the richer or more powerful members of the community, including local politicians who can be bought off (bribed) by the government. The information provided to these non-representative community representatives is often not disseminated back to the rest of the community.

My interviewees (and the panelists) asserted that the countries arguably do not want meaningful participation in projects: They do not want to be stopped from their course of development, which is why they fear before-the-fact participatory processes and the involvement of NGOs in the region. In many cases, the decision-makers may feel that development, and development now (without lengthy delays associated with public and NGO pushback) is the best and clearest path towards poverty alleviation and a brighter future for the country. However, an aversion to meaningful participation may

also be a manifestation of the Corruption-Enclosure-Face nexus. If participation would stop a dam, the opportunity for private/individual benefit from the concessions and profits would be lost. However, participatory processes and social sustainability are needed to save face, so countries have an incentive to implement shallow community engagement (too little, too late) as a guise for authoritarian decision-making. Meaningful participation that happens prior to a decision will require interrupting this nexus and building trust in the value of public participation in the development process.

At the international, basin-wide level, institutions like the MRC represent a participatory process, and my event iBAR results suggest that institutions are associated with positive outcomes, particularly in certain areas like knowledge generation and natural disaster prevention/mitigation. Thus, institutional capacity as a manifestation of participation is a positive force for securing justice and human needs for nations. However, their influence on preventing harm (negative iBAR impacts) on vulnerable countries and especially communities is absent- in line with their lack of mandate to infringe upon sovereignty of member states.

In sum, looking at an institution like the MRC as democratic engagement of basin countries, the results of participation are good, but not good enough. The participation is not representative. China and Myanmar are not members of the MRC, and NGOs and civil society are sequestered to conferences rather than given a voice in the process. Likewise, power-wielding financial institutions (and donor countries) are left on the sidelines, making back-room deals and proceeding without heed to a process in which they are not directly engaged.

Furthermore, the MRC process- without enforceability- means that while the process can produce positive impacts, it cannot prevent the negative ones. This is a reflection on participation more broadly: without a broad, all-encompassing set of stakeholders at the table, and without participants' willingness to relinquish a little sovereignty in the name of the process, participation can produce positive results, but it cannot prevent unjust outcomes from decisions made outside of the process.

Draw conclusions/recommendations to better achieve human needs

Through this research, I wanted to explore factors associated with positive and negative justice outcomes, in hopes of identifying strategies and leverage points for practitioners who want to increase positive peace in transboundary water resources management. From my event and on-the-ground data, I gained several insights (summarized above) and recommendations relevant for transboundary water managers and practitioners:

- Dealing with the corruption-enclosure-face nexus
    - Practitioners interested in water justice must work to implement environmental rule of law at multiple levels of governance, and they must include enforceable penalties and dispute resolution mechanisms so that corruption can be officially challenged and combatted.
    - To resist the enclosure dispossessing vulnerable populations, practitioners need to reconsider the metrics by which the success of a country is measured. Measuring economic growth as a main consideration for continued funding sends the message that development is the top priority, and this can be at the expense of the poorest and most vulnerable.
    - In sum, regardless of the actual content of what a country says it will do (via agreement or otherwise), it should be measured based on its actions. A country should look good when it actually achieves environmental justice, and it should both look bad (and potentially be penalized) when corruption and enclosure dispossess the people. Breaking the incentive structure will break this injustice-maintaining nexus.
- Capacity to enforce social/environmental justice provisions
    - Practitioners need to make sure justice-related initiatives like Environmental Impact Assessment mandates or social sustainability plans are linked with the proper funding, training, and capacity-building to actually carry out the mandates.

- Unifying the left and right hands of governments, correcting the "too many cooks" problem, and building a more inclusive process for representative policy approaches
    - Practitioners must strive to bring the energy ministries, national power companies, and financiers (including both the national banks and international financing community) to the table in some manner.
    - An official channel for NGO and sub-national (civil society) participation needs to be integrated into basin-level institutions. Without a channel to participate within the process, the representativeness of the process (and outcomes) will be degraded, and these groups will either find other platforms.
    - If civil society groups/communities lack capacity, however, they have to rely on the government making decisions in their best interest. However, without meaningful public participation, it is unlikely that decision-makers can fully appraise the costs and benefits of a decision, particularly as they relate to more qualitative values such as spiritual, cultural, and social values for water. Thus, knowledge-generating basin activities should include educational campaigns that build understanding of rights and the impacts of various projects, plus build capacity for participation among basin residents.
- The enforcement role of river basin organizations (RBOs)
    - This is a sticky subject, because RBOs only have the authority given to them by the countries. However, practitioners interested in justice should strive to encourage basin countries to agree to dispute resolution terms within transboundary water institutions.
    - These dispute resolution/enforcement terms could be broad, or specifically focused on certain aspects of the agreement. For instance, in the Mekong, countries have not agreed to allow other countries to infringe on their ultimate decisions about dam construction. However, an enforcement mechanism could be in place to penalize countries who

begin dam construction before the MRC Secretariat declares the prior
consultation process complete.

While my study did not find a silver bullet to cure the world of water-related
injustice, these themes provide insight into the institutional factors working behind the
scenes to allow injustice to continue. By bringing these themes to light and identifying
leverage points, this research can help practitioners more conscientiously pursue justice
in international river basins.

Conclusion

There is a real, physical Mekong River out there. There are laws of science and
physics that dictate how that river ebbs and flows with the hydrologic cycle. One can
model its quantity and quality. But that is not the Mekong discussed within this
dissertation. It is, but only tangentially. The Mekong contained within these pages is the
Mekong of our imaginations, of our collective political and cultural narratives. And, as
we found, those narratives do not always match: they are continually being challenged
and contested. These competing ideations about the Mekong, or about any water
resource, can have profound influences on human interactions with water, which in turn
have a myriad of implications for a person's ability to meet his or her basic human
needs.

If we are operating in the world of ideas and not physicality, then our pool of
stakeholders greatly expands. A dam doesn't just impact the ability of the fishermen to
meet their needs; it also impacts the way recreational tourists from Europe and
environmentalists from San Francisco meet their needs. Building a bridge won't just
change local interactions with the river to move goods and services; it also gives
Australia the chance to build its reputation and employ its engineers while bouncing
back from an economic recession.

Competing narratives are a major channel through which power is negotiated and
contested in transboundary water interactions. The London Water Research Group
highlights the way actors can exploit water interactions through soft power by reframing
the situation and controlling the narrative that influences other actors' perceptions
about the problem and each other (Zeitoun et al., 2011). Likewise, the constructivist

approach suggests that conflicts are actually struggles over ideas, and ideologies are shaped by the narratives portrayed through multiple channels of discourse (Robbins, 2004). The idea of cooperation itself can be problematic, particularly if we let down our guard and hold too closely to the value judgment that cooperation is inherently good, or inherently sufficient. If we get too comfortable, some really unethical, really unjust activity can slip past our radar as long as it is stamped "cooperation" at the top and contains some of the keywords we expect to hear. The corruption-enclosure-face (CEF) nexus in the Mekong illuminates how cooperation can look good yet fail the people who need it most to meet their most basic needs.

The Mekong is a complex social-ecological system with interactions at and between local, regional, national, basin-level, and global forces. Consider the corruption, the lack of data, and the obscuring of participation processes. The Integrated Basins at Risk scale captured Mekong narratives through analysis of claims in news media, interviews basin stakeholders, and observing the narratives produced and contested in international fora (i.e. the Mekong international conference and the Save the Mekong Panel). It revealed the contesting stories about the costs and benefits of basin activities relating to achieving basic needs in the basin.

Before I started this study, I was comfortable with the water wars/water peace narrative. I felt good knowing that two-thirds of transboundary freshwater interactions are cooperative and not conflictive. But something kept nagging at me: How can it be cooperation if whole groups of stakeholders were excluded from the process/negotiations, as happened with the tribes and First Nations in the 1964 Columbia River Treaty? How can it be cooperation when Sudan and Egypt sign a treaty dividing all of the waters of the Nile for themselves? How can it be cooperation if whole villages are being displaced and disempowered by the "cooperative" construction of dams? If the less powerful, less wealthy, and politically disposessed groups lose their access to safe drinking water or their livelihoods because of "cooperative" decisions made by their countries' leaders?

The theoretical framework of Political Ecology helped me to dissect and reassemble these questions. Essentially, Political Ecology entails "explorations to explain linkages in the condition and change of social/environmental systems, with explicit consideration of

relations of power" (Robbins, 2004). It challenges the researcher to identify sources of exploitation, particularly "where some social actors exploit other people and environments for limited gain at collective cost" (Robbins, 2004). This aligns with the problem of transnational enclosure in the Mekong discussed by Santasombat (2011) and expanded upon in my discussion of the CEF nexus. Finally, Political Ecology's normative orientation- that there are better, less exploitative ways of doing things- allowed me to explore not just problems, but potential reconstructions and leverage points for more just water interactions in the Mekong Basin.

Ultimately, I learned that my previous understanding of cooperation fell closer to "negative peace," where political, economic, and military hostility represented conflict and cooperation was the antidote. However, I learned that a broader definition of peace also included "positive peace"- social and environmental justice. The research, analyses, and discussion included within this dissertation explored the implications of transboundary water management on environmental justice, and it proved a rich area for exploration and consideration among water practitioners- not sequestered from, but alongside our discussions of negative peace. So let's move beyond cooperation, to a new understanding of "water peace" as both positive and negative peace, so that we might work towards reconciling the two and creating a more just world through both our water management strategies and the narratives we construct.
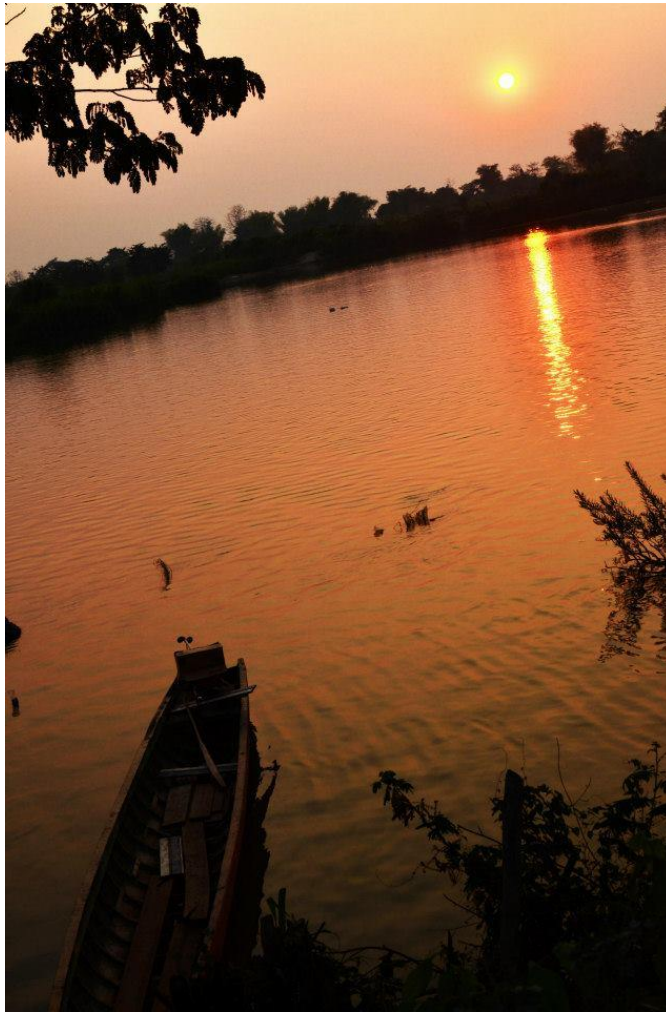
Figure 41. Photo. Sunset at the equinox over 4,000 Islands, Laos. Photo Source: Watson (2014).

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Appendices

Appendix A: The Burn Book, MRC Conference

International Conference on Cooperation for Water, Energy, and Food Security in Transboundary Basins under Changing Climate, Ho Chi Minh City, Vietnam, 2-3 April 2014		
Questions/Comments (Summit Conference)	**Answers**	**Commentary**
(re: involving the International Finance Corporation and private industry/financiers in social sustainability initiatives) Big dams only? What about the role of IFC in small-scale projects?		Smaller dams on tributaries, and their impacts, are coming up in both the dialogue here and in the iBAR event data. The speaker was posing that financiers and private industry need to be involved more so they are incentivized to do better with social and environmental sustainability.
(to Chinese presenters) Will China join the MRC?	We want to enhance cooperation. It's called the "M" RC, not the M-L RC. We have a long tradition in China of calling the river the Lancang.	This is a really poor argument, and I think everyone knew that.

Vietnamese woman: You (Chinese presenters) claim you aren't using water as a weapon, but what about the drought in Lao? Will China flood us when its reservoirs fill up? Any guarantee they won't?

There is clear information that the droughts and floods in the Lower Mekong are not the problem of China. Do you have proof that China damaged its neighbors? No. There are no problems. "What a good host," (referring to the presenter being from Vietnam, the summit host country).

- This demonstrates a trend that came up frequently in the iBAR event data, especially related to the 2010 drought. A lot of people wanted (over the 21 year period) to blame China for both droughts and flooding. In some cases, there was evidence suggesting it was natural variation (e.g. El Niño), but this doesn't preclude some impact from Chinese dams.
- The downstream impacts are difficult to study (one of my interviewees described that they are cloudy and hard to connect with upstream changes), and the Chinese representative uses this against the questioner by demanding proof for her allegations.
- Notably, the questioner is Vietnamese, representing delta fears and delta issues.
- Calling her out with the comment about Vietnam as a host seemed to be a very serious jab, considering the importance of face saving (which one of my interviewees called "The Mekong Way") in Southeast Asian culture.

Chinese journalist: (to Chinese presenter) repeated question about Chinese transparency and China joining MRC, calling out the fake Lancang Mekong differentiation.

Lancang name has existed for 1000 years, already cooperating with MRC, and China has no contribution to sediment issues in the delta

- I was surprised that this question came from a participant who identified as being from China.
- The insistence on zero negative downstream effects runs counter to their presentation's claims about Chinese dams' benefits for downstream countries.

Thai participant: Should we stop trying for multilateral and focus on bilateral agreements instead?

This questions the efficacy of the MRC's ability to affect change in the basin. If the MRC cannot get China (and Myanmar) to join, and if it cannot do anything to prevent unilateral development, would the Lower Mekong countries be better off pursuing other arrangements?

Climate change will lead to pests and disease problems

The iBAR event data also discussed pests, particularly in relation to disturbances in the flood cycle in the Vietnam Delta.

Lao woman: What we're saying doesn't reflect the decision of our full government. Will the report represent a decision?

This could be an example of fear of consequences in a country where there were recent reports of an activist disappearing.

This is a common and necessary procedural question. People want to know why they are here and whether their discussion will lead to any real change. In this case, people may also be worried about how they should represent their opinions, particularly if the reports are including attributed comments that will go back to country leadership.

What is the expectation from this conference?

What is the role of outsiders? Should the European Union, the U.S., Australia, etc. be the ones running the show? This is another important procedural question that speaks to a desire for independence/sovereignty (iBAR ±5).

Why are the track facilitators not from riparian countries?

We need to include flood security in the WEF nexus.

It's included under the Climate Change track.

This demonstrates that floods- and perhaps how hydropower will change the flow regime- are a concern in the Lower Mekong.

Fisheries for both food security and livelihoods were a major topic related to dam development in recent years, as illuminated in the iBAR event data.

Are we making sure we talk about fisheries?

NGO: (re: WWF talk on sediment transport, dams, land subsidence, ecosystems) There are confounding factors in the shoreline.

Chinese participant: (re: WWF talk on sediment transport, dams, land subsidence, ecosystems) How long was the data collection period?

This is a question to challenge the legitimacy of the study, because China doesn't want Chinese dams to be associated with these problems.

NGO: (re: WWF talk on sediment transport, dams, land subsidence, ecosystems) Is there potential for sediment remobilization?

Western reporter: (re: talk on livelihoods and mainstream) Why so little mention of hydropower impacts on livelihoods and resettlement? Why are you playing it down?

Leave it to the media, and a Westerner, to push buttons and ask questions that make people (who are trying to be politically sensitive) uncomfortable. However, this sentiment is the exact reason for the "Save the Mekong" Panel side event; those organizers suspected that this conversation would not happen in earnest at the MRC-hosted conference.

(re: talk on livelihoods and mainstream) Fishing is actually a really important job.

People are concerned that their independence and way of lives will be bulldozed by development (iBAR ±5)

NGO: (re: talk on livelihoods and mainstream) What about the 3S?

A recent study posited that tributary dams, particularly the Lower Sesan 2, will have greater negative impacts downstream than some of the mainstream dams.

NGO: (re: relocating indigenous peoples) ADB already has a framework

This is a call to look for best practices (and better practices) in dealing with hydropower displacements and social sustainability plans.

Lao Fishery Ministry rep: (re: academic and MRC presentations on food security and fish) Is it really fair to say that hydropower is affecting fish? Aren't there other factors responsible?

This purposefully includes the most conservative estimates to show the minimum trends. The figures came from a MRC report. These are very low estimates. There is probably that much loss in Cambodia alone. Plus it doesn't consider the many people who are fishers as a second job.

There were two presentations on the effects of hydropower on fisheries, one by the MRC, and one by an Australian researcher- which he claimed used the most conservative estimates (and MRC data) about potential negative impacts. These were attacked by the Lao representatives, one of which was the session chair, with questions about validity.

Lao Ministry of Energy & Mines rep (chair): (re: academic and MRC presentations on food security and fish) Isn't your study invalid? It's too simple. Won't the market fix these issues?

It is simple but not invalid. Buying food may cause issues if former Cambodian fishers can't afford Vietnamese fish in a global marketplace. If you protect the habitat, you can fish for a century.

Lao has a strong interest in quieting fears about hydropower's downstream effects due to the political tension surrounding Xayaburi and Don Sahong dams.

Lao Ministry of Energy & Mines rep (chair): Academics shouldn't just tell us simple scary facts. It creates confusion to the outsider, and it will be taken advantage of by some groups- not for cooperation, but for the opposite.

This is an attack both on the involvement of outsiders (particularly academics) and on the utility of the studies on hydropower and food security. If the argument "it's wrong" does not work, this is the fallback argument of "it's misleading." He does not want outsiders- especially those with power and money- to be tipped by too much science suggesting the Lao dams may do harm downstream.

Appendix B: The Burn Book, Save the Mekong Panel

"The Journey from Hua Hin to Ho Chi Minh City and the Future of the Mekong River" Panel, Ho Chi Minh City, Vietnam, April 4, 2014		
Questions/Comments (Save the Mekong Panel)	**Answers**	**Commentary**
Western reporter: If you were opposed to the Xayaburi dam, why were you silent when construction started?	Voice comes from the government, not the people.	It was not included in my notes, but I think his question was directed towards Vietnamese and Cambodian panelists- i.e. civil society, but he was asking why Cambodia and Vietnam did not do more to stop the Xayaburi dam.
The delta is a national security issue, so why is there no sense of urgency from top leaders like there is for the South China Sea?		One of my interviewees said (paraphrasing) that "the guys in the delta are very concerned about sediments; the guys in Hanoi keep funding more dams," referencing that the decisions come from different institutions within the government. It is an issue where the right hand doesn't know what the left is doing.
Engineer from EU: Why not look at other basins for advice, like the Rhine?		This is a call for use of best practices and lessons learned, to avoid duplication of effort (iBAR ±4). It could also be perceived as an outsider suggesting that the Mekong model itself after the "better" way that Europeans do things, which could be seen as a threat to regional pride and independence (iBAR ±5).
Engineer from EU: Maybe we need some dams… Dams will impact mangroves, affect wetlands, water quality	The dams are for development, but they are going to hurt the development in the region.	This exchange, between an engineer and a conservationist, fits the parable "if you only have a hammer, everything looks like a nail." Hydropower engineers will see hydropower as a way to achieve positive results, while conservationists see conservation as the path to achieving positive results.

		This was my question. The problem of corruption came up many times in both the event data and my interviews. The answer suggests that needs-affirming institutions must have enforcement (and conflict resolution mechanisms) built in if you want them to actually achieve anything.
If there are good agreements and bad enforcement, how do we fix that?	There are no penalty/enforcement articles in the Mekong Agreement. They rely on good faith.	
Explain the over-forecasted power demand.	Thailand has a historical tendency to over-forecast. They just need improved efficiency and some small scale alternative power. Vietnam is cancelling dams.	Over-forecasted Thai power demand came up multiple times in the event data, as well, in arguments against large hydropower development in Laos (under contracts to sell to Thailand).
Chinese reporter: commented on China's impact on downstream countries, citing some evidence		This was surprising coming from someone purportedly of Chinese citizenship.
Western academic: Dams are everywhere. In the U.S. we're taking out dams, bringing back livelihoods and salmon, remembering the locals.		This could also be perceived as an outsider suggesting that the Mekong model itself after the "wiser" perspective of the United States, which could be seen as a threat to regional pride and independence (iBAR ±5). It also highlights the issue of Western countries telling developing countries that they should not do all the things Western countries did to get ahead.
Western academic: China uses too much coal, and now it is punishing the Lower Mekong by quickly developing hydropower. China needs to be at the table (MRC). Why are they rushing the dam development?		This represents an ever-present anxiety in the Lower Mekong that China is not accountable to any downstream stakeholders. In the iBAR events, some articles even point out that soon, the Mekong will be a "Chinese river," and China will have total control- without any MRC obligations- over the flows to downstream countries.

NGO: If you want to stop Xayaburi, focus on the PPA (Power Purchase Agreement) contract. Drive public attention towards EGAT to get them to postpone terms and conditions for Xayaburi and give more time for studying impacts. Consumer pressure is needed. Support the Thai civil challenge of the PPA. It may be illegal in light of the Mekong Agreement.

The Good Governance Institute is challenging the PPA, and there was a court case submitted by local communities. The court rejected the case, but they are appealing. Because the dam is in Lao, this would set a new precedent for Thai courts.

Thai civil society challenging the PPA is something that came up in the iBAR events. It shows civil society using more confrontational (yet peaceful) methods in the wake of MRC's inaction on Xayaburi.

It is not currently in the best interest of dam construction contractors to do an excellent job with social sustainability or environmental sustainability of their projects. The countries' main focus is on the money, and the social/environmental aspects are seen as hoops that have to be jumped through to maintain appearances for the West in pursuit of economic growth. E.g. Nam Theun 2 had strict World Bank requirements, and the media posited that Lao would likely turn elsewhere for funds in the future.

Ask for assistance from fish ladder experts. Don't rely on the contractor to do a good job.

Chinese reporter: At the summit, China claimed positive downstream impacts of Chinese dams. What is your opinion?

[They claim that there will be reduced low flows and floods] but peaks and flows are good.

The Chinese argument and this counterargument (about the importance of the natural hydrograph for the social and environmental function of the river) come up many times in the event iBAR data, too.

There are still ecosystem impacts even if there is a fish ladder.

In other words, this person is saying "let's not talk about how to make dams better if we should not be building them in the first place."

Hydropower is a valuable source of renewable power, but it must be responsible and mutually beneficial. Some hydro is good. It's a question of scale. You can demand more expensive, more responsible projects: adjust the design, modify the scale.

There is a role for hydropower, but it is not necessarily clean energy. In the Mekong, we need electricity in the dry season most, but that is when dams perform the worst.

These are both insightful points.

Western reporter: There was a 2011 joint communique calling on Lao… Cambodian and Vietnam were considering sending a letter to Thai dam builders (for Xayaburi). Why didn't they send the letter? Four major Thai banks are the main investors. The letter may have raised doubts about the project in the mind of the banks.

No idea why.

The idea of pressuring the Thai banks, as a strategy to get them to pull funding for Xayaburi, comes up in the iBAR event data. They suggest focusing on how Xayaburi's negative impacts will hurt the reputation of the lenders (iBAR ±6).

Depends on political will. This (April 2014) is a crucial time. Thai PM is not even coming to the summit. They could call on 3rd party mediation, but Lao would have to agree to it. If that fails, maybe the donors pull out, maybe sanctions. Vietnam has a lot of power as the third largest investor in Lao power. The ASEAN way is consensus.

Is it time to consider sanctions against Lao?

Like the questions about letters, bilateral agreements, and court cases, this draws attention to stakeholders' lost faith in the MRC. If MRC recommendations carry no weight, stakeholders and negatively affected parties will- as they have here- start exploring alternatives to have their voices heard and achieve their goals.

Chinese reporter: In China, no one believes the results of EIA (Environmental Impact Assessment), but at least we do one. Do they do any in Cambodia?

There is a Natural Resource Assessment Law in Cambodia, but plans (hydropower, mining) go into effect too quickly to complete the assessments. They don't have the capacity to do all of the assessments for the number of projects. They only did one report on Lower Sesan 2. China has an Overseas Investment Environmental Protection law, but never follows through; it just goes ahead with the projects anyways.

This question and the response both demonstrate how Mekong countries may have laws that look like they will have positive social and environmental implications, but in reality, they are not enforced due to either lack of capacity or lack of political will. The laws may indeed be just for show, to earn the favor of Western institutions and potential donors.

Appendix C: Exercises for Practitioners in EJ/Water Ethics

Pandal Basin Simulation Materials[34]

The Pandal basin is a fictitious basin designed for courses in transboundary water conflict transformation. A description of the basin and its riparian countries is included here, and relevant Exercises are included in each chapter to aid in helping students to refine their understanding of the concepts that will be covered. This fictitious basin (described below) and the associated Exercises may be used in training or educational settings to demonstrate the principles of select modules. The fictitious scenario allows abstraction and development of problem constellations beyond real life cases. They allow a greater flexibility in evaluating country interests and problem solutions than already implemented real life examples.

In these Exercises, the instructor/facilitator guides participants in dialogue and negotiation regarding issues in the fictional Pandal basin. Participants should be divided amongst the five states described. In each group, one lead negotiator (representing the head of state) should be identified. The remaining participants in each team may select various ministerial roles, such as (but not limited to) ministers of water, agriculture, urban development, environment, and defense. In a large group, the facilitator may wish to ask some participants to serve as non-governmental organisations (NGOs), international financing institutions (IFIs) such as the World Bank, and/or representatives from the indigenous populations identified in the basin description. All participants should be provided with a copy of the country descriptions, a basin map, and tabletop nameplates that identify their country and role in the negotiation. After each simulation exercise, the facilitator should lead a debrief (out-of-role) discussion among participants to discuss observations and take-away messages from each activity.

Below are the basin and country profiles for the fictional Pandal basin:

Pandal Basin Overview

The Pandal River Basin (PRB) is five riparian countries, Dalik, Ordon, Gandor, Esund, and Panam. The headwaters of the Pandal River start high in the peaks of Ordon's central mountain range. From Dalik, the river flows directly south into Ordon and then southwest into Gandor. Here, the river meets with two major tributaries, the Nortesund and Suresund, which are dammed to form the Gand Reservoir in Gandor. Finally, the river flows south from Gandor to its mouth in Panam. Along the way, the river supports a multitude of uses: transport of logs; irrigation for rice cultivation and floodplain subsistence gardens; fisheries; a large mangrove forest; and drinking water.

Ordon

Ordon is a poor country, with an economy based on subsistence agriculture, primarily rice and timber, which it has traditionally exported without much regulation by the government. Logging activities have led to the construction of a number of roads leading to the Pandal River, which timber companies use to transport logs downstream.

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[34] The following text is excerpted from: Kunjappan, R., Jarvis, T., & Wolf, A. T. (November 2013). *Effective negotiation for international transboundary waters: A skills building course for the Mekong River Commission*. Mekong River Commission.

Ordon's objective is economic growth. Its geographic conditions have endowed it with significant hydropower potential along the Pandal River, a potential that has been as yet unrealized due to the reluctance of private groups to invest under its instable political conditions. However, with its first democratically-elected government now in office, Ordon has been seeking to develop hydropower to export to its neighbor countries. Its population is composed of several different ethnic groups, who have occasionally clashed over access to the country's timber resources. All of Ordon's ethnic groups depend on the Pandal River's water for subsistence agriculture and drinking water. One group, the Suwa, also conducts traditional religious rites along a stretch of the Pandal River. Recently, the country's ethnic groups have united in opposition to foreign investors who keep disproportionate profits from the Ordon's timber industry. Five years ago, a brief civil uprising broke out, threatening to "Occupy Ordon" and overthrow the central government before being resolved with help from the larger regional community.

Additional Ordon Challenges:
- Deforestation is leading to increasing frequency of landslides that threaten Ordon's roads and other infrastructure. On one occasion in 2010, a landslide into the Pandal led to high sedimentation of public drinking water supplies.
- While the Occupy movement in Ordon has quieted, the underlying tensions between the indigenous population and foreign timber corporations remain.

Gandor

To the south of the Ordon sits Gandor, a small, landlocked country situated entirely within the Pandal Basin. Gandor is an economically poor country rich in natural resources, including lush agricultural land, valuable minerals, and a large native fishery,. Through its resource reserves, Gandor is making modest economic gains, moving from raw exports to the construction of factories that produce electronic products. As Gandor has developed, its electricity needs have increased. Gandor has traditionally met its power needs through domestic hydropower production at Gand Reservoir, just downstream of the confluence of the Nortesund and Suresund tributaries, but the combination of growing electricity needs and exhaustion of its domestic hydropower supply has made it eager to import electricity from its neighbors. Gandor's population consists of two predominate ethic groups, the larger of which, the Tulsi, dominate the government and industry in Gandor's burgeoning cities. The minority, the Hrang, reside near Gandor's northern border with Ordon, where they live along the riverbed. There is also a small Hrang population on Ordon's side of the border. The Hrang rely on rice cultivation, seasonal floodplain gardening, and traditional fisheries to meet their subsistence needs. They are also characterized by a higher level of poverty than in the rest of the country as well as political marginalization- which came to light in the 1990s, when the international community intervened in Gandor to stop violence against the Hrang. The impoverished conditions that emerged during the 1990s in Gandor's northern region have created political opposition to the governing democratic regime, which the majority party is eager to contain.

Additional Gandor Challenges:

- The ethnic minority, the Hrang, are threatened by the effects of climate change. Larger floods and longer dry seasons threaten their subsistence agriculture.
- Conversely, large hydropower projects proposed upstream in Ordon and Dalik may flatten the hydrograph that supports seasonal floodplain farming and the large and diverse native fishery. These native fish species, used both as an economic export and as subsistence for the Hrang, are unlikely to thrive without historic wet and dry season conditions.

Panam

Southeast of Gandor sits Panam, a coastal country at the mouth of the Pandal River. Most of the country lies along the Tulgy Sea outside of the basin, divided from Gandor by the Panam Mountains. Previously isolated and economically stunted by civil war, Panam has exhibited surprising economic growth since the resolution of the conflict in 1992. Panam's economy is driven by a combination of subsistence agriculture (primarily rice cultivation), clothing production and exports, and coastal fisheries both at the mouth of the Pandal River and in the Tulgy Sea. To the south of the country, where the Pandal River approaches the ocean, sit a large mangrove forest and fishery, recently expanded as an income-generating project for local women by a large international NGO. To spur economic development, Panam has been seeking to draw ecotourists to the exceptional biodiversity in its northern region, including several species of rare and endangered birds that nest along the Pandal River. As the country farthest downstream in the Pandal River Basin, Panam is very concerned about maintaining a reliable water supply for its fisheries. Flash floods from dams constructed in Gandor have on occasion inundated its fisheries, destroying fish stocks and fishing equipment. Panam has enjoyed a relatively stable democratic government for the last twenty years, and is primarily inhabited by the Klee ethnic group.

Additional Panam Challenges:

- Panam's groundwater is at risk for saltwater intrusion, leaving the Panam government with limited options for drinking water.
- Panam's government is growing increasingly concerned about sea level rise. While there is some high ground along the Gandor border, most of the country lies near sea level. With a sea level rise of +1 meter, most of the habitable land in Panam would be inundated.

Esund

To the south of Gandor and Ordon, neighboring Panam, lies Esund, a relatively wealthy country that contains two significant tributaries, the Nortesund and Suresund, that feed into the Pandal River. Esund's capital lies outside of the Pandal basin, and its economy is centered in large cities with industry, tourism, and service sectors. Esund has a long coastline and a long-established fishery in the Southern Ocean. So far, it has not imposed significant demands on the water resources of the Pandal tributaries. However, the central government has been exploring plans to construct a series of dams on the Esund River in order to generate power for its large coastal cities and to boost industrial agriculture in its western region. The country is diverse, drawing international commerce and tourists. However, a number of ethnic groups who rely primarily on subsistence agriculture inhabit Esund's countryside, and these groups are wary that their traditional practices may be lost in the country's push for industrial agriculture for export.

Additional Esund Challenges:

- Esund, like Panam, relies on groundwater for its coastal urban water supply. Esund's groundwater supply is threatened by industrial pollution and by salt water intrusion related to unsustainable withdrawals.
- Esund's globalized capital draws tourists, many of whom venture inland to see the rainforests surrounding the Nortesund tributary of the Pandal. Esund's governing officials are worried about how to meet their energy demands needed to maintain economic growth without losing their burgeoning tourism industry.
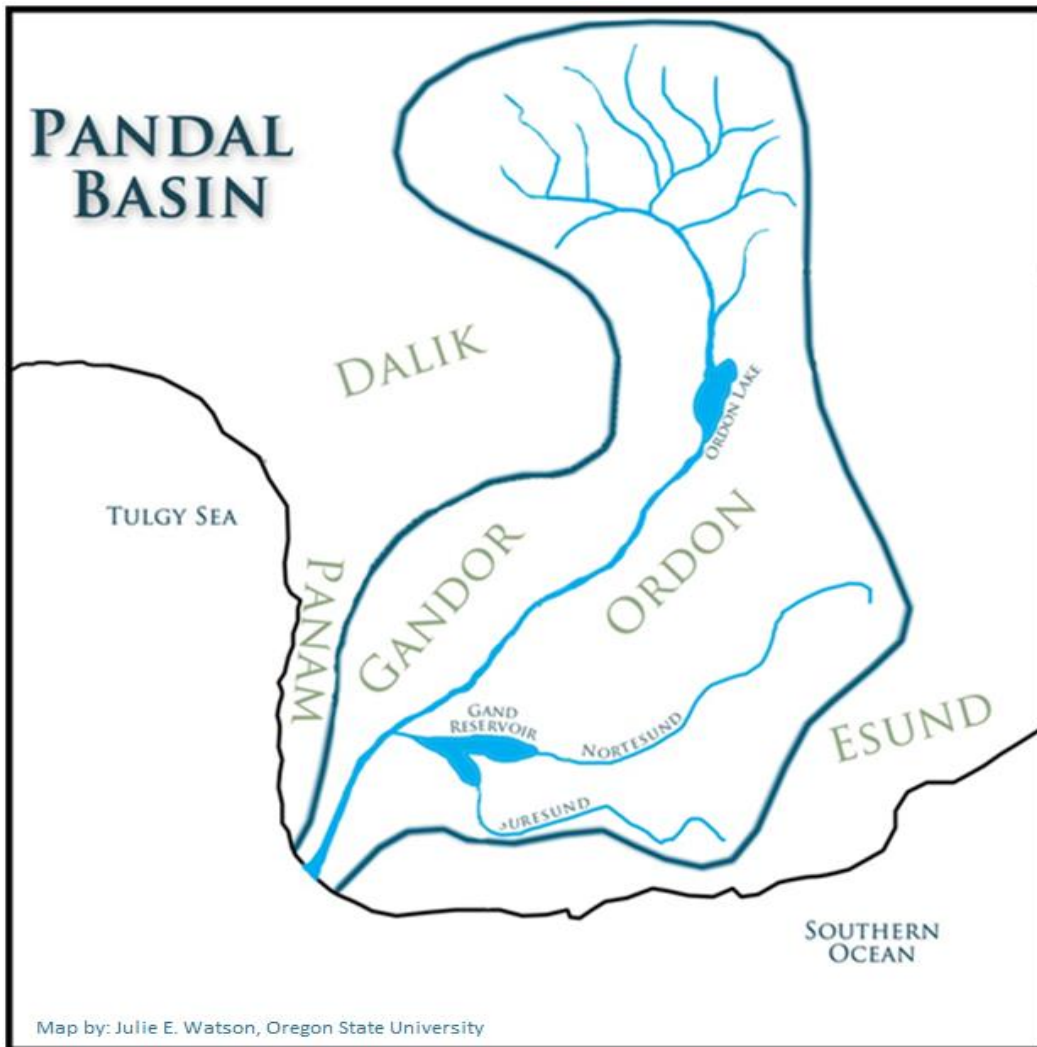
Dalik

In the northernmost headwaters of the Pandal basin, Dalik borders all four of its much smaller neighbors. Dalik is a large, wealthy country still exhibiting rapid economic development. Most of Dalik's population lives in large cities along the Tulgy and in the north of the country, where large industrial fisheries, agriculture, mining, and large-scale manufacturing and industry have sustained a diverse economy. Politically, Dalik has used its economic and military power to achieve its goals in the region, backing a civil war in Panam and supplying weapons to the Tulsi in Gandor in the 1990s in order to procure raw goods and to distract the international community from its massive deforestation and mining operations, which involved relocating many minority ethnic populations. Today, Dalik suffers from high levels of pollution, and it hopes to green up its image by switching from its oil reserves to hydroelectric power. It has already two dams in the Pandal headwaters, and plans to build several larger dams within the next few years. Dalik has not joined any regional agreements or otherwise participated in river basin planning.

Additional Dalik Challenges:

- Dalik is worried that the international community will oppose unilateral construction of dams in the Pandal headwaters. If hydropower production is delayed, the Dalik government is investigating new developments in hydrofracturing, which will make natural gas deposits in the east economically viable.
- Dalik's municipal water supplies in its large cities are contaminated to unsafe levels by mining and agricultural runoff. One political party in Dalik has proposed diverting water from the Pandal River to meet drinking water needs.
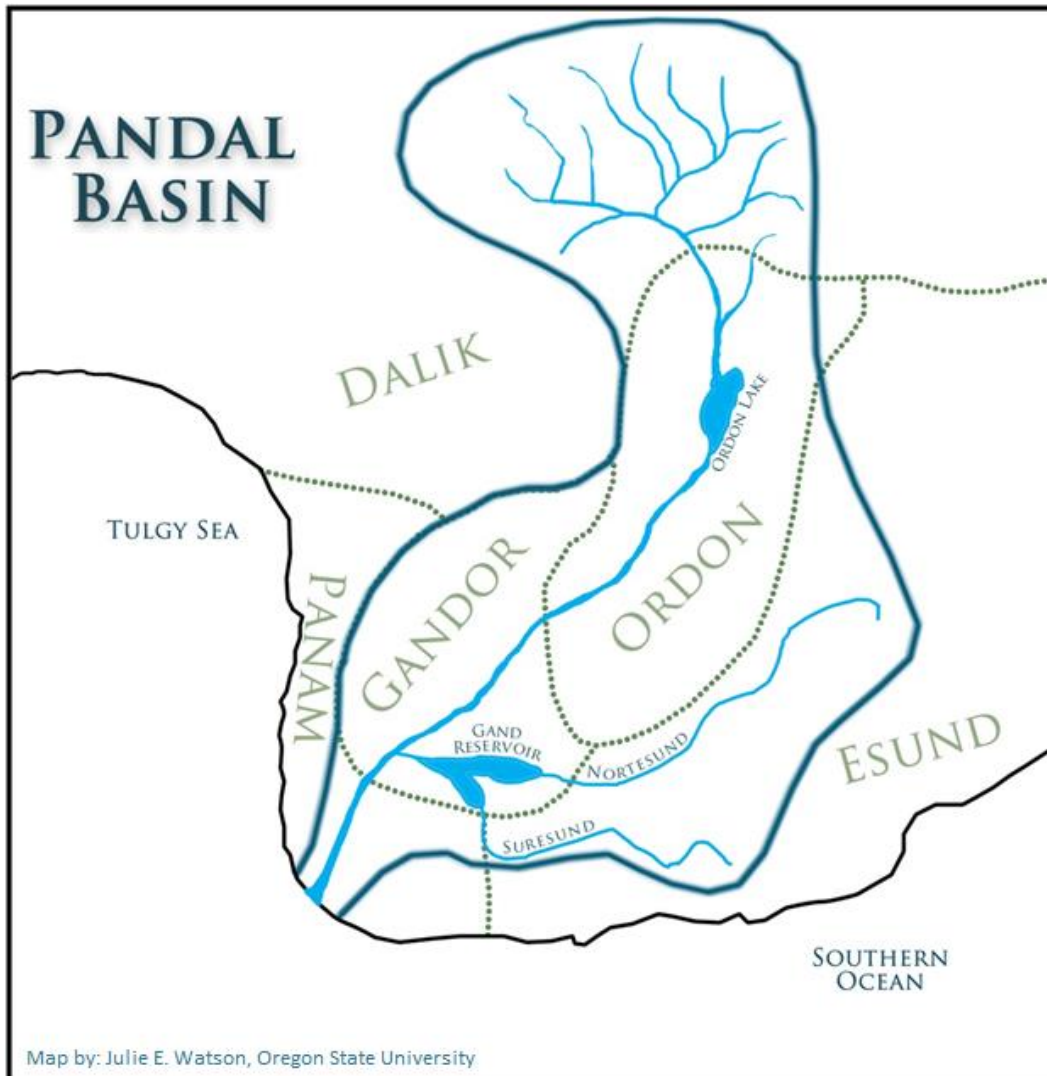
Map of the Pandal Basin with Borders.

Map of the Pandal Basin without Borders.

Summary of Key Issues and/or Interests by State

Ordon	Gandor	Panam	Esund	Dalik
Priority is economic growth	Growing electricity needs	Subsistence agriculture (rice)	Industry & service sectors	Large population
Forestry	Mining	Coastal fisheries	Tourism	Wealthy
Hydropower potential	Agricultural land	Clothing production	Agriculture & irrigation needs	Rapid industrialization
Safe drinking water/sedimentation	Growing number of factories	Mangrove forest with endangered birds	Considering hydropower development	Agriculture, mining, large-scale manufacturing
Indigenous spiritual use of the river	Indigenous riverine interests	Flash floods from upstream dams	Indigenous subsistence agriculture	Pollution and drinking water contamination
Civil uprising	Subsistence agriculture	Salt water contamination of groundwater	Salt water contamination of groundwater	Interested in cleaner energy: hydro or natural gas
Landslides, erosion	Native fishery	Sea level rise	Potential eco-tourism	Two dams in headwaters, more planned

Summary of Key Pandal Basin Issues and/or Interests by State.

Training Exercise: Rules of the Road

This section consists of an activity wherein trainers can teach participants how to open a meeting effectively, plus facilitate setting ground rules and setting the agenda- two opportunities for small negotiated agreements early in a transboundary water negotiation/collaboration setting.

LEARNING OBJECTIVES:
By the end of the session participants will:
1. have experimented with meeting design
2. have practiced opening a meeting
3. have learned a facilitation technique to carefully introduce content

MATERIALS:
Flip charts, Pandal Basin map and description

TIME: 60-90 minutes

PREPARATION:

Determine simulation roles (if you have not already done so). In this exercise, the instructor/facilitator guides participants in dialogue and negotiation regarding issues in the fictional Pandal Basin. Participants should be divided amongst the five states described. In each group, one lead negotiator (representing the head of state) should be identified. The remaining participants in each team may select various ministerial roles, such as (but not limited to) ministers of water, agriculture, energy, and environment. In a large group, the facilitator may wish to ask some participants to serve as non-governmental organizations (NGOs), international financing institutions (IFIs) such as the World Bank, and/or representatives from the indigenous populations identified in the basin description. All participants should be provided with a copy of the country descriptions, a basin map, and tabletop nameplates that identify their country and role in the negotiation. After each simulation exercise, the facilitator should lead a debrief (out-of-role) discussion among participants to discuss observations and take-away messages from each activity.

Rather than the instructor/facilitator, one or two participants should volunteer to practice serving as the facilitator for this exercise. These volunteer facilitators may work together or take turns facilitating different portions of the simulation.

STEPS:

1. The facilitator (participant volunteer) should set up the room for the negotiation. Arrange the chairs, nametags, lighting, temperature, etc. in the way you think will best facilitate collaboration rather than competition.

2. Invite the simulation participants to sit down (in role), directing representatives, ministers, and observers to their seats.

3. Welcome the participants, provide logistical information (including instructions for when observers/ministers can speak, when breaks will be, etc.), and describe the context and purpose for the meeting.

4. Invite the participants to introduce themselves, perhaps sharing a fun-fact.

5. The facilitator should then develop ground rules (or rules of the road). He/she may provide some initial options (e.g. when to speak, how to address one another, how to be respectful of other participants) or he/she may ask the country representatives to produce and agree upon a list of ground rules. Write these ground rules on flip chart paper and hang them somewhere visible in the room.

6. Announce that the next step is to set an agenda for the meeting, but before you do that, you want to explore why you are meeting. Ask participants to describe a worst case basin future and a best case basin future (20 years from now). Capture both in separate lists on flip chart paper.

7. Then, ask parties which future they prefer, and note if there is consensus.

8. Follow up by asking what needs to happen to achieve the best case basin future and to avoid the worst case future. Capture these ideas in a separate list. Then, ask the riparian representatives what items from that list they want to discuss in today's meeting. Start to generate an agenda.

9. Ask if there are any other topics that should be added to the agenda. Ask the representatives what order they would like to discuss the topics and how much time they would like to devote to each. Finally, ask them to generate a list of outcomes/outputs from today's meeting. Record these all in a visible place so they can be used as benchmarks for the meeting.

10. End with some reflection questions to highlight some of the key lessons of this session:
- How did you feel when you first entered the room? How did the conditions in the room affect your stress/anger level?
- What did you like about the introduction activity? What ideas do you have for other ways to do it?
- What did you learn from the ground rule activity?
- What happened during the future visioning exercise? Did it change your perspective? How would you improve it?
- How did the agenda-setting exercise go? By the end of this activity, how (if at all) had your orientation to the meeting changed?

- If conflict/substantive issues arose during the simulation, how did the facilitator handle it?
- What else could the facilitator do to produce conditions for collaboration at the start of the meeting?

TRAINER'S NOTES

1. The instructions in this activity are for the trainee volunteer facilitator.

2. The instructor should be monitoring the volunteer facilitator and should offer assistance (or to pause the simulation and discuss options) if he/she becomes stuck or confused about how to handle a situation. However, the instructor may also sit back and let problems unfold, then bring them up and discuss solutions in the debrief.

3. For this exercise, the instructor may choose to use the Pandal Basin simulation, or he/she may demonstrate how to open a meeting, set rules of the road, and set the agenda by doing these exercises for the workshop/training in progress.

4. This is an example of Rules of the Road that was generated by the participants in a previous MRC training:

Rules of the Road
- Participate
- Three S's – Silence, Sleeping, Smile
- Keep time
- Silence Phones
- Relax
- Ask questions
- Share comments
- Laugh
- Share understandings
- Take care of yourself
- One person speaking at a time
- Look towards resolution

HANDOUT
Pandal Basin description and map packet (see Section 7.2)

Training Exercise: Stakeholders, Positions and Interests: A Transboundary Water Scenario
This section provides an activity that trainers can use to teach participants how to identify positions and interests in a transboundary water basin. The activity also demonstrates a technique for guiding the discussion from positions to interests.

LEARNING OBJECTIVES:
By the end of the session participants will:
1. have learned to identify positional negotiations vs. interest-based negotiation
2. have learned techniques for guiding negotiations from positions to needs and interests

MATERIALS:
This exercise uses the fictional **Pandal Basin Case Study** (Section 7.2)
Flip charts, copies of the Pandal country descriptions and basin maps for each participant, tabletop nameplates, post-it notes of different colors, pens/markers, a projector, a slide of the basin map without borders

TIME: 90 minutes

PREPARATION:

Participants should be divided amongst the five states described. In each group, one lead negotiator (representing the head of state) should be identified. The remaining participants in each team may select various ministerial roles, such as (but not limited to) ministers of water, agriculture, energy, and environment. In a large group, the facilitator may wish to ask some participants to serve as non-governmental organizations (NGOs), international financing institutions (IFIs) such as the World Bank, and/or representatives from the indigenous populations identified in the basin description.

All participants should be provided with a copy of the country descriptions, a basin map, and tabletop nameplates that identify their country and role in the negotiation. After each simulation exercise, the facilitator should lead a debrief (out-of-role) discussion among participants to discuss observations and take-away messages from each activity.

Several large format maps of the Pandal Basin map such as poster-sized copy versions (wall maps) should be distributed about the meeting room, but an overhead projection or PowerPoint will also work, as long as the projection is on a surface to which Post-its can be affixed. Plenty of Post-it notes in three colors and plenty of pens should be available

STEPS:

1. Divide the group into smaller groups, ideally six. Ideally, each of the groups would represent one of the following countries (Ordon, Gandor, Panam, Esund, and Dalik) and one group would represent regional/global third parties and the NGO community. Though each group will do the exercise for only one country, the number of groups is restricted by the number of wall maps.

2. Suggest the following: "You (the participants) are each an expert group called together by the (fictional) Global Bank for Sustainable Development (or any other interested real or fictional third party), to help with the establishment of a cooperative framework for managing the Pandal Basin."

"Your first task, as regional experts, is to help identify the parties ("stakeholders") who should be invited to negotiate such a framework. Given your expertise, would you be kind enough to conduct the following exercise on Identifying Possible Parties, Decidable Issues, and Positions/Interests for the country to which you have been assigned (one group should think specifically about regional/global third parties and the NGO community."

3. Set up the Small Group Tasks based on these steps:

a) Using the Yellow Post-its, identify Parties that may become involved in the discussion-negotiations over the Pandal Basin. These Parties or "stakeholders" may be individuals, organizations, or agencies in any of the five countries within the basin, or from anywhere else.

b) Post your results at the appropriate places on the walls. You should aim for at least 20 such parties or "stakeholders".

c) Using the Blue Post-Its, identify "Decidable Issues" that are likely to be addressed within and/or among these parties now and in the near future.

d) Post your results at the appropriate places on the walls. You should aim for at least 10 such issues.

e) Choose at least three key Parties and Issues for each country, and identify at least five key Positions/ Interests for each Party as it considers those issues. Write those Position/Interests on the Green Post-Its and post them at the appropriate places on the walls.

f) It may help to fill out the following type of form for each country, expanded out for however many parties are identified. To get started, look for "key" words in the country descriptions

Example: Ordon

People	Relationship	Issues	Positions	Interests
Agriculture		Water for food	Water is for food and drinking	Subsistence farming does not permit expensive

			water	water diversions
Suwa		Spiritual Use of River	Water and timber are important for identity	Profits need to be shared with all
Timber Industry		Transport Logs by river	Water needed to permit profitable logging	Profits

g) The trainer should circulate between the tables to make certain the participants understand what a "stakeholder" is, what a "positions" are, and what constitutes "interests", and the important differences between "positions" and "interests".

h) Each country should develop two priority projects.

i) Each country should elect a water minister to represent them during multi-lateral negotiations.

4. Allow approximately 90 minutes for the groups to complete the exercise.

5. Bring the group back to plenary and end with some reflection questions to highlight some of the key lessons of this session:
- How did you feel about this exercise? What task was easy to do? Which task was not? Why?
- What changed when you started talking about interests rather than positions?
- What was it like working with the borderless map? How did that affect your discussion after the borders were placed back on the map?

TRAINER'S NOTES
As the representatives of each country set out to negotiate, they will need to remember their mutual relationship with all of the parties, issues, and interests which make up their constituency.

HANDOUTS
Pandal Basin Case Study Pack

Training Exercise: **Transboundary Water Negotiations Role Play: The Pandal Basin**

Case Study
This section introduces the trainer to the idea of equity in sharing basin costs and benefits and prepares the trainer to introduce the concept to trainees. It provides an activity in which participants learn that parties at the table do not necessarily represent the full range of basin costs and benefits, plus learn techniques for including marginalized interests/peoples.

LEARNING OBJECTIVES:
By the end of the session participants will:
1. have expanded their skills in facilitating interest-based negotiation
2. have learned a discussion technique to expand the discussion beyond parties represented in the room
3. have generated some practical approaches for expanding the basket of basin benefits to include frequently overlooked or marginalized groups and interests

MATERIALS:
Flip charts, **Pandal Basin Case Study** (See Section 7.2)

TIME: 75 minutes

PREPARATION:
If this is your first time using the simulation, see the introductory Pandal Basin simulation instructions (See Section 4.2b) . Also, read and print copies of the Pandal Basin simulation packets (in section 7.2).
The following exercise expands the discussion of interests beyond parties in the room to consider a broader range of basin constituents, the needs and interests not currently at the table, and paths to involve frequently overlooked or marginalized groups in the decision-making and management processes.
The facilitator in this exercise can be a participant (after being briefed and prepared by the trainer) if you want to also get participants to practice their facilitation skills . The facilitator can also be the trainer.

STEPS:
1.A facilitator rearranges the seating for the multi-lateral negotiations with just the water ministers. The seating arrangement is important so that none of the countries are facing each other, but rather are seated next to each other. A "V" pattern with the tables usually works well with the ministers facing one map or projection. Each minister introduces themselves and reads prepared statements from each country

2.Option – Facilitator could invite each water minister to post their desired projects to begin the process of considering the notion of "benefit sharing

3. The facilitator then asks each water minister to describe the landscape that underscores successful negotiation. An example flipchart:

a) Forest
b) Fresh Air
c) Clean Water
d) Wealthy, Healthy
e) Agriculture
f) Water Supply for People

4. The facilitator then asks what the headlines might read for the Pandal Basin in 20 years if the negotiations were unsuccessful.

5. Next, the facilitator asks about the shared vision and proposed projects by country. These projects are then posted on the basin map with country boundaries. This should take about 5 minutes.

6. The facilitator then asks the water ministers if the proposed projects are "sustainable" for the basin.

7. Then the facilitator asks about the shared vision and proposed projects by basin. A new map is projected on the wall, this time with no country boundaries. The water ministers are then asked to meet with the other ministers within their country (energy, environment, agriculture, spiritual, etc.) to define two projects and post on the "borderless" map. This should take about 5 to 10 minutes.

8. Put the borders back on the map. Now it is time to think about "sharing benefits".

9. Bring the participants back to plenary session and ask these reflection questions as part of the de-brief of the activity:
- What were some of the biases and reservations your simulation characters had to talking about or including these groups?
- How can we better overcome those limitations?
- What tools were used?

e.g.
a) Seating arrangement to seat "enemies" next to each other
b) Setting the Rules of the Road
c) Analysis of "good" versus "bad" based on projects.
d) Started with a "shared vision" exercise
e) Facilitation
f) Reframing
g) Active listening

TRAINER'S NOTES

1. Not all of this information (e. g. special knowledge held by ethnic minorities in the basin) is given in detail in the simulation materials. Participants should use their imaginations and extrapolate from real-world examples to generate benefits and barriers to including each group mentioned.

2. In extrapolating or inventing information about these groups, participants may expose some real-life biases, prejudices, and false assumptions about minorities and/or non-dominant groups. This may be a good time to discuss those biases, how they affect the way we orient ourselves to "others", and how those types of biases and assumptions might play out in real-life negotiations.

3. This a crucial step and must be conducted by the trainer and time should be set aside in the training schedule for at least 20 – 30 minutes. This session brings together all the knowledge and skills that have been discussed in the previous chapters of this module in a cohesive way. This must be highlighted to the participants by the trainer. Set up a flip chart of all the skills that have been practiced throughout the training (from Day 1 and build up the list as the training progresses). This flip-chart can be discussed with the participants at the closing of the training.

HANDOUT
Pandal Basin Case Study Pack
Public participation spectrum

Inform	Consult	Involve	Collaborate	Empower
Goal of participation				
To provide the public with balanced and objective information to assist them in understanding the problems, alternatives, and solutions	To obtain public feedback on analysis alternatives and/or solutions	To work directly with the public throughout the process to ensure that public issues and concerns are consistently understood and considered	To partner with the public in each aspect of the decision including the development of alternatives and the identification of preferred solutions	To place final decision making in the hands of the public
Promise to public participants				
We will keep you informed.	We will keep you informed, listen to and acknowledge your concerns, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your issues and concerns are directly reflected in the alternatives developed and provide feedback on how public input influenced the decisions.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decision to the maximum extent possible.	We will implement what you decide.
Examples of participation tools				
Fact sheets, websites, open houses	Public comment, focus groups, surveys, public hearings	Workshops, deliberative polling, MSPs and associated tools, such as scenario building and exploration	Citizen advisory committees, MSPs including consensus-building processes	Citizen juries, ballots, delegated decisions, Multi-Stakeholder Processes (MSPs), etc.

Public Participation Spectrum from Dore, J. , Robinson, J. and Smith, M. (Eds.) (2010). *Negotiate – Reaching agreements over water.* **Gland, Switzerland: IUCN.**

Appendix D: Additional Pandal Scenario Exercises[35]

Exercise 1 (Principles): The facilitator should ask the simulation country leaders to come up with a "worst basin future." What would the Pandal basin be like if it neglected the international water law principles? What would the basin look like 20 years from now without these principles and norms in place? The facilitator should capture participant ideas on a flipchart. Then, the facilitator should ask the country representatives to describe a Pandal basin that applies the principles and norms of international water law. What might the basin look like 20 years from now with these norms in place? Some country representatives may feel their interests are threatened by these principles. Ask all participants which picture/which future (without principles or with principles) has better outcomes for their country, and which has better outcomes for the basin as a whole. Debrief.

Exercise 2 (Justice): Ask the country representatives to discuss the political/cultural/ethnic composition of the basin. What people(s) are most directly impacted by basin management decisions and/or the impacts of climate change? If the representatives wanted to form a focus group to discuss river issues, who all would need to be represented? Whose voices are not currently at the table? What subsets of the population are frequently overlooked? What knowledge and other resources do those people(s) offer? What benefits might come from including them? The facilitator should keep track of groups mentioned and what they offer to the discussion. Then, the facilitator should ask the group to brainstorm potential ways to reach/include these groups and how to capitalize on the knowledge/benefits those groups would bring to the table. If countries bring up risks or negative aspects of including certain groups, ask them to brainstorm ways to mitigate those risks. Debrief.

Exercise 3, Part 1 (Benefits): Pass out packets of post-it notes to participants. Ask the participants to work in their country teams to write one use or benefit of water on each post-it note. Optionally, ask that participants write uses/needs/values on one color post-it and benefits from the river on another color post-it note. Direct participants to generate ideas as a group and to refer to the country descriptions as needed. After participants have generated a series of uses and benefits, project an image of the Pandal basin with the borders removed. Then, ask all teams to stick their post-it notes onto the image of the basin in the area where that benefit or need exists. For instance, "hydropower" as a benefit may be posted in the headwaters, while "power" as a need may be posted in areas where cities exist. Ask participants to discuss what they see and to move or add new post-it notes as needed. Debrief.

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[35] This text is excerpted from: Carius, A., Wolf, A. T., Nenz, D., Hensengerth, O., Watson, J. E., Semmling, E., & Uhlmannsiek, J. (September 2013). *Training manual: Transboundary cooperation & hydropower development*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Exercise 3, Part 2 (Benefit Sharing): Leave the post-its displayed on the map without borders. Ask the ministers from each country to group together (e.g. all of the ministers of energy in one corner, all of the agricultural ministers in another, etc.). Ask them to discuss the benefits and needs in their sector for the whole map, and then come forward and connect benefit post-it notes to needs post-it notes using string and tape (or dry erase markers if projecting onto dry-erase board). Once all groups have identified connections between needs and benefits, switch the projection to show the map with borders. Ask ministers to return to their country groupings and discuss (in their small groups) what their country can give and what they might receive from sharing benefits with neighboring countries. Then, the facilitator should ask all of the groups to generate a list of potential benefits from transboundary cooperation. The facilitator should keep track of these ideas on a sheet of flipchart paper. Debrief.