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A framework for analysing transboundary water governance complexes, illustrated in the Mekong Region

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SUMMARY

In this paper we present a framework for analysing transboundary water governance complexes, illustrated in the Mekong Region. In this region, the sharing of waters between countries adds a critical dimension to decision making about producing food and energy, maintaining vital ecosystems, and sustaining livelihoods. Hydropower, dams, diversions, expanding cities and irrigation schemes are all in the mix. The key elements of the framework are: context, drivers, arenas, tools, decisions and impacts. The use of deliberation, technical and advocacy tools is explored and normative governance improvements are suggested.

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1. Introduction

Water governance can be understood as a social process of dialogue, negotiation and decision-making; or, instrumentally, as a means to achieve pre-determined objectives. In this paper, we present a framework for analysing transboundary water governance complexes (Fig. 1).

The framework portrays the importance of, and connections between: context, drivers, arenas, tools, decisions and impacts. There are many different water governance actors dealing with a variety of issues influenced by their individual and shared contexts. Actors engage in multiple arenas, depending on opportunity, necessity and choice. Drivers are what influence and motivate actors. We suggest three are key: interests, discourses and institutions. Actors employ tools to establish and legitimise their positions, inform debate and influence negotiations; or resist, reinforce and reframe perspectives. We define tools broadly and categorise them as being predominantly for deliberation, technical support, or advocacy. Decisions emerge from arenas. We separate the decisions that

emerge as being primarily about framing, supply and demand. Ultimately, we are interested in the impacts of decisions in terms of the fairness and sustainability of water allocation, that reshapes the water governance context. We define allocation broadly to include water use, related investment and sharing arrangements.

In our heuristic framework, we recognise that some elements of our categories can overlap. We illustrate the framework with our experiences in Mekong transboundary water governance with emphasis, in this paper, on highlighting the diversity of actors and the role of decision tools in allocation decision-making. We draw on the research and engagement findings of a regional network on water governance known as M-POWER (Lazarus et al., 2011; Lebel et al., 2007; Molle et al., 2009b), especially a project that explored the tools used in water allocation in Mekong countries (Dore et al., 2010a).

2. Research method

The aim of the project was to contribute to water allocation policy and practice that results in more optimal and equitable use of water by society. This aim was pursued by research across the Mekong Region and active engagement with policymakers. We examined the use of a wide range of decision-support tools, in many decision-making arenas. In doing so, the research team sought to understand decision contexts and drivers, and also build capacity to undertake governance research.

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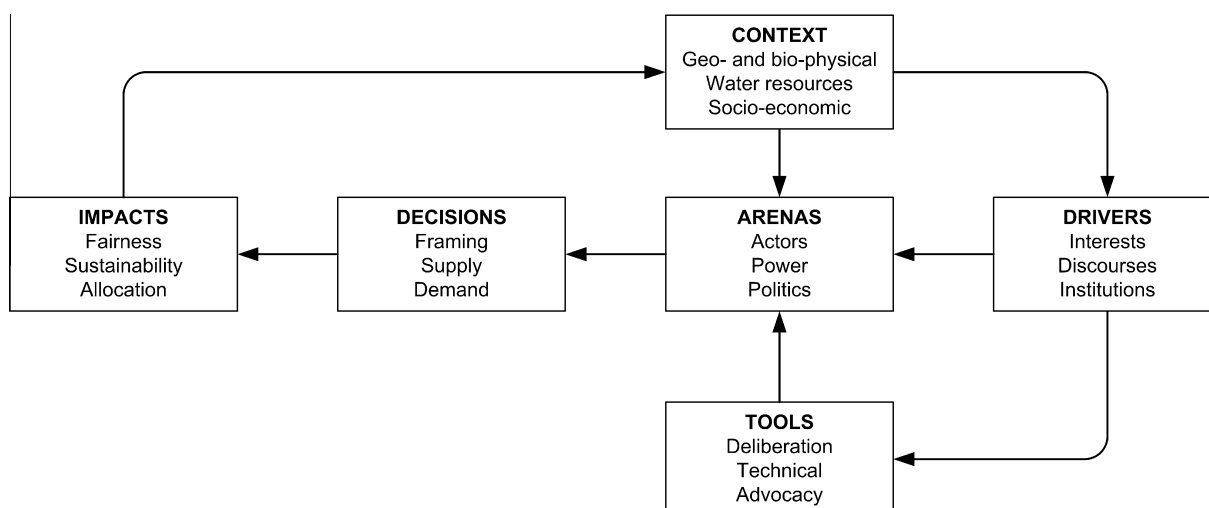


Fig. 1. Framework for analysing transboundary water governance complexes.

The team explored how tools have been used in different places and political arenas in the Mekong Region to govern water. The tools examined included: multi-stakeholder platforms, scenario building, cumulative impact assessment, strategic environmental assessment, environmental flows, hydrological modelling, and lobbying campaigns.

This paper is drawn largely from the project but only covers part of the research findings in the 26 working papers, most of which are proceeding through to formal publication (including: Dore, 2010; Dore and Lebel, 2010; Floch and Blake, 2011; Johnston and Kumm, 2012; Keskinen, 2012; Keskinen et al., 2012; Lazarus et al., 2012; Suhardiman et al., 2012). The project involved 52 researchers from 15 countries, including five Mekong countries.

3. The Mekong transboundary water governance complex

3.1. Context

Water resources lie at the heart of development in the Mekong Region (Fig. 2). This region refers to: the territory, ecosystems, people, economies and politics of Cambodia, Laos, Myanmar, Thailand, Vietnam and China's Yunnan Province (Kaosa-ard and Dore, 2003) and is home to about 260 million people. Future quality of life in the region is strongly linked to the choices made about sharing, developing and managing water to: produce food and energy, maintain vital ecosystems, and sustain livelihoods. Many water resource projects have been completed, are underway, or are being planned. Dams, river diversions, inter-basin transfers, thirsty cities and irrigation expansion are all in the mix. While some projects have been celebrated, others are subject to disputes and protests. The transboundary and interconnected nature of the Mekong's waters adds a critical dimension.

There are many rivers in the Mekong Region, but the iconic Mekong River can be used to illustrate many water governance issues. It is the epicenter of contemporary debates about water resource development in the wider region. It is the longest river in Southeast Asia with an estimated length of nearly 4900 km. The Mekong is the eight largest (in terms of the amount of water), and twelfth longest river in the world. The Mekong River is an international river. It begins in mountains on the northeastern rim of the Tibetan Plateau in wetlands situated about 5000 m above sea level. For nearly 2200 km it flows through Chinese territory in Qinghai, Tibet and Yunnan. During its first 1000 km the river travels in a southerly direction in rough parallel with the Salween and Yangtze rivers which originate in the same highlands. By the time the river

leaves China the altitude has fallen to about 400 m above sea level (Daming and Kung, 1997; Hori, 2000). The river then winds its way for just over 2700 km through Myanmar, Laos, Thailand, Cambodia and Vietnam, before spilling into the South China Sea.

Leaders of Mekong countries are aware their countries' destinies are entwined and will be partly shaped by the way increased cooperation of the past 20 years is extended into the realm of water resources development on the Mekong River (MRC, 2011b), but also on other transboundary rivers, such as the Irrawaddy, Salween and Red. The Mekong Region's waterscapes are being contested (Molle et al., 2009c) evincing a confrontation of interests and worldviews that are hard to reconcile despite a fresh rhetoric of tradeoffs, benefit sharing and win-win solutions. Dams that are "powering progress" and publicly justified by reference to development aspirations and poverty alleviation might well, simultaneously, jeopardise food security and the livelihoods of the poorest by harming the extraordinarily bountiful wild fisheries (Barlow et al., 2008).

A major challenge for Mekong water governance is the complexity of societies, economies and ecologies, in a region "where nothing is as it seems" (Hinton, 2000). In contrast, analysis and planning is often based on "state simplifications" (Scott, 1998) that are confounded as people continue to make autonomous decisions, wherever possible. Spatial differences in wealth, job opportunities, resource endowments, environmental degradation, business regulation, law enforcement and political freedom result in flows of people and capital. These flows reshape societies and economies and usually add further pressure to natural resources, including rivers and ground water. Understandings of ecological processes are incomplete. For example, in the Mekong River there is limited, albeit increasing, understanding of fish migration and reproduction, and the relationships between sediment and nutrients (Sarkkula and Koponen, 2010). This makes it difficult to pre-determine the impacts of major interventions, such as the aforementioned dams, diversions and expansions of urban and irrigated areas.

There is additional uncertainty from external forces that shape the future of the region. For example, climate change is expected to affect river flows and agricultural potential (Hoanh et al., 2010a; Mainuddin et al., 2010; Rerkasem, 2011). Global economic growth and contraction will also influence the final outcome of many Mekong-made decisions. Dealing with uncertainty is the fate of most decision-makers, not only of those taking water resources decisions. Yet, because of the way it interconnects people's livelihoods and ecosystems, "the complexity of water" (Dore and Smith, 2010) has particular importance.



Fig. 2. Mekong Region SOURCE: Based on Map No. 4112, Rev. 2, January 2004. United Nations Cartographic Section, New York, US.

3.2. Drivers

A recent treatment of primary drivers in the Mekong Region focused on demographic changes, human development needs, energy and food security concerns, increasing investment and trade, and climate change (Grumbine et al., 2012). For our decision

analysis purpose here, we address the more generic drivers of interests, institutions and discourses. We devote more space to illustrating the latter.

Interests are what underlie stated positions and provide insight into needs, wants, desires, concerns, hopes, fears and values (Vernon et al., 2010). All actors have a variety of interests which

is what can make water governance so socially complex. Different interests manifest themselves within and between different categories of actors. Moreover interests are entwined and change through time.

National interest is a term regularly invoked in transboundary water governance, often simplistically. At least in the Mekong, the term is used in two main ways; first “to identify assumed benefits, or avoided costs, to a particular country that are distinguishable from the well-being of other countries” and second “to assert a greater good at the nation-state level, often where sacrifices are required of a smaller group within that same country” (Hirsch and Morck-Jensen, 2006). For example, national interest is ascribed to China in seeking to improve navigation of the Upper Mekong River mainstream for trade, to Lao for wanting to produce and export electricity, to Thailand for its plans to divert Mekong mainstream waters into northeast Thailand, to Cambodia for wanting to protect its freshwater fishery, and to Vietnam for wanting to maintain the productivity of its part of the Mekong delta. There is some truth in each of these claims but the national position of each country depends on who is representing that view, and how they weigh the diverse interests of many actors that resist being fused into singular national policy positions.

Institutions are rules and norms, both formal and informal, that provide structure for behaviour and relationships in a society (Handmer and Dovers, 2007; North, 1990, 1993). Water decisions in the Mekong Region, as elsewhere, reflect the outcome of contests and interplay between entwined and evolving interests and discourses, governed by institutions.

A prominent transboundary water governance institution is the 1995 Mekong River Agreement that articulates an inter-governmental decision-making and management mandate for the mainstream, tributaries and lands of the basin within the territories of the Lower Mekong countries (Browder, 2000; Governments of Cambodia Laos Vietnam Thailand, 1995). This Agreement is the most recent institutionalisation of a cooperation that has been evolving, with ups and downs, since the 1950s (Bui, 1997; ESCAP, 1997). Article 1 of the Agreement commits the four member countries to cooperate in all fields of sustainable development, utilisation, management and conservation of the Mekong River Basin in fields such as irrigation, hydropower, navigation, flood control and fisheries. Another regional institution, with great implications for water governance, is the Inter-Governmental Agreement on Regional Power Trade in the Greater Mekong Subregion (GMS) (Governments of Cambodia China Laos Myanmar Vietnam Thailand, 2003). The power agreement and subsequent implementation agenda impacts water resources development in many ways, including the incentive it creates for hydropower expansion to feed into crossborder transmission grids.

Discourses are shared sets of concepts, categories and ideas that provide adherents with a framework for making sense of situations, embodying judgments, assumptions, capabilities, dispositions and intentions (Dryzek, 2006). Work by this team (Dore, 2001; Molle et al., 2009c) has illustrated the importance of discourses in Mekong transboundary water governance – actors weaving narratives, labelling people, framing debates, and brandishing meta-justifications. Actors align themselves with discourses such as ‘fighting poverty’, ‘good governance’, ‘sustainable development’, ‘water security’, ‘energy security’, ‘food security’, ‘national security’, ‘integrated water resources management (IWRM)’ and the ‘water–energy–food (WEF) nexus’.

Discourses are powerful. For example, northeast Thailand is consistently portrayed as a poor and parched inhospitable place, begging for more irrigation (Molle et al., 2009a), wild capture fisheries are said to be doomed from over-exploitation (Friend et al., 2009). With this backdrop, infrastructure projects in the Mekong Region have been presented as solutions to fight poverty,

and opponents derided as anti-development or more interested in environmental protection than people.

Discourse dominance is highly sought after and a noticeable part of Mekong Region politics. Once captured, dominance is maintained by “disallowing or marginalising alternatives” (Shore and Wright, 1997). The advent of IWRM provided common ground and an initial consensus; adopted by the international water community – “Just like participation, IWRM appears as something desirable and uncontroversial, and official documents suggest that governments can resort to it abundantly and at ‘no cost’. It thus becomes a coveted discursive currency that is therefore also likely to be hijacked by state, sectoral or private interests seeking to legitimise their agendas” (Molle, 2008).

Recently the WEF nexus discourse has emerged, globally, and in the Mekong Region. Whilst already on the research agenda of some, 2011 has seen a WEF emphasis in Davos (Vaughray, 2011), Bonn (Hoff, 2011)⁴ and Phnom Penh.⁵ The trend is continuing in 2012 with WEF being the core of a GMS 2020 conference in Bangkok⁶ facilitated by the Asian Development Bank (ADB), and a Mekong2Rio event in Phuket facilitated by the Mekong River Commission (MRC)⁷. The WEF framing has gained momentum at the expense of IWRM which has “tended to stay within the domains of the water, agriculture and environment professionals and not had much traction with energy sector professionals” (Bird, 2012). WEF is proving useful as more actors are identifying with the interdependence of water resource management, with food and energy production. Within this WEF discourse, many actors see a logical, sectoral entry point for themselves in compelling, new, multi-sector, interdisciplinary and transboundary deliberations.

Discourse shifts also flow through to funding shifts. For example, ADB’s Water Financing Partnership Facility work plan for 2012 calls for “projects and activities that seek to address the water-food-energy nexus”, which as the program document says will require “tightening the link of water to food and energy” that is “particularly crucial in responding to climate change” (ADB, 2012). Success and timing matter. It is unlikely the rhetorical (and financial) turn to WEF would have been so swift without the late 2009 failure of the United Nations Climate Change Conference in Copenhagen.

Discourse dominance is also reflected in the naming of institutions. The international language of the sustainable development discourse became embedded in the 1995 Mekong Agreement title and text, perhaps partly basking in the afterglow of the 1992 Earth Summit era during which it was negotiated. If the negotiations for the Mekong Agreement had been concluded in 2005, rather than 1995, it may have been titled an agreement on the integrated management of water and water-related resources – that is, defacto IWRM – rather than an agreement on the sustainable development of the Mekong River Basin.

3.3. Arenas

In our framework we conceptualise decisions as emerging from arenas that vary from very restricted to wide open. Arenas are saturated with politics and power, obviously; yet both are elusive concepts. Long ago, Miller (1962) suggested that: “Politics is a natural reflex of the divergences between members of a society...[where]...there is a variety of perpetual disagreements which arise from fundamental differences of condition, status, power, opinion, and aim”. For the authors of some World Water

⁴ http://www.water-energy-food.org/en/bonn_2011_process.html.

⁵ <http://mekong.waterandfood.org/portal/whats-on/82-mekong-citizens-engaged-in-dialogue>.

⁶ <http://www.gms-eoc.org/events/international-conference-gms2020>.

⁷ <http://www.mrcmekong.org/news-and-events/events/mekong2rio/>.

Council literature, politics includes “the whole area of power relations during the identification of a problem and possible solutions, the consultation and decision making processes that follow and further on into the public action phase”.⁸ These definitions explicitly recognise political and decision-making domains beyond states and the government sector of society. With this we agree, hence our efforts below to illustrate the variety of actors in water governance. What is less convincing about the WWC definition of politics, is the casual invocation of power. Power is defined in many different ways, often loosely. Lukes’ “faces of power” (1974) drew attention to the ability to set agendas, take decisions, or shape preferences. More nuanced, Hay (1997) speaks of “ability to shape the context and conduct of others” and Vermeulen (2005) as “ability to achieve a wanted end in a social context, with or without the consent of others”.

Ideas, leadership, positions and resources can all be seen as power assets. The case for ideas is succinctly put by North: “History demonstrates that ideas, ideologies, myths, dogmas, and prejudices matter” (1993). Leaders also matter. Leaders that obtain credibility, can engender trust, inspire commitment and be very influential, for better or worse (Avolio and Yammarino, 2003; Byman and Pollack, 2001; Graham, 2006). Positions matter, for example, being high up in a hierarchy or holding a strategic position gives an actor particular leverage, opportunity or authority – such as royal leaders, political leaders, religious leaders, and those in coordinating nodes in networks. And finally, resources matter. For water-related power, the extent and quality of the physical water resource is obviously central. However, financial and human resources also serve to constrain or empower. Resource availability changes, for example, with “new water” in the dry season from dams, or more finance influenced by swings in global and regional economies and the emergence of new donors and patrons that changes the quantum of funds available.

Arenas are primarily defined by the actors that take part in their processes. Arenas can be socially constructed to focus on particular scales and levels. Scale is defined as the spatial, temporal, quantitative, or analytical dimensions used to measure, or rank, and study any phenomenon (Gibson et al., 2000). Examples of temporal scale are management and electoral cycles. Spatial scales include domains of administration, hydrology, economy and ecosystem. Levels are the units of analysis located at different positions on a scale. For example, the administration scale can have district, provincial, national and regional levels. Whereas, levels of interest to a hydrologist will more likely be watershed, aquifer, sub-basin, national river basin, and international river basin. Elsewhere, two of the authors have provided a fuller treatment of scales and levels, in relation to deliberative water governance (Dore and Lebel, 2010). Multi-level and multi-scale interactions test the strength, and expose the limitations of many arenas. For example, hydrological and ecological cross-level interactions make local, basin, national and transboundary levels interdependent, with policy repercussions. As a result, the cumulative impact of policies emerging from, say, provincial arenas in the Mekong delta may prove incompatible with modifications of the water regime brought about by upstream development or climate change (Hoanh et al., 2010b). Indeed, in Mekong transboundary water governance there are “scalar disconnects” (Suhardiman et al., 2012).

In the Mekong Region, as elsewhere, there is a plethora of actors jostling for space in decision-making arenas. They have very

different powers, diverse approaches, and varying degrees of influence. Understanding them and the overall governance framework within which they operate is useful. The multi-faceted nature of particular organisations defy simple designations, nevertheless, an attempt has been made here to identify and group water governance actors to assist sense-making (Fig. 3). We have categorised actors as: local, state, United Nations, non-government organisations (NGOs), media, business, financiers, policy research institutes, universities and networks.

Across the Mekong Region there are, of course: men, women, old, young, ethnic minorities and majorities, rich, poor, urban and rural. Not surprisingly, the people’s movements, grassroots groups and local government across the region reflect this cultural diversity. Related to water governance, different movements and groups have emerged around issues such as contested infrastructure and access rights, for example, the Assembly of the Poor in north east Thailand (Missingham, 2004). There are also other local structures, including mass organisations, such as Farmer Water User Groups in Cambodia, and formal local government more closely linked to states.

State actors are of obvious importance in water governance, most notably national and sub-national governments’ executives, judiciaries and parliaments, for example, the six national governments of Cambodia, China, Laos, Myanmar, Thailand, Vietnam; and others such as China’s Yunnan provincial government. Public sector agencies, utilities, state holding companies and militaries are more specific parts of the state, relevant to water governance, and include China’s Ministry of Water Resources, Electricity Generating Authority of Thailand, Lao Holding State Enterprises, and Myanmar’s military Tatmadaw. Regional inter-government organisations such as MRC, Association of South-East Asian Nations, East Asia Community, their secretariats, summits and working groups, are also a part of the institutional tapestry. Non-Mekong governments also influence the waterscapes of the Mekong through their foreign policies and their participation in regional and bilateral relationships that involve geopolitics, positioning, donation, investment, lending and trading. For example: Japan, China, United States of America, South Korea, Singapore etc... who engage in or catalyse various bilateral and multilateral processes such as Japan’s Mekong Initiative (that excludes China), and United States’ Lower Mekong Initiative (that excludes China and Myanmar).

A caucus of non-Mekong (and Mekong) governments is the United Nations. In addition to peak councils, it has some influence via the UN family of organisations. For example, Food and Agriculture Organisation, Economic and Social Commission for Asia and Pacific and the United Nations Development Program all engage in Mekong water governance via a plethora of initiatives.

The umbrella term NGO does not express the complexity of function, origins, funding, motivation, priorities and agendas of actors lumped into this category. With that caveat, NGOs can be broadly divided into three types – local (principally operating within a particular country or loosely definable area), regional, and international. Actively engaged in Mekong water governance are national NGOs such as: Green Watershed (Yunnan), the 3S Rivers Protection Network (Cambodia); Water and Energy Working Group (Laos); Assembly for the Poor, and Living River Siam (Thailand); Vietnam Rivers Network – and their members, which may be other NGOs or grassroots peoples’ movements. There are also regional NGOs such as Focus on the Global South (FOCUS) and Towards Ecological Recovery and Regional Alliance (TERRA) whose births were catalysed by a sense of disenfranchisement, threats to local livelihoods and the realisation of the importance and usefulness of the regional scale. Key actors in their formation process were prominent leaders of local NGOs. Associated actors include people’s movements, local NGOs, activists and international funders. The two examples mentioned, FOCUS and TERRA, are very

⁸ http://www.worldwatercouncil.org/water_politics/. The World Water Council hosted a workshop in Marseilles, France on February 26–27, 2004, which brought together water practitioners, political scientists and politicians in charge of deciding and implementing water ‘reforms’, such as implementing the somewhat flexible agendas of Integrated Water Resources Management (IWRM) proponents. It aimed at identifying priority areas to be investigated and priority action. In particular, it asked what could be learned from political science.

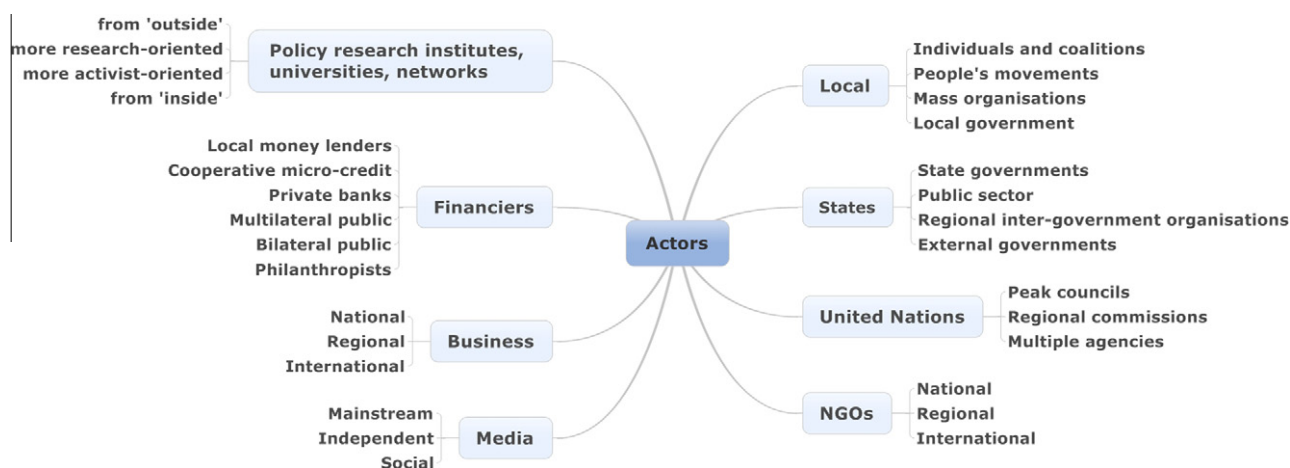


Fig. 3. Water governance actors in the Mekong Region.

different, but they each aim to provide effective facilitation, coordination and space for political representation of diverse civil society interests in national, regional and international forums. International NGOs also engage prominently in Mekong water governance. These include World Wildlife Fund, International Union for Conservation of Nature, the Oxfams, and International Rivers.

The media in the Mekong Region plays an important role (Garden and Nance, 2007). Whether controlled or independent, informed or uninformed, sensationalist, shallow or analytical, it cannot be ignored. Print media remains a part of the mix. That said, radio remains an important communication tool, whether managed by community, government or commercial providers. However, the discussion groups and information networks of the internet and social media are now increasingly prominent in the region and an important and strengthening counter to a shrinking pool of mainstream media owners.

Business is another central actor in the Mekong Region. These include local businesses; state actors in business, whether governments, military or politicians; consultants; transnational corporations; private financiers (the commercial banking sector); deal arrangers and insurers (often multilateral public financiers and their credit guarantee arms). In the Mekong these include local water-pumping entrepreneurs and nation-wide actors such as Vietnam's irrigation and drainage management companies. Ranging across boundaries are corporate titans like Italian–Thai construction group and China's quasi-state Lancang Hydro, the latter building and operating hydropower dams on the Upper Mekong. All influence water resources decision-making.

There are many financiers that play roles in Mekong water governance. Local money lenders and cooperative micro-credit providers are at one end of the spectrum. Private banks are also very active in larger water resources development, especially from China, Thailand and Vietnam. Multilateral public financiers active in the Mekong include the ADB and the World Bank family – International Bank for Reconstruction and Development, International Development Association, International Finance Corporation, and Multilateral Investment Guarantee Agency. Bilateral public financiers include aid organisations from Japan, United States, Sweden, Australia, Germany, etc. There are also bilateral giants such as Japan Bank for International Co-operation, China's Exim Bank, and their respective export credit guarantee agencies.

Philanthropists such as MacArthur Foundation, Blue Moon Fund, Ford Foundation, Rockefeller Foundation are active in grant-making; plus development assistance subsidiaries of non-Mekong political parties such as the German Green Party's Heinrich Boell Foundation; There are also distributor funds with

Mekong windows, for example, the Critical Ecosystems Partnership Fund. All these groups have their interests reflected in their funding focus and criteria.

There are many Mekong policy research institutes, such as: Cambodia's Supreme National Economic Council and the Cambodia Development Resources Institute. In China, the Institute for International Economic Research takes an active interest in Mekong affairs as part of the powerful National Development and Reform Commission. The Institute of Geographic Sciences and Natural Resources Research, part of the Chinese Academy of Sciences, focuses on natural sciences, and has a team studying Mekong ecosystems. In Bangkok, the Thailand Development Research Institute is influential in economic policy, and the Thailand Environment Institute has done extensive work across the Mekong Region on environmental governance. Vietnam's Institute of Meteorology Hydrology and Environment, part of the Ministry of Natural Resources and Environment, leads research examining impacts of more irrigation and dams on the productivity of the Mekong Delta.

There are also a large number of institutes from outside the region that are active inside. These include International Water Management Institute, that hosts the CGIAR Challenge Program on Water and Food; Australia's Commonwealth Scientific and Industrial Research Organisation, Sweden's Stockholm Environment Institute, Stimson Centre from the United States, and the Danish Institute for International Studies.

Universities, research and/or advocacy networks also play important roles, although their influence on decision-making varies greatly between Mekong Region countries. There are universities located inside and outside the region which have a Mekong-focus. There are also networks of research organisations participating in joint research efforts aiming to better understand various Mekong issues, such as M-POWER. And there are various other organisations operating as research and advocacy networks, such as: Wetlands Alliance, Mekong Energy and Ecology Network, 3S Rivers Protection Network (Cambodia), Burma Rivers Network (Myanmar/Thailand), Living Rivers Siam (Thailand); plus networks of universities, policy research institutes, and NGOs. All contribute to water-related policymaking in the region.

Arenas are socially complex, and by definition are multi-actor. For example, members of the East Asia Community take part in the arena of the East Asia Summit but, clearly, many other actors are involved in either central roles, or on the margins. MRC creates and convenes arenas focused on the Mekong River Basin, many of which engage multiple actors, but other actors can and do move to create alternative arenas, even at the same scale and level, that

operate with different rules and establish new hierarchies between participants. Even arenas can have typologies. Track 1 arenas are state-centric, official inter-government forums. Track 2 privileges states, but provide explicit space and roles for non-state actors. In track 3, civil society (NGOs, business etc.) leads, less impeded by and subordinate to states. In the Mekong there are also track 4 arenas and processes, imbued in localism, with low expectations of states, focused on supporting local communities (Dore, 2003).

3.4. Decisions

Arenas yield or shape decisions. Framing decisions refer to the strategies, frameworks, policies and legal regulation, which shape the environment in which other decisions will be taken. Supply decisions include major infrastructure investments that physically modify the hydrology of a system. Demand decisions include the creation of regulations and incentives to influence allocation through changes in water users' behaviour.

Framing decisions relevant to Mekong transboundary water governance include water, food and energy policies. A national illustration is Vietnam's Power Development Plan for 2011–2020 (Dao and Hawkins, 2011) with its targets for hydropower, thermal, gas, renewable and nuclear energy production. Another, amongst many, is Cambodia's Paddy Production and Rice Export Policy, with expansion targets by 2015, requiring more irrigation and agricultural intensification (Sok, 2010). A basin-wide example is provided by the IWRM-based Basin Development Strategy (MRC, 2011b) that articulates transboundary, water resources development risks requiring impact assessment and mitigation. A regional example of influence has been the strategic framework for the GMS economic cooperation programme 2002–2012 (ADB, 2002), recently renewed for 2012–2022 (ADB, 2011). Related framing decisions include the adoption of other GMS strategies that incentivise the context for power trading, new highways, bridges and "economic corridors" (ADB, 2010a,b,c), all of which have implications for water governance.

Supply decisions may be concerned, for example, with: storage, hydropower and irrigation projects; intra- and inter-basin diversions; and urban water delivery. For example, a dominant current issue in the Mekong is the rapid increase in new hydropower projects and proposals. A recent count found 82 existing and 179 potential hydropower projects in the wider region (King et al., 2007), many on Mekong River tributaries, where construction is now accelerating. There are over 17–19 projects either built or under serious consideration on the mainstream in China (Magee, 2012), with the feasibility of yet another cascade under consideration for the uppermost reach. A further twelve Lower Mekong mainstream projects (ICEM, 2010) have now emerged on the agenda of developers from China, Malaysia, Vietnam and Thailand who are currently negotiating with the Governments of Cambodia, Laos, Thailand and Vietnam.

Demand decisions also abound. They can relate to abstraction licenses, volumetric allocation rules, water user fees, metering and monitoring, and quests for increased efficiency of use. These decisions might be taken by, for example, water supply utilities and various rural and urban user groups.

3.5. Impacts

When introducing the framework, reference was made to sought after impacts of fairness and sustainability in water resources-related allocation. These need to be put into operation. One way to do this is to explore the rewards, risks, rights and responsibilities (4Rs) associated with water-related decision making. Our aspirations are for: rewards to be fairly shared, risks (and

costs) minimised and fairly apportioned; rights to be agreed and respected; and actor responsibilities to be clarified and discharged.

Using the 4Rs can be useful to illustrate some recent Mekong transboundary water governance deficiencies. For example, dams proposed for the Salween River in Myanmar's Karen State, and others proposed in Kachin State, and further upstream in China have not been subject to a public analysis of the *rewards*, or justifications, for the projects. Impact assessments when done, are not in the public domain. Rights of affected people to be involved in life-changing decisions have been habitually ignored. Risks remain relatively unexplored and unaddressed.

In the Vietnam stretch of the Se San River – a major Mekong tributary – the *risks* to downstream were externalised by the developers and subsequently by the operators of the Yali Falls dam. The official Environmental Impact Assessment (EIA), undertaken in the 1990s, adopted a narrow definition of the project impact area, extending only 6 km downstream, totally ignoring the possibility of transboundary impacts to neighbouring Cambodians who were "never informed, consulted or officially given a copy of the EIA" (Wyatt and Baird, 2007).

In general, in the case of dams across the Mekong Region, involuntary risk bearers, especially project affected people, are claiming *rights* of access to information, participation and justice about decisions which affect their lives. These rights are enshrined, within a single-state paradigm, in Principle 10 of the Rio Declaration (UNCED, 1992), since embodied at the regional scale in Europe's Aarhus Convention (UNECE, 1998), and of potential significance to the Mekong Region in an international watercourses convention (UN, 1997). As yet they are not inculcated into Mekong transboundary practice.

When considering options for a Thailand water grid to further irrigate its northeast provinces (Molle et al., 2009a), the Government of Thailand continues to ignore the spirit of its *responsibilities* by only minimally sharing its plans with the MRC. Under the terms of the key agreement and the subsequently negotiated procedures, all substantial water resources development projects in the Mekong River Basin are to be reported to the MRC secretariat so that all parties to the 1995 Mekong Agreement can understand and assess possible impacts of proposals. In practice, ambiguity about "significance" results in notification being minimal and deliberation about the grid with neighbours non-existent.

Despite this recent background of shallow transboundary cooperation about water resources development, constructive engagement between Mekong countries has increased substantially in the past 20 years. From 1999 to 2008 the five countries and two provinces that comprise the GMS had economic growth double that of the world economy, with international trade growth 25% higher than world trade, intra-GMS trade more important in all GMS countries and poverty reduced significantly (CIE, 2010). The complexity and sensitivity about transboundary waters has made it a difficult agenda item. However, new decision-support tools are being used in transboundary water governance, providing prospects for more informed and informing exchanges between Mekong countries.

4. Use of decision-support tools in Mekong transboundary water governance

In our framework we assign tools as being predominantly deliberative, technical, or advocacy in their orientation and use. Deliberation tools should assist the exploration of options, examination of technical outputs and contestation of discourses. Technical tools should bring scientific knowledge into decision-making processes. Advocacy tools underpin campaigns supporting, opposing or otherwise seeking to influence decisions.

4.1. Deliberation

Tools that should be explicitly rooted in deliberation include multi-stakeholder platforms (MSPs), environmental flows (E-flows) and scenario-building. An example Mekong MSP began with a high-level roundtable entitled 'Using Water, Caring for Environment: Challenges for the Mekong Region' convened at the 2004 World Conservation Congress in Bangkok. This initial event in a multi-step MSP included ministers from five Mekong countries (all but Myanmar) as well as non-governmental actors. Sensitive issues were tabled for discussion – inter-basin water diversions into Thailand, Salween hydropower development in China's Yunnan province, and threats to the Tonle Sap ecosystem that would be disastrous for Cambodia. At the time this was a significant achievement, specifically, bringing China and Lower Mekong governments, and non-state actors, within the same arena. The event served to register the Salween hydropower, Thailand grid and Tonle Sap threats as transboundary issues of high importance, that deserved to be the subject of multi-country, multi-stakeholder deliberation.⁹

Subsequent steps included the 'Mekong Region Waters Dialogue: Exploring Water Futures Together', covering governance issues in several sectors and at several levels. In short this MSP was intended to be "a regional multi-stakeholder platform organised to provide an opportunity for high-quality, multi-faceted, debate and learning that will contribute to improving water governance in the Mekong Region" (IUCN et al., 2007). It gave a boost to proponents of transparency and deliberation.

MSPs can help routinise deliberation, enabling complex water issues to be more rigorously examined in better informed negotiations (Dore et al., 2010b). This is not to say that MSPs are a panacea. For example, we have observed that MSPs can be captured by players who are able to frame and control the debate and keep it confined within the limits of their choice. We have also seen MSPs permitted to engage many stakeholders in good faith, but be ignored in subsequent decision-making (Hall and Manorom, 2010). Despite these caveats, we have found that networks and organisations with flexible and diverse links with governments, firms and civil society have been useful to convene and facilitate dialogues on sensitive but important topics for development in the Mekong Region (Dore, 2007; Dore and Lebel, 2010; Manorom, 2011). The outcomes of these are not primarily in terms of direct decisions on projects, policies or institutional reform; but rather, in making sure alternatives are considered and assessed, a diversity of views and arguments recognised and mutual understanding improved.

E-flows are another tool that can be employed in interactive ways conducive to social learning (Dyson et al., 2003; Lazarus et al., 2012). Discussing and setting E-flows regimes require the integration of a range of disciplines from across the social, political and natural sciences. Above all, it requires processes of cooperative negotiation between various stakeholders that help bridge their different and often competing interests over water. Hence, E-flows are well-suited to MSP approaches. There have been few applications of E-flows in the Mekong Region, but some with which the authors are very familiar include rapid E-flows assessments of the Huong River in Vietnam (IUCN, 2005), Songkhram River in Thailand (Blake et al., 2010), and Integrated Basin Flow Management (IBFM) project of Lower Mekong River (MRC, 2006), each of which have been recently reviewed (Lazarus et al., 2012). E-flows processes have substantial potential in the Mekong Region to assist river basin managers as they grapple with competing demands, including the need for environmental sustainability (Blake et al.,

2010; Lazarus et al., 2012). At present, however, the tool has only been used in academic or technical settings and has not yet been internalised into MSPs or influential decision-making arenas.

Deploying scenarios can enhance MSPs, E-flows and other deliberative forums. Scenarios should improve understanding of uncertainties not hide them. The goal of formal scenario analysis is to generate contrasting stories of what the future of a geographical area, or a policy sector, or an organisation might look like, depending on plausible combinations of known, but uncertain social and environmental forces. The analyst and others participating in the process should gain insight in the contrast between alternative stories. Good scenarios are rigorous, self-reflexive narratives: they attempt to be internally coherent, to incorporate uncertainties, and to be explicit about assumptions and causality (Lebel, 2006).

Mekong organisations have been experimenting with scenario-building. A project review was critical of the high-profile use of scenarios by the MRC in its Basin Development Planning Phase 2, being surprised by the absence of supporting storylines for modelling work that made it hard to gauge the possible sequencing of events, to explore assumptions and alternatives, and consider the responses of people to be affected by the infrastructure expansion at the core of the basin planning considerations (Lebel, 2010). The reviewer was concerned that the scenarios "are not plausible stories of the future, but little more than alternative model runs" using too few variables; and moreover, that "another limiting feature is the lack of attention given to uncertainties, exactly the type of analysis for which scenario planning is most suited". The MRC scenarios (MRC, 2011a) initially had a narrow concentration on more, or much more, hydropower and irrigation expansion. Over time the surrounding narrative became richer (MRC, 2011b), aided by the deliberative force of independent panels of experts (International POE, 2010; Regional POE, 2010); M-POWER fielded the regional panel of experts in response to the findings of PN67.

Our scenarios research (Foran, 2010b; Lebel, 2010) found that more deliberative use of scenarios in the Mekong Region could improve the accountability of major private and state actors involved in water resources development and management in several ways. First, by encouraging actors to be more explicit about the key assumptions they make regarding causal connections, benefits and risks. Opportunities need to be created for this to happen, either in discussions around a table, or through periods where reports and findings are open for scrutiny and comment; or, by forcing actors to explore timeframes beyond typical planning horizons, and considering alternatives beyond familiar comfort zones and, in so doing, help generate creative water-related use and investment solutions.

4.2. Technical

Transboundary water governance in the Mekong evidences the use of various technical tools that claim to influence decision making. Here we consider the entwined practices of cost-benefit analysis, impact assessment and several types of modeling (some of which underpin scenario-building processes).

Given that development projects inevitably have numerous and varied impacts, formal approval processes require cost-benefit analyses, monetisation of values, and compensation recommendations. Cost-benefit analysis produces estimates of Net Present Value and Internal Rate of Return comparisons; but, is prone to externalising factors that can't be easily monetised. At the strategic level for a sector such as hydropower, a tool such as least-cost expansion planning is also vital (Maunsell and Lahmeyer International, 2004). Cost-benefit analysis and least-cost planning will always be important, but are now complemented by EIA, social impact assessment, strategic environmental assessment (SEA), cumulative impact assessment (CIA), vulnerability assessment, etc.

⁹ Impromptu filming of the entire event by a bold Chinese NGO, and dialogue transcription by Earth Negotiations Bulletin (<http://www.iisd.ca/enbvol/enb-back-ground.htm>) further assisted the semi-official registration of the topics.

Environmental impact assessments are commonly undertaken in the Mekong Region, usually with a project focus and are often seen as the final step in a pre-ordained approvals process. In the project we were more interested in the recent arrival of other impact assessment tools, such as CIA and SEA. There have only been a few experiences with these tools in the Mekong Region. A CIA of the Nam Theun 2 hydropower project in Laos (ADB, 2004), was technically strong, but remarkably disconnected from the Nam Theun 2 approvals process. The tool was deployed, but its findings were hardly deliberated, as the decision to proceed was already locked in. Another major effort was undertaken to prepare a CIA of the Nam Ngum 3 hydropower project (ADB, 2008). This is just one of a cascade of up to 14 dams being planned for Nam Ngum river basin, also in Laos. As with Nam Theun 2, the deployment of the tool was driven by the requirements of the Asian Development Bank. Again, there has been little discussion of the CIA's findings in Laos, due to the restrained opportunities for deliberation. But, the requirements of public financiers such as ADB and the International Finance Corporation, coupled with the creation of a new Nam Ngum River Basin Committee, may yet see this CIA assist decision-making about cascade management by providing an object around which to catalyse discussions.

SEAs are gaining in popularity. In Vietnam, hydropower expansion has been assessed within the context of provincial hydropower plans (ICEM, 2008), and the national power development plan (Soussan et al., 2009). There are now efforts by the Asian Development Bank to progress the production of a rolling GMS energy strategy, after first applying an SEA filter,¹⁰ however, at time of writing the extent of the buy-in by the lead energy sector representatives in each country is questionable, with Lao government representatives being the most vocal in their scepticism.

A review of the application of CIA and SEA in the Mekong Region (Keskinen and Kumm, 2010; Keskinen et al., 2012) found that they are often used in a limited way, for example, with the strategic element missing, and as a political patch, in an attempt to depoliticise and technically justify development decisions. To be most useful and aligned with their strategic purpose possibilities, these tool need to be employed early, providing stakeholders with opportunities and context to participate in a meaningful way in decision-making arenas.

The way problems are framed – as investigation of the transformation of the Mekong waterscape by large hydro-infrastructure – as opposed, for example, to a detailed investigation of Mekong livelihoods transformation – ensures assessments still rely heavily on hydrological modelling. These only provide macro-level estimates of expected flows at particular nodes in a river basin, however, and cannot properly represent local complexity. They do not capture daily water level fluctuations or water quality changes and their relationships with aquatic ecosystems, most notably fisheries, and livelihoods. Hydrological analysis has focused on average monthly flow regime changes instead of the extreme years and events when hydropower impacts can drive natural systems over critical thresholds. Under the guise of sophistication, simple models have been used to legitimate interests, for example, by supporting a powerful narrative that a basin is ripe for further exploitation of its water resources: “the Mekong river system has significant tolerance for development, including of hydropower and water diversion for irrigation” (WB and ADB, 2006). It has been necessary to point out that “a river is more than a hydrograph, and the hydrological impacts (if the models are accurate) are not a proxy for drawing conclusions about ecological and social impacts” (IUCN et al., 2007).

Johnston and Kumm (2012) have reviewed various hydrological modelling activities in the Mekong Basin. Not many have given much support for a holistic and integrated approach in development impact assessment. Emerging plans for Mekong mainstream dam construction have highlighted the increasing need for information about ecosystem and social impacts and, consequently, are stimulating significant advances in modelling approaches to meet the “what if?” demands of inquiring observers.

Models can do more. A quest for greater coupling of hydrological and ecological systems (Richey et al., 2000) has gained momentum in the last decade. For example, models are being developed for Cambodia's Tonle Sap that predict how altered hydrological and sediment/nutrient regimes will affect riparian vegetation and the fisheries productivity of the lake (Kumm et al., 2006; Lamberts and Koponen, 2008; Sarkkula and Koponen, 2010). Climate and land use change are also being linked to water flows (Costa-Cabral et al., 2008; Hoanh et al., 2010a). There has also been progress in modelling sediment. An example of this work projects that more than 50% of total basin sediment load will be trapped annually by the Mekong mainstream hydropower cascade in Yunnan (Kumm et al., 2010). Existing and proposed dams in the Lower Mekong Basin would trap even more of the fertile sediments, possibly even 90% (Sarkkula and Koponen, 2010), with substantial likely negative impacts on Cambodia, including the entire Tonle Sap system, and parts of the Mekong Delta in Vietnam. A more robust and comprehensive sediment accounting for the entire system is yet to be done. More holistic models – including the MRC's Decision Support Framework, a watershed IWRM model, and a 3D flood, sediment and water quality model – have been integrated into an MRC Modelling Toolbox. Following this progress, a key next step is enhanced visualisation of the interactions in complex systems. In 2011, the MRC was able to launch a new portal system that brings a huge repository of decision support data into life. The Virtual Mekong Basin will likely catalyse rapid further development of integrated modelling applications.

In summary, we have found that the application of technical tools is seldom a neutral and scientific exercise insulated from politics and power relationships. For example, preparation of a strategic sector plan or an impact assessment can quickly transform into a political process where facts mingle with values and interests.

4.3. Advocacy

Campaigns can be considered a vehicle for the application of suites of advocacy tools, such as: lobbying, protesting, advertising, debating etc. Oppositional advocacy in (parts of) the Mekong Region is well-developed. Local, national or transnational networks of activists that are organised to resist dominant institutions, interests and discourses can play a large role in decision-making or decision-influencing processes (Dryzek, 2001). Wide-ranging analysis of advocacy has been provided, for example: exploring indigenous people's lobbying in the international arenas of the United Nations (Tauli-Corpuz, 1998); questioning whether global civil society is an opportunity or obstacle for democracy (Scholte, 2007); and documenting activist engagement in processes such as the World Commission on Dams (Briscoe, 2010; McCully, 2001; WCD, 2000). A subject of regular analysis is the controversial issue of the extent to which the “free, prior and informed consent” of project-affected people should guide project decision-making (Carino and Colchester, 2010). All these topics, as well as legitimacy and civil society strategies, are all highly relevant in the Mekong water context, as the following examples illustrate.

A major conflict in Thailand since the 1990s has been the battle over the construction, operation and consequences of the Pak Mun Dam, located in the northeast of the country, on the Mun River, near its tributary with the Mekong (Foran, 2006, 2010a; Foran

¹⁰ See ADB Regional Technical Assistance project #7764 ‘Ensuring sustainability of GMS Regional Power Development’.

and Manorom, 2009; Missingham, 2004; Amornsakchai et al., 2000). Project affected people at Pak Mun have learnt to mobilise, often in diverse coalitions, and capture public arenas of deliberation by undertaking, compiling and publishing their own data and research.

Under the slogan of “Our River Feeds Millions”, the Save the Mekong campaign has been catalysed and galvanised by the resurgent interest in planned dams for the Lower Mekong mainstream. Campaign supporters argue that these dams pose extraordinary threats to local livelihoods, biodiversity and natural heritage as the flip-side to energy and income benefits. The campaign has successfully raised the profile of dam decision-making by Mekong governments through the strategic use of photography, media, letter-writing, and direct representation. For example, more than 23,000 signatures were attached to a petition warning of the negative consequences of Lower Mekong mainstream dams, sent to the Prime Ministers of Cambodia, Laos, Thailand and Vietnam on 19 October 2009. Word of the campaign also reached distant parliaments in places such as the United States (The Straits Times, 2011) and Australia.

The Save the Mekong campaign is an example of using advocacy tools to influence decision-making processes and arenas. In a short time, it has succeeded in heightening the understanding of risks to ecosystems and livelihoods, and is pressing governments – both in and outside the Mekong Region – to take their responsibilities for project affected people, and nature, seriously. A major achievement of the campaign has been to succeed, despite available science being inconclusive, in reframing the perceived dams threats from environmental protection to food security and the potential for “irreversible economic catastrophe” (Brown, 2011). This has contributed to greatly elevating the issues in the minds of regional and international policymakers.

Resistance can be fertile (Dryzek, 2001), but can also be dangerous. If perceiving decisions or plans over water as unfair, people can choose to resist through protest, or refuse to take the actions demanded of them (Scott, 1985). This can be a high-risk action in parts of the Mekong Region. Those with more power can choose suppression, to enforce or overturn decisions. Water resources development disputes can fuel or be a source of conflict, especially where there are wider tensions in society. Pak Mun had violent times. But, Myanmar is currently the most extreme case in the region, where resistance has spilled over into violence. There is military-led and resistance-led violence associated with several recently completed hydropower projects and others under construction (Burma Rivers Network, 2011; Environment News Service, 2011). For example, fighting erupted around the Chinese Tarpein Dam in northeast Myanmar in June 2011 between Kachin militia and government forces, with reports of at least 10,000 people displaced (Strangio, 2011). The Myitsone Dam, also in Kachin State, is another project being resisted, fueling substantial anti-Chinese sentiments, as this and other projects are seen as destroying local natural and cultural treasures whilst exporting energy and benefits to China (Din, 2011).

Resistance to these decisions will continue, particularly in the absence of any deliberation or negotiation opportunity. A decision in October 2011 by the Government of Myanmar to suspend the Myitsone project is being hailed as a triumph by local civil society campaigners, but the truth is more complex as the shifting geopolitical interests of the Government of Myanmar have also come into play. Of course lobbying can also be in the opposite direction. Many in China want the Myitsone dam to be re-started as for some it is a “bellwether on other major Chinese investments”, such as oil and gas pipelines (Kemp, 2012). Inevitably, it will be a protracted struggle, with accusations and counter accusations being made. Already foreigners and local greens are being targeted, with claims that “with the support of foreign funding, extremist environmentalists

were creating rumours and tricking people” (Boting, 2012). Decisions as large as Myitsone are complex. We simply argue that using our explanatory framework might usefully guide those trying to research and understand the detail of the shifting situation.

5. Discussion

5.1. Mekong water governance

The arenas in which tools are introduced in the Mekong Region are complex. Interests are diverse and capabilities of different actors to control agendas and shape decision-making processes are unevenly distributed. Many arenas are closed to key stakeholders, and those which are open may be irrelevant to decision-making. In general, decision-making unfolds in arenas characterised by debates and overlapping or antagonistic view points. Contested discourses (and associated options, ideas, values, narratives etc.), can be observed in confrontations at meetings, public hearings, and multi-stakeholder platforms, as well as in written texts and the media.

Rhetoric of participation is not always matched in practice. For example, Floch and Blake (2011), also part of the project, undertook transboundary water diversion research by examining a supply decision about whether or not to transfer “untapped” water from the “water-rich” Nam Ngum Basin in Laos, across the Mekong to the “water-stressed” northeast of Thailand. The researchers joined in a public hearing with a carefully selected audience of government officials, Thai scholars, and representatives from mainstream civil society organisations. The consultant team intended to test their working hypothesis on the practicality of the project, but discussions were disrupted by a group of protesters that took centre stage and demanded their voices be heard, that people “be informed about the project”, and “the water transfer between Thailand and Laos be cancelled”. In tracing the process, Floch and Blake found a wide gap between the rhetoric adopted both in national and international mainstream publications advocating more participatory practices and the *real politik* of water resources planning that seek to keep a lid on dissenting views.

Many decisions are taken on political grounds, by administrative fiat, or according to a particular, often narrow, web of interests. Hall and Manorom (2010) document numerous cases across the Mekong Region, such as Yali Falls, Pak Mun and Theun Hinboun dams, where scientific research was commissioned, ostensibly for decision-making purposes, only to be ignored by politicians making critical water infrastructure construction or operating decisions.

We observe that core decision-making processes about water in the Mekong Region are still often opaque to all but privileged insiders. Meaningful public deliberation is still the exception rather than the rule. Nevertheless, more recently, we observe a deliberative turn and hopeful signs of water governance change, for example: vibrant elements in the Chinese media interested in understanding and reporting the water-related perspectives of neighbouring countries (Xing et al., 2010); an increasingly inquisitive National Assembly in Laos; bold inputs to public policy-making debates by Vietnamese scientists; increased space for civil society analysts in Cambodia to engage in state irrigation policy debates; peoples’ environmental impact assessment in Thailand (Manorom, 2011) building on villager-led *Tai Baan* participatory action research (Srettachau, 2007); and, improvements in MRC forums resulting in more participatory analyses of project merits.

Lower Mekong mainstream dams are now being examined more openly. This is a result of many factors, including the MRC SEA process (ICEM, 2010), and the subsequent, formal, prior consultation process facilitated by the MRC, that has yielded various

technical contributions (MRC, 2011c), and opened an inter-government window for more informed discussions between Lower Mekong countries. Each of these processes has been improved by advocacy from civil society, science, academia and governments.

Across the Mekong Region we see River Basin Organisations (RBOs) being created ostensibly to address all types of land and water resources challenges. Thailand has created RBOs across the country. Vietnam has also experimented with the establishment of RBOs in several places, including the Red River (Molle and Hoanh, 2009), the Sre Pok, and has recently committed to another for (at least) the Vietnam portion of the Se San. In 2010, the Lao government also enacted a decree to establish RBOs and is proceeding to do just that. In 2011, Cambodia debated a river basin management sub-decree that will also establish RBOs across the country. This wave of RBOs are obvious candidates to experiment with the application of deliberation and technical tools as a way of enriching the multi-actor engagement they are supposed to encourage and facilitate.

More generally, we note that among early efforts, deliberative engagements vary hugely in inclusiveness, quality of content, structure, and how they are facilitated. As a result, the quality and influence of those conversations and relationships varies. Dialogues, good and bad, broad and narrow, may all influence negotiations and decisions that are crucial to improving water governance – but, clearly, more needs to be done to improve their implementation if they are to contribute to their full potential.

In the Mekong Region more informed and informing, multi-stakeholder deliberations, that are sensitive to different scale and level interests, appear crucial to off-setting power imbalances, and increasing transparency and accountability within the politics of water. A shift to a more constructive and deliberative water politics would be assisted by the fostering of a community of water governance practitioners, analysts and policymakers that understand the influence of context and drivers, and the potential and limitations of decision-support and -exploration tools.

5.2. Benefits and observations from using the framework

The framework we have developed for analysing transboundary water governance assists our understanding of engagement and decision-making involving socially complex water. Each heading and sub-heading in the framework acts as a prompt to the analyst to take stock of the situation being assessed and reflect on key aspects. The framework acknowledges the centrality of power and politics but is not subsumed by these topics. Context, drivers, arenas, tools, decisions and impacts all matter. The benefit of using the framework is to keep all these elements within the realm of the analysis.

Though it may be power that enables, the framework reminds, and our experiences shows, that it is drivers that shape actors. Interests are often reflected in the preferred discourses and institutions that actors privilege. Drivers also influence tool selection. For example, adherents to discourses that trumpet transparency and accountability will tend to agree to the deployment of deliberation tools, and use of technical tools in more deliberative ways. On the contrary, adherents to scientific rationalism may have a natural tendency to deploy technical tools, such as modelling, in efforts to find techno-answers rather than as stimulants for more deliberative modes of scenario-building and debate.

Tools can become boundary objects of debate within arenas. We have found that, used in a deliberative setting, technical tool potential can be unlocked when their process or product becomes a boundary object, serving as an interface among different communities of practice (Guston, 2001; Star and Griesemer, 1989). Effective boundary objects help bring together different types of expertise – scientific, managerial and political. Boundary objects, as devices supporting research-action arenas (van Kerkhoff and

Lebel, 2006) and assessments (Cash and Moser, 2000), can help bring different forms of knowledge together and lead to co-production of new knowledge. The ambiguity and flexibility of boundary objects allows different parties to continue conversation and negotiation without having or requiring identical understandings or objectives. For example, in our Mekong illustration, the SEA of Lower Mekong mainstream dams (ICEM, 2010) became a boundary object. In committing to a participatory process, the tool-wielders found themselves in the middle of a multi-sided debate where both facts and values were in dispute. The SEA process provided a space for debate that had not previously been available. The SEA product was also a critically important knowledge input for the subsequent, MRC secretariat's review of the Xayaburi dam proposal (MRC, 2011c).

Tools can contain or further empower actors. For example, use of a deliberation or advocacy tool can be a counter to obvious power imbalances. In situations where power assets are unequally shared, a campaign that successfully targets particular issues or opponents, can level the playing field. The Save the Mekong campaign provides another illustration. The campaign has competently reframed the debate about Lower Mekong mainstream dams via its multi-pronged efforts that include: use of the local and international media, regional and international politicians; and behind the scenes support for legal challenges that aim to ensure claims and counter claims are tested in the deliberative arena of the Thai court system.

In summary, the framework provides multiple points of entry to an analysis and can be used to map complex water governance situations. Used in this way it can assist those seeking both an overview and an understanding of specific aspects that are inter-related.

6. Conclusions

In the Mekong we have found evidence that water resources-related allocation choices can be improved by bringing into arenas different perspectives and fostering deliberation to inform and shape negotiations and decisions. Specifically, we suggest that water governance practice will be improved when:

- ... multi-stakeholder platforms exploring alternative futures, are deployed to build trust and cooperation needed for actors to work together to help resolve water allocation issues;
- ... environmental flows assessments are used to improve effective knowledge for water allocation, by clarifying risks and benefits of different flow regimes on different water users and ecosystems;
- ... scenario building, with the participation of marginalised peoples' representatives, is used to improve transparency in water resources-related allocation by clarifying and probing actors' assumptions and motivations;
- ... strategic environmental assessment is used to explore the broad impacts of existing, proposed and alternative development policies and plans early on;
- ... holistic modeling is used to quantitatively assess impacts of scenarios and development policies and to generate base information for EIAs, SEAs and CIAs;
- ... oppositional advocacy pressure is maintained to ensure that political space is available for civil society and concerned actors to safely contest and contribute to policies, proposals and decisions;
- ... prior to making major infrastructure investments, that scenario building, impact assessments, multi-stakeholder dialogue and transparent negotiations become a part of normal practice;

- ... negotiation processes retain both elements of competition and collaboration, realising they will never attain perfect consensus, but having an emphasis on coming to fair and workable agreements.

Within and beyond the Mekong, a multitude of diverse actors wrestle with drivers and tools within arenas that produce or influence water-related decisions. Appreciation of actor and arena dynamics is required. The framework for analysing transboundary water governance complexes assists our understanding of decision-making that is saturated with politics and the exercise of power. In addition to highlighting connections, the heuristic framework also includes desirable attributes of decision impacts. Policymakers and practitioners should pay full attention to the fairness and sustainability of allocation and associated investment choices. Ideally decisions will be the result of an informed and negotiated process that has assessed options and impacts, respected rights, accounted for risks, acknowledged responsibilities and sought to fairly distribute rewards – the essence of deliberative water governance.

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