

CONTESTED WATERSCAPES

in the
Mekong Region

HYDROPOWER, LIVELIHOODS AND GOVERNANCE



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Songs of the Doomed: The Continuing Neglect of Capture Fisheries in Hydropower Development in the Mekong

Richard Friend, Robert Arthur and Marko Keskinen

INTRODUCTION

Since early 2007 there has been a rapid acceleration in hydropower development in the Mekong Basin. The value and importance of capture fisheries in the Mekong Basin and the threat of hydropower development to their productivity and sustainability is now well established, widely cited and rarely challenged (MRC, 2003; ADB, 2004; MRCS/WUP-FIN, 2007). Yet, despite this, on the rare occasions in which fisheries enter public debate on hydropower development, they do so in a constrained manner, as something of an afterthought and as an unavoidable, slightly unfortunate, cost of the inevitable march of progress and development.

Fisheries are being downplayed rather than completely denied. There are several factors that appear to be at play. Some of these relate to the nature of policy-making processes, knowledge production and power (e.g. Hirsch 2003; Sneddon and Fox, 2006), and, of course, to the enduring potency of a hydropower-based regional development narrative that traces its roots to the 1950s (Bakker, 1999). These dimensions of policy neglect have been discussed elsewhere.

There is something more deeply ingrained in this neglect. For even when debates about capture fisheries do emerge – whether within the fisheries and

hydropower sectors or more broadly – the discussion reverts to a ‘conventional wisdom’ that the capture fisheries are doomed, facing a very bleak future under practically any circumstances. While similar narratives about the future of fisheries can be observed elsewhere in the world (Pauly, 1990; Wilson et al, 1994; Béné, 2003; World Bank, 2004; Thorpe et al, 2005), it is important to consider how they endure in the Mekong given their significance in terms of global fisheries production, and the special historical, cultural, social and economic importance of capture fisheries in this region. The aim of this chapter is to place this ‘conventional wisdom’ of doom under closer critical scrutiny. In doing so, this chapter builds on recent work addressing policy that combines the critical analysis of the arguments, assumptions and narratives that underpin policy approaches (Roe, 1995; Shore and Wright, 1997; Hajer and Versteeg, 2005; Johnson, 2006; Verweij et al, 2006). Our concern is that the scale of these fisheries impacts and the implications are so far-reaching that it is important that these narratives and assumptions are explored in the public domain. So far, this has not happened.

Development policy is an attempt to shape the world by making complex problems identifiable and situations of uncertainty manageable. In legitimizing a certain course of action, narratives play a central role in development policy by creating simple storylines of how a ‘problem’ has arisen and will unfold, and, hence, what the necessary course of action should be. Development narratives are the ‘conventional wisdom’ that are so deeply embedded that they are rarely challenged, or even considered to be an area that is necessary to be critiqued (Roe, 1991; Johnson, 2006). Narratives legitimize certain types of knowledge and exclude others, and are the means by which actors and institutions make claim to action and ownership over resources (Fairhead and Leach, 1997).

The more complex the situation, the more such narratives endure (Roe, 1991). This is precisely what we see in development policy both within the worlds of fisheries and of hydropower in the Mekong region. Fisheries are complex, diverse and dynamic in many different ways (Wilson et al, 1994). Yet, fishery discussions and policies seem to be dominated by gross simplifications of this complexity, wrapped up in a narrative of doom that leads to their marginalization and neglect in development policy.

PERSPECTIVES ON THE ‘IMPORTANCE’ OF FISHERIES IN THE MEKONG

The story of the Mekong presents some unique dimensions to what appears to be a global tale. While the neglect of capture fisheries, particularly inland fisheries, in policy arenas is a phenomenon that is not exclusive to the Mekong Basin (see Thorpe et al, 2005), there are few regions in the world that have seen such a concerted and largely successful effort to raise the profile of fisheries and to

conduct extensive research on a range of fisheries issues covering biology, ecology, livelihoods and nutrition. This is what makes this story so interesting. We see that while this research has highlighted the importance of fisheries, particularly in terms of employment and nutrition, fisheries have increasingly slipped off the development agendas.

Certain themes have endured in development discourse in the Mekong region. In most of the plans for Mekong development from the early 1950s until the 1980s, fisheries were recognized as 'valuable' in some way. The large numbers of people engaged in fishing, and fisheries' central importance in nutrition, has been widely recognized for many decades (see Tubb, 1966). For example, the Indian Mekong Tonle Sap Team (1962, p1) start their report by saying:

The importance of fish in the economic life of Cambodia is too well known to need any special emphasis here. Apart from the fact that it constitutes one of the most vital ingredients in the nutritional content of the people, it is also an important commodity of export.

Yet, despite this recognized value, the role of fisheries in basin development visions during this period was minimal. For example, when describing the *Master Plan for the Mekong*, the executive agent of the Mekong Coordination Committee (Schaaf, 1966, p5) presented a vision that excluded fisheries, stating:

The project seeks the comprehensive development of the water resources of this lower basin, including mainstream and tributaries, in terms of hydroelectricity, irrigation, flood control, drainage, navigation improvement, water management and water supply, along with related far-flung economic and social growth, for the benefit of all the people of the area without distinction as to politics or nationality.

Even among fisheries experts themselves, a narrative of the limited future of fisheries can be detected dating back several decades. For example, United Nations Food and Agriculture Organization (FAO) Regional Fisheries Officer J. A. Tubb (1966) highlights the importance of Mekong fisheries, but also the limitations of scientific knowledge about the fisheries. He also draws attention to the 'almost cataclysmic changes in the ecology' (Tubb, 1966, p63) that will result from basin development plans, but concludes that such development could and should not be avoided:

Water is required and will be used for many other things other than fish production, for irrigation, hydroelectric power, domestic supplies, and these on the whole are likely to have a greater economic value than the mere maintenance of areas of water for the production of fish. (Tubb, 1966)

We see here the emergence of a central theme – that the developmental potential from capture fisheries will be less than from other development options, and that these losses can be managed even at a time in which the full value of fisheries is openly acknowledged to have not been adequately assessed.

A decade later, there was a further effort to understand the scale and importance of capture fisheries and potential impacts from basin development under the Mekong Basin-Wide Fishery Studies. Assessments, including estimates of the numbers of people involved in fishing, suggested that a quarter of the total population of the Lower Mekong Basin was involved in fisheries in one way or another (University of Michigan, 1976). Additionally, while recognizing the potential of basin development impacts upon the production and value of capture fisheries, similar conclusions were reached. Ultimately, it was suggested that improvements, particularly in the area of aquaculture, could increase the fishery yields so significantly that these possible losses to the capture fishery should not be a cause for concern (University of Michigan, 1976).

Capture fisheries started to have more of a public profile during the mid 1990s. This was driven partly by civil society concerns over impacts of hydropower projects, such as the controversial Pak Mun Dam in Thailand (Roberts, 1993; Bakker, 1999; WCD, 2000; see also Chapter 3 in this volume). At this stage, non-governmental organizations (NGOs), activists and independent researchers were generating important information on capture fisheries (Roberts, 1993; TERRA, 1993; Claridge et al, 1996). It was also influenced by the emergence of a revitalized Fisheries Programme within the Mekong River Commission (MRC) (Sverdrup-Jensen, 2002; Sneddon and Fox, 2006).

A central component of the MRC Fisheries Programme was an attempt to assess and value the productivity of the capture fishery, and from this to identify likely impacts as a result of water resource development, including hydropower (MRC, 1996). This approach had been influenced by an MRC-commissioned report in the mid 1990s, which argued for data and information on the potential impacts upon fisheries related primarily to ‘main stem dam developments’, but also ‘related to irrigation, flood protection, agriculture development, navigation and other changes (Hill and Hill, 1994). The MRC Fisheries Programme of the 1990s can be seen to be a response to this long-established hydropower agenda, and crafted largely in its shadow.

Additional core elements of the MRC’s Fisheries Programme have been similarly shaped to focus on managing reservoir fisheries (that would be created as a result of hydropower development) and on promoting aquaculture (with a later emphasis on indigenous species) as a strategy to cope with degradation of capture fisheries. The initial MRC interest in capture fisheries was thus very much framed in terms of understanding the potential impacts of water resource development. Originally, it was less driven by an interest in the fisheries for their own values and potential for economic development. However, it has grown to be the main source of information on the importance of capture fisheries in the region, and an

decline is thus seen as inevitable in the face of rising populations, and – along with such demographic changes – the overwhelming pressures of changes in land use and infrastructure development. For example, it is argued that as a result of ‘unprecedented pressure from overexploitation and environmental change, there has been a cumulative decline in total volume of fish caught and average size of fish’ (Bush, 2008, p332). Essentially, it is a storyline of unavoidable decline that draws on both the internal nature of capture fisheries as a commons resource, but also includes an implicit recognition of the threats to this resource that come from external developments.

The storyline is simple and appealing. By their very nature, fisheries have no clear boundaries, covering river systems and floodplains that straddle villages, provinces and nation states. Fish themselves are migratory and the habitats upon which they depend are highly dynamic. Whatever happens in one part of the fishery has implications for some other. Capture fisheries are thus easily presented as a classic common property resource facing the inevitable pressures of open access in the face of weak, ineffective management and with no barriers to entry for newcomers (e.g. World Bank/ADB, 2006).

These pressures are argued to be exacerbated by growing populations. Although there is no evidence of a serious discussion of whether populations of fishers are actually increasing, it is inferred by reference to general population increase and assumptions of population increase among poor people. While the arguments that fisheries, like other common pool resources, are of particular importance for poor people have been widely accepted (Smith et al, 2005), these have also become an explanation for the overwhelming threats that fisheries now face. For the story continues that as the numbers of people (and particularly the poor) increase, the threats on fisheries will intensify. For example, Wong et al (2007, p38) single out the ‘huge scale of subsistence fishing ... [that] is heavy and destructive and there is evidence of declining fish populations as a result’. This is very much what Pauly (1990) describes as Malthusian overfishing. While acknowledging the importance of fisheries for poor people, it presents those same poor people as the greatest threat to their sustainability.

A further dimension of this storyline is the inevitability of threats to the capture fishery that arise from the demands for development. This aspect implicitly recognizes that economic development will have an impact upon capture fisheries. But placed in the context of population growth and subsequent economic demands, these impacts are seen as unavoidable. Management of fisheries can only hope to minimize such impacts as best they can and that fisheries will become a subject for conservation in the face of development (Wong et al, 2007).

These arguments of impending doom have a long history in the Mekong Basin. For example, McCormick Smith (1925) expressed dismay at the apparent overwhelming pressure on the capture fisheries of Thailand, and documented local fishers’ perceptions of a widespread decline in production. His prognosis for the future was gloomy, arguing that the combined pressures of population growth and

economic progress would inevitably undermine the continued sustainability of the capture fisheries. These kinds of prognoses later appeared during the 1960s amid the early considerations of basin development (e.g. Pantulu, 1966; Tubb, 1966) and were influential in laying out the central elements of regional inland fisheries policy – conservation of fish stocks combined with the expansion of aquaculture.

The notion of the inevitable decline also suggests that even if capture fisheries are important today, the threats that they face are so insurmountable that, in the future, they will not be able to provide the benefits that they are acknowledged as generating now. A recurring theme is that fisheries production has peaked and, as in the case of the Tonle Sap, has potentially ‘exceeded the optimum supported by its ecosystem productivity base’ (Lamberts, 2006, p489). Without even needing to address the social, economic and cultural acceptability of the impacts of hydropower upon fisheries, the debate can easily be shifted towards future scenarios that no longer include the capture fisheries as a viable option. As we discuss, such a shift requires the combined notions of economic limitations to fisheries and the potential of viable alternatives.

Fishing is an economically marginal activity for poor people

The second storyline addresses the economic importance and developmental potential of capture fisheries. The fact that many people engage in some form of fishing becomes less of a concern if this engagement is somehow marginal and with only limited potential for economic development.

Across the Mekong Basin the vast majority of people fish as part of a diversified household livelihood portfolio (e.g. Dixon et al, 2003; Smith et al, 2005). There are relatively few people who engage as full-time professional fishers. In Laos, for example, over 90 per cent of the catch may be attributed to rural people for whom fishing is not a primary activity (Lorenzen et al, 2000). Capturing the significance of this fishing activity can be a challenge (Keskinen, 2003). There are no reliable figures on the numbers of people engaged in fishing (see Coates, 2002), but there are frequent suggestions that a majority of rural people across the basin engage in some form of fishing activity (Gregory and Guttman, 1996; Sverdrup-Jensen, 2002; Baran et al, 2006; World Bank/ADB, 2006). Where this kind of fishing activity is identified, it is most frequently referred to as a secondary or supplementary occupation (Ahmed et al, 1998). This terminology has important connotations: that fishing is of less importance than other activities; the numbers of people dependent upon fisheries and for whom fishery is important, and the extent of this importance, can be downplayed.

Fishing can also be presented as an activity to which people turn when other options are not viable – for example, as a coping strategy or activity of ‘last resort’ for the marginalized poor. This can be presented to reinforce arguments that fishing is essentially unimportant except for those who have no other choice. It acknowledges the importance of fishing for the poor and the potential implications

of degradation of their main natural resource. As Béné (2003) observes, this is a persistent argument in which the story goes, that poor people fish, and people are poor because they fish.

The combination of these arguments is that capture fisheries have limited opportunities for economic development. In the case of Thailand with a growing industrial marine fleet, inland capture fishing has been regarded as an occupation for the poor and having limited potential for development other than through the introduction of aquaculture, or through the promotion of alternative employment. In general terms, inland fishery is regarded as having no real future in its present form and no real prospects for economic development (Masae and McGregor, 1996). State policy on capture fisheries across the region has focused on a conservation strategy of minimizing degradation, but, as we discuss below, has concentrated efforts on increasing production through aquaculture and stocking (Bush, 2008).

An additional dimension of development policy targeting fishers themselves has been to promote alternative livelihoods, moving fishers into other more productive economic activities. Picking up on the storylines of both the tragedy of the commons and limited opportunities for economic development, the World Bank and Asian Development Bank (ADB) recently stated the case for hydropower development: ‘It can be argued that the best basis for intervening in these “common property” problems is provided by the existence of alternative sources of income (as provided by irrigated agriculture) and development generally (as facilitated by the availability of power)’ (World Bank/ADB, 2006). This basic perception drives much of regional fisheries policy, with an emphasis on promotion of aquaculture and of alternative livelihoods (World Bank, 2004). Moreover, this serves as a convenient justification for the development of hydropower since the compelling and influential storyline is that through the generation of electricity to spur economic growth, the underlying cause for people’s dependence upon fisheries – namely, poverty – can be addressed.

Aquaculture can and should replace the fishery

The substitution of capture fisheries with aquaculture is a global storyline. For example, the World Bank (2007) suggests: ‘As production from capture fisheries stagnates, aquaculture is changing the face of our waters.’ In the Mekong it has also been argued that, whatever fisheries have provided in the past, the future lies largely in the technology of aquaculture. For example, it has appeared in the press: ‘Increasing the amount of fish consumed by Lao people is necessary, but is unsustainable without an expanded aquaculture programme’ (*Vientiane Times*, 2008a). In this way, aquaculture has emerged as a hegemonic discourse (Bush, 2008). Throughout the Mekong Basin, aquaculture dominates state-led fisheries policy (see Bush, 2008). Opportunities for increasing fisheries production have been presented almost exclusively in terms of aquaculture production.

These arguments for aquaculture have combined notions of the inevitability of fisheries decline, largely as a result of unavoidable population growth and development. For example, Edwards and Demaine (1997, p11) argue:

The need for aquaculture to provide increased supplies of fish should be considered in relation to capture fisheries. These currently dominate production, but are static or in decline globally and in most countries. As wild fish stocks are threatened by human population growth through overfishing and environmental degradation, the stimulus and need for aquaculture are greatest in developing countries where at least 90 per cent of the global increase in population is predicted to take place before the world population stabilizes at a level at least double that of today.

The promotion of aquaculture reflects development strategies that have focused on modernization and technocratic solutions. Mirroring the agricultural Green Revolution, the fisheries sector has attempted to generate a Blue Revolution based on the development of fish farming (see Coull, 1993). While these strategies have not been limited to the Mekong Basin, this part of Asia has been regarded as having great potential for aquaculture development; Thailand and Vietnam have witnessed dramatic growth in aquaculture production, both inland and coastal.¹

Recognizing the importance of the capture fishery, one ex-chief executive officer of the MRC reaffirmed the notions of peaked production and the threats of rising populations:

Capture fisheries are utilized at its maximum possible level already, and there are only limited possibilities for expanding it in reservoirs and other artificial water bodies. It is more than likely that the development of other sectors may lead to some decline in the overall fish production in the basin in the future.

With strong population growth in the Mekong Basin and a natural capture fishery that can hardly be expanded, aquaculture has an important role to play in food security as a whole. It is the most important source for an increase in fish production required to cope with the population increase. (Kristensen, 2001, p15)

This is a significant assessment as it comes from the one institution credited with raising the profile of capture fisheries and during a period in which there was an explicit commitment to the rhetoric of sustainable development within the MRC. Even within this historical and institutional context, these assumptions remained strong.

The notion that aquaculture is an inevitable response to the decline of the capture fishery has several dimensions. This creates a strange interdependence between aquaculture and capture fisheries in which the uptake of aquaculture by

alternative development pathways lies at the heart of attempts to reconstitute the current debate on water resource development.

The emerging counter-narrative presents the river as having value beyond that of water as a commodity. Notions of nature, wisdom and culture are joined around three key arguments:

- 1 the fundamental ecological, social, cultural and economic importance of capture fisheries;
- 2 the wealth of local knowledge of fisheries and river ecology; and
- 3 the capacity of local fishers to manage the Mekong region's resources sustainably and equitably (e.g. Claridge et al, 1996; Shoemaker et al, 2001; Missingham, 2003; Sretthachau and Deetes, 2004; Baird and Mean, 2005).

The counter-narrative also poses a powerful critique to the narratives of open access resources and notions of inevitable decline. Fisheries are argued to have been managed according to traditional rules and norms that have emphasized both sustainability and equity, with rural people acting as the custodians of river ecology (Shoemaker et al, 2001; Missingham, 2003). The degradation of resources is not a result of their perceived status as open access, but actually arises from the 'enclosure of the commons through power-based relations' (Béné, 2003, p965) where political influence, corruption and mismanagement are leading to illegal fishing and overfishing. The threat to managing fisheries is argued to arise from the encroachment of market forces and values, the failure of state-led management initiatives to recognize existing traditional practices, and the incompatibility of state-led fisheries management policies with local management regimes. As pre-existing custodians of river ecology, local fishers are argued to deserve preferential rights in river basin management ahead of other resource users (TERRA, 1993).

This section is concerned with placing the underlying arguments upon which this crisis narrative is based under a more critical examination.

Is there a decline and is this inevitable?

Underpinning the claims of inevitable decline is the argument that capture fisheries production has already peaked. While this argument has some intuitive appeal, it is very difficult to establish the actual status of stocks and production in the Mekong (Coates, 2002). This argument traced back to the 1960s is based on two seemingly contradictory elements: an assertion that fisheries production has peaked and, alongside it, the recognition that there is not enough evidence to determine whether this is so. For example Tubb (1966, p64) argues, on the one hand, that 'production may even now be approaching the maximum', then immediately acknowledges that 'reliable and comprehensive statistical data on production is entirely lacking'. Despite such apparent contradictions, these arguments have continued.

From a purely biological perspective, it is difficult to assess the natural productivity of the Mekong fisheries, which include a huge number of different species with different life cycles, a high seasonal abundance, the ability to migrate over large distances, and are largely invisible. Traditionally, a good deal of the information about a fishery is derived from data taken from what people actually catch. People fish with different gear, targeting a range of habitats, with different levels of intensity at different times of the year. Much of the fish catch is consumed within the household, and as such is invisible to outsiders. As a result, getting a picture of the status of stocks and production across the basin that can be compared from year to year remains a huge challenge (Coates, 2002; Lamberts, 2006). In addition, there is a high natural variability from year to year, particularly for some species. Gathering data and assessing trends is thus extremely difficult (Coates, 2002).

Information remains insufficient to determine whether stocks or production are in decline (Tubb, 1966; Hill and Hill, 1994; Baran and Myschowada, 2008), and certainly, if there is a decline, whether this is inevitable. An intriguing aspect of this argument of fisheries being in decline is that although it can be traced back several decades, it has endured even through a period in which the estimates of fisheries production have dramatically increased. For example, Baran (2007) summarizes the shifts in production estimates through the 1990s. Assumptions of decline have endured during a period in which official production figures have increased almost sevenfold.

This is not to say that concerns about declines of the fishery are not warranted; but this is essentially a management issue and, as such, it is crucial that the factors leading to any decline are identified correctly. Portraying decline as ongoing and inevitable takes the concern out of the sphere of fisheries management.

The tragedy of the commons rests on assumptions of a lack of management, and threats from rising populations of fishers. Considerable effort has gone into documenting the wealth of traditional local management practices in the region that have aimed to ensure sustainability and equity (e.g. Claridge et al, 1996; Degen et al, 2005; Garaway et al, 2006). In contrast to the perception of an unmanageable open access resource, the Mekong Basin provides a wealth of local management regimes, many of which are highly adaptive to changing social and natural environments. Even in cases that are supposedly open access, there is no free for all. There is evidence from across the basin of such management for a range of fishery resources, including river fisheries, floodplains and rice fields providing a range of benefits. Where management regimes are undermined, this is a factor of weak governance rather than due to the intrinsic nature of the fisheries (Thuon, 2004; Keskinen et al, 2007).

The assumption that fisheries face unavoidable pressures from rising populations of fishers also does not hold. Overall, there is no evidence that numbers of fishers are increasing or that where numbers of fishers are increasing that this is a result of population change rather than other socio-economic factors which draw people

to the fishery. Again, evidence from the Mekong suggests that the concern is not so much about aggregate numbers of fishers increasing, but about commercial encroachment and use of large-scale destructive gear, privatization of common resources and weak rule of law.

The misrepresentation of fishing within rural economies

The claim that fishing is somehow of secondary importance to local livelihoods or an 'activity of last resort' is also unconvincing. From our perspective, fishing is central to rural economies and fundamental to household livelihood strategies.

There have been several attempts at identifying the numbers of people engaged in full-time or part-time fishing. For example, a comprehensive and often-cited assessment carried out in Cambodia during the late 1990s distinguishes between fishing as a primary occupation or as a part-time occupation (Ahmed et al, 1998). This research suggests that from eight provinces surveyed, 10.5 per cent of the households are engaged in fishing or related activities as a primary occupation, with an additional 34.1 per cent engaged on a part-time basis, indicating a total of 1 million people engaged in fisheries in one form or another. For some areas of Cambodia, the involvement in fisheries is argued to be even higher, up to 90 per cent (Thouk and Sina, 1997).

Yet, these distinctions between primary and secondary occupations can themselves be misleading. The majority of people engage in fishing as a component of diversified household livelihood strategies. For example, in Laos it has been reported that almost everyone who has access to water, fishes (Claridge et al, 1996). The need is then to assess fisheries in this context (Heady et al, 1995; Friend, 2001; Shoemaker et al, 2001; Meusch et al, 2003; Garaway, 2005; Smith et al, 2005; Resurreccion, 2006). Looking again at southern Laos, fishing has an important role in the livelihoods of almost all rural households, and not just the poor, with fishing accounting for up to 70 per cent of household fish consumed and sold across different wealth groups within the same villages (Garaway, 2005). In addition, rather than representing an activity of particular significance in poorer households, people of all socio-economic classes fish and consume fish, with poorer households catching only slightly more on a per household basis (Garaway, 2005).

The majority of rural people across the Mekong Basin tend to refer to themselves as rice farmers (see Luco, 1997; Lorenzen et al, 2000). Yet, although rice farming holds a special place in people's own imaginations and the rural culture of the region, in many cases the low value of rice production and its limited contribution to household economies compared to fisheries is such that it could be argued that they are fishers who farm, rather than farmers who fish (Gregory and Guttman, 1996). As Keskinen (2003) argues for the situation in Cambodia, agriculture and fishing are so intertwined it is impossible to separate them; but the approach of census surveys framed in terms of primary and secondary occupations fails to capture the interdependence of household multiple livelihood strategies.

By considering the amount of time people invest in fishing-related activities, the importance relative to these other activities becomes clearer, even in the smaller-scale fisheries of upland areas (Degen et al, 2005). Other authors have argued that the fundamental importance of fisheries and agriculture (mainly rice production) and water management is such that rural regions of the Mekong can be characterized as comprising ‘river-based livelihoods’ (Shoemaker et al, 2001) or ‘wetland livelihoods’ (Friend, 2007).

Can aquaculture really expect to replace capture fisheries?

For proponents of aquaculture, there was some dismay that there were situations in which farmers proved reluctant to take up aquaculture, or if they did, remained reluctant to continue with aquaculture. Despite the efforts of aquaculture extension in many parts of the basin (e.g. the lower northeast of Thailand and southeast Cambodia), the uptake has remained disappointing (Pushpalatha, 2001) and yields and recapture rates differ from those expected (Lorenzen and Garaway, 1998; Garaway et al, 2001).

This led to a reassessment of aquaculture. It became apparent that in these specific areas, the capture fishery that had been assumed to be no longer productive was far more vibrant than had been appreciated and remained an attractive livelihood activity for local people. This in turn led to some important shifts in how aquaculture began to be promoted. It was no longer to be presented as a replacement to the capture fishery, but rather as a supplement, particularly for those engaged in diversified livelihoods (Garaway et al, 2006). Increasingly it was recognized that involvement in both aquaculture and capture fisheries could change from year to year, with people moving in and out of one or the other depending upon a range of factors, including availability of labour and credit, as well as the natural productivity of the capture fishery (Friend and Funge-Smith, 2002). There was also growing interest in the types of aquatic resource activities that combined elements of aquaculture and capture fishery, rather than seeing the two as competing activities.

The most widespread example of this aquaculture–capture fisheries interface is the stocking of capture fisheries (often referred to as ‘enhanced’ or ‘culture-based’ fisheries), where natural capture fisheries and reservoirs are stocked with farmed fingerlings and juveniles. This is a key part of government policy throughout the Mekong (Claridge et al, 1996; Warren, 2000; Welcomme and Vidthayanon, 2003). Experiences with village-managed culture-based fisheries in southern Laos indicated that stocking increased the potential biological production. However, the low levels of effort applied as a combined result of restricted access that accompanied the stocking and selected harvesting of larger stocked fish often meant that while the efficiency of harvesting increased, yields were no different from similar unstocked fisheries (Lorenzen and Garaway, 1998; Garaway, 1999; Arthur, 2004; Garaway et al, 2006).

that fisheries science undertakes, and determines where, when and how fisheries issues enter development debates. As such, it reinforces the current drive for hydropower rather than providing alternatives.

As with other development narratives, this crisis narrative of fisheries in the Mekong simplifies a set of complex issues. The many different fisheries of the Mekong cover a wide geographical area, with significant diversity in all of the key characteristics of a fishery – fishers, gear, habitats, species and fishing practice. Fisheries are characterized by complexity and uncertainty, particularly in large river basins driven by complicated and dynamic ecological processes. Understanding this diversity and complexity is far from straightforward. Developing management and policy in this context of complexity is even more challenging.

The major problem with the ways in which fisheries debates have been framed in the Mekong is that the complexity and diversity of fisheries have not been captured adequately, or have been lost completely. All that has endured is a gross simplification legitimizing a narrow set of management and policy options.

Fisheries science and research needs to seek ways in which they can be more influential. The evidence that has been generated has not been challenged directly – and yet seems to have had so little influence on the course of hydropower development. The problem seems to be the failure to generate compelling arguments that challenge this narrative of doom. Ultimately, the fate of the fisheries of the Mekong region just does not seem to matter.

In this chapter we have attempted to provide an initial critique of the crisis narrative and the assumptions upon which it is based within the context of hydropower development in the Mekong River Basin. We have suggested that the assumptions and arguments embedded in these storylines can be challenged based upon empirical evidence. Yet, even this only takes us so far. Deconstruction alone will not influence policy outcomes until alternative pathways can be demonstrated and articulated. Because of this, there is an urgent need to reframe the evidence and arguments of capture fisheries in the Mekong Basin. Essentially, this requires a move away from simply highlighting the socio-ecological, economic and cultural importance of capture fisheries to creating a counter-narrative (see Roe, 1995) that reverses established thinking, and demonstrates the complexity and multiple realities of fisheries, fishery livelihoods and the fishers themselves across the Mekong Basin. This needs to set out a future scenario of how fisheries and the people who depend upon them can contribute to setting development objectives. Such a rigorous and empirically based counter-narrative should seek to provide a future scenario in which fisheries are not merely a resource of conservation value, but a resource whose management is central to meeting the varied developmental challenges of the Mekong River Basin.

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NOTE

- 1 Aquaculture, like farming or fisheries, is a term that is used to cover a huge diversity of activity, in terms of technology, investment, scale and intensity, and with a variety of objectives from subsistence to export.

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