

**Participation by Women Fishers in
Community-Based Fisheries
on the Sekong River, Lao PDR**

Abstract

Rapid development of Laos' natural resources, without adequate investment in human capital, is leading to a loss of resilience in the country's river ecosystems. Millions of village fishers in this landlocked country have depended on subsistence fishing to feed their families for thousands of years. Fish populations are now decreasing due to deteriorating river water quality caused by dam construction, riverbank erosion from industrial plantations and river bottom dredging for gold. Almost one-half of all fishers in Laos are women, yet women fishers rarely participate in village fishery management committees now required by the country's first Fisheries Law adopted in 2009. Gender mainstreaming in natural resource management has been in the forefront of sustainable development since the UN Conference for Women in Beijing in 1995, but there has been little progress in gender mainstreaming in fishery management in Laos at the village level. This paper looks at the constraints and opportunities that women fishers experience on the lower Sekong River in Attapeu Province, an impoverished region of Laos with the country's highest dependence on fish for food security. It addresses cultural norms that render women fishers invisible, their vulnerability to environmental change because they have no livelihood alternatives, and the contributions that women fishers could make by applying principles of traditional ecological knowledge to village fishery management. From the perspective of ecological resilience, women fishers are the missing piece in a socio-ecological understanding of Laos' riparian ecosystems that, with government support, could return rivers to health.

**Participation by Women Fishers in
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on the Sekong River, Lao PDR**

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Overview

The release of the 2013 Little Green Data Book on World Environment Day contained a warning for Laos, a country that has built its rapidly developing economy on natural resources. The World Bank's annual compilation of environment data, the publication showed that Laos fell into the negative range indicating that the country was depleting its natural capital faster than compensating for it through investments in other assets, such as human capital or infrastructure.¹ One of the country's most rapidly deteriorating natural resources are its inland rivers which historically have provided subsistence food, primarily fish, for millions of Laotians. The rivers of Laos, however, have been pushed for decades by the government to provide not food for its people but water to support export industries, such as electricity generated by hydropower plants or rubber from industrial river bank plantations. As implied by the Little Green Data Book, without protecting the health of rivers in sources of food and livelihoods, this single-minded use of rivers will lead to a loss of ecological resilience in riparian ecosystems that are essential for this landlocked country.

Deteriorating river water quality and subsequent depletion of fish populations have put at risk the survival of thousands of fishing villages and their inhabitants, the human capital most closely

¹ *The Little Green Data Book 2013*. World Bank, Washington DC. 2013. The publication rated Laos' adjusted net savings (ANS) at -2.6, compared with Cambodia (+3.0), Vietnam (+16.8), Thailand (+20.8) and China (+35.1). A positive ANS indicates that a country is adding to its overall wealth and that economic growth is on a sustainable path.

associated with Laos' rivers. About one-half of these fishers are women, a demographic in Laos that has received little policy attention on the basis of gender and even less as major stakeholders in the survival of its rivers. From a resilience point of view, women fishers are an important missing piece in a socio-economic understanding of how to protect Laos' river ecosystems. This paper looks at a stretch of the lower Sekong River in Attapeu Province, the southernmost province of Laos, to illustrate the constraints and opportunities facing women fishers. The author conducted Field research in early 2013 through focus groups with women fishers in six Sekong villages and through a Mekong Water Dialogue with women fishers and village chiefs conducted by the International Union for Conservation of Nature (IUCN) in Attapeu town in February 2013.² Research findings indicate that integrating women fishers into river management at the village level could be an effective form of adaptive ecological management leading to more balanced water management and improved food security for Laos.

Women Fishers on the Sekong River

The Sekong River in southern Laos is one of the country's most important transborder rivers.³ It begins in the Annamite Mountains just over the border in Viet Nam, flowing east-west nearly across the width of southern Laos before it crosses into Cambodia where it joins the Mekong at Stung Treng in northeast Cambodia. Almost entirely rural, the population of the Sekong River basin lies below the poverty line, including two of Laos' poorest provinces—Attapeu and Sekong—along the Cambodian border. In Attapeu Province alone, more than 1 million people live in the Sekong basin, an area of once great terrestrial and aquatic biodiversity. The Sekong

² Charlotte Moser, "Participation by Women Fishers in Sekong Fishery Management in Lao PDR." (Interim Report, CGIAR Challenge Program on Water and Food-Mekong, Vientiane, Lao PDR. March 11, 2013.) <http://mekong.waterandfood.org/wp-content/uploads/Interim-Report-11-Mar-2013-Participation-by-Women-Fishers-in-Fishery-Management-in-Sekong-Basin-Lao-PDR.pdf>

³ "Lao Dams, Mining Ruining Sekong Water Quality in Cambodia," Radio Free Asia, June 25, 2013. www.rfa.org

watershed includes several important small river tributaries, such as the Xekaman and Xesou Rivers; many streams and ponds, among them the Huoay Ho; and one of the country's two major wetlands, the Beung Kiat Ngong Wetlands in adjacent Champassak Province. A significant number of people from ethnic groups, primarily lowland ethnic Lao, but also Lavea (Brao), Ouy, and Cheng, live in the Sekong basin, adapting their traditional practices for thousands of years to live in harmony with the river's aquatic ecosystem.

The Sekong River serves as a major source for subsistence food for people living in its basin. Southern Laos consumes more aquatic resources—and much less beef—than any other region of the country, with more than 70% of animal protein in daily diets derived from aquatic resources.⁴ While 35% of the total population of Laos engages in either full or part-time freshwater fishing, the figure jumps to almost 80% in southern Laos.⁵ Significantly more women engage in subsistence fishing in Attapeu Province than in any other province, almost equaling male involvement in fishing.⁶ In terms of food security, the contribution of women fishers may actually be much greater. Important gender divisions of labor exist in Attapeu fisheries that can skew the relationship between food security and fishing demographics because women fishers perform double-duty in two distinct fishing areas. While men fish on the Sekong and surrounding rivers from dugout canoes, women perform critical functions for their husbands such as repairing nylon gill nets, hauling catches to shore and handling post-harvest fish processing. Where women fish almost exclusively (often with other women or children) is in fish ponds, flooded rice paddies and other wetlands. Fish caught in the river are likely to be

⁴ K. G. Hortle. *Consumption and the yield of fish and other aquatic animals from the Lower Mekong Basin*. MRC Technical Paper No. 16, Mekong River Commission, Vientiane. 2007. [pp.http://www.mrcmekong.org/assets/Publications/technical/tech-No16-consumption-n-yield-of-fish.pdf](http://www.mrcmekong.org/assets/Publications/technical/tech-No16-consumption-n-yield-of-fish.pdf)

⁵ *National Gender Profile of Agricultural Households: Lao PDR*. Food and Agriculture Organization and Lao PDR Ministry of Agriculture and Forestry, Vientiane, 2010, p. 43.

⁶Ibid.

considered commercially more valuable, while the small fish, shrimp, snails, crabs, and frogs caught by women in wetlands are not. Nevertheless, depending on the availability of fish caught in the river, women spend significant amounts of time gathering family food from nearby wetlands.

If we catch enough to eat, we go fishing once a day. If not we go more. In the dry season, if our husbands catch big fish, we try to sell it in the market. We eat what we can't sell or what the women catch in the paddies or ponds. We get vegetables from the ponds and we eat bamboo. Some families in the village are hungry in the dry season.⁷

In part because of the importance of fish and aquatic resources for food security, FAO worked closely with the government of Laos to support the creation of the 2009 Fishery Law, the first for Laos.⁸ A key component of this law requires that community-based fishery management committees are established to generate local 'buy-in' to safeguard fish populations in the country's rivers, ponds, and streams. The Sekong basin played an important role in developing the Fishery Law. Based on a four-year project (2005-2009) on the Sekong River, World Wildlife Fund-Lao PDR produced the publication *Guidelines for Fisheries Co-Management*⁹ in partnership with the Lao government in 2009 as a companion document to the new Fisheries Law. In 2012, to support the Fishery Law, the World Bank approved a \$US 26 million grant to the Lao PDR Ministry of National Resources and Environment (MONRE) for Phase 1 (2012-2018) of the Mekong Integrated Water Resources Management Plan (MIWRMP), stipulating that two pilot village-based fisheries management committees be established on the Sekong River.

⁷ Moser, *op. cit.* Focus group discussion, Ban Hom, Samakhyxay District, Attapeu Province, Feb. 4, 2013.

⁸ Cacaud, Philippe, and Phouvient Latdavong. *Fisheries and Aquaculture in the Lao PDR—A Legislative Review*. FAO Regional Office for Asia and the Pacific, Bangkok, Thailand, 2008.

⁹ *Guidelines for Fisheries Co-Management*. Department of Livestock & Fisheries, Lao PDR; and World Wildlife Greater Mekong-Laos Country Programme. January 2009.

The Fishery Law addresses most of the urgent concerns related to fishing. Wetland catches are included in regulations of the Fisheries Law as well as illegal fishing practices. But there is little or no mention of women, among the most active—and most vulnerable--stakeholders in the country's fisheries, in the 2009 Fisheries Law, or in the *Guidelines for Fisheries Co-Management*. It comes as no surprise then that village fishery committees, typically appointed by village chiefs, rarely include women fishers.

Cultural norms play a major role in limiting participation of Lao women in fishery management. In fieldwork conducted by the author, women fishers were asked why they were not members of village fishery committees. They responded by saying that village chiefs had not invited them to participate and that men fishers dismissed any interest by women fishers to become part of village management.

In the past, women wanted to participate on the fishery committee, but the men did not allow this. Women weren't asked to be on the fishery committee. This is men's work. Men make the decisions.¹⁰

When village chiefs were asked why more women fishers did not serve on fishery committees, they replied that women were believed to be unsuitable to serve on fishery committees because they were unable to understand technical information about 'scientific' fishery management. Even though they might possess expert knowledge from generations of fishing, women acknowledged that they lacked confidence to speak up in front of men. When asked what would happen if they called a meeting to promote gender mainstreaming in village fisheries, women responded that men fishers would only attend if officials required it.

¹⁰ Moser, *op. cit.* Focus group discussion, Ban Sakhae, Xaysedtha District, Attapeu Province, Feb. 6, 2013.

Slow Progress: Gender Mainstreaming in Natural Resource Management

Gender mainstreaming has been a benchmark for economic development since at least 1995 when the UN Conference on Women in Beijing laid out an action plan for the next decade.

Three environmental action items were adopted at the conference: 1) to involve women actively in environmental decision-making at all levels; 2) to integrate gender concerns and perspectives in policies and programs for sustainable development; and 3) to strengthen or establish mechanisms to assess the impact of development and environmental policies on women. Laos signed onto the Beijing plan, sending an official delegation to the conference from the Lao Women's Union (LWU), the government body that has overseen women's affairs since 1972. However, the LWU statement to the conference defined a narrow realm of influence for the nation's women that still describes prevailing attitudes toward women: "Lao women promote and stimulate all economic sectors specially (sp) agriculture services, handicrafts and family economies. Indeed, Lao men refer to the Lao women's role as a chief household economist"¹¹.

In response to the Beijing environmental action items, a flurry of gender mainstreaming activities in the country's environmental agencies occurred in the years directly following the conference.

In 1999, LWU partnered with the Department of Livestock & Fisheries to promote women in aquaculture and community fishpond management, a government priority for commercial

development. By 2001, gender mainstreaming was actively promoted at the Mekong River

Commission through a program that encouraged incorporation of women fishers in sector

activities in all four Lower Mekong countries. Nevertheless, though the countries had similar

cultural norms, gender mainstreaming in natural resources management varied widely. In 2005,

¹¹ Statement by Mme. Onechanh Thammavong, Lao People's Dem. Rep., at the 4th World Conference on Women for Equality, Development and Peace, Beijing, China. September 4-15, 1995
<http://www.un.org/esa/gopher-data/conf/fwcw/conf/gov/950913184600.txt>

with women representing 25% of its Fisheries Department staff, Laos fared better than Cambodia in including women in fishery management. But, fewer than 10% of decision makers in the Lao Department of Livestock & Fisheries were women.¹²

Sex-disaggregated data of staff in Ministry/Depart of Fisheries in lower Mekong countries

	Cambodia	Laos	Thailand	Vietnam	Region
Total staff	1214	889	2725	161	4380
Female	171	225	998	41	1380
Female Ratio (%)	14.1	25	37	28	32

Female ratio in policy/programme decision-making at Ministry/Department of Fisheries

Country	Total number of officers in decision making position	Total number of women in decision making position	Female ratio in decision making position
Cambodia	134	8	6.0 ⁽¹⁾
Laos	72	7	9.7 ⁽²⁾
Thailand	257	75	29.2 ⁽³⁾
Vietnam	144	12	8.0 ⁽⁴⁾

Twenty years after the Beijing conference, with LWU leadership still overseeing women's affairs, overall progress toward gender equity has been slow though there have been some advances at the policy level.¹³ Statistics with disaggregated gender data, an important step to tracking the status of women in Laos, are beginning to appear on public record.¹⁴ Rural Lao women are generally better educated today than earlier generations, due primarily to road construction in the 2000s that make schools and towns more accessible to children from fishing villages. In field research focus groups, while women older than 60 often could not read or write, most women under age 40 had some primary school education and were literate. Despite their

¹² Kusakabe, Kyoko, ed. *Gender & Fisheries in the Lower Mekong Basin*. Regional Network for Promoting Gender/Women in Fisheries in Lower Mekong Basin, Mekong River Commission. February 2006.

¹³ The Lao National Commission for the Advancement of Women, established in 2002, was instrumental in formulating the government's National Strategy for the Advancement of Women, 2011-2015.

¹⁴ See: *National Gender Profile of Agricultural Households: Lao PDR*.

better educations, however, women often expected to spend their lives in their home fishing villages, repeating the lifestyles of their uneducated mothers.¹⁵ While hopes were high that their daughters would have a better life, they acknowledged that pressure on both family finances and women's workload increases while their daughters attend school instead of working at home.

Most of the younger generation today spends more time in school than their mothers and fathers did. The parents have to spend more time working because the children are in school now. This is hard for them. Most people want to support their children to get higher educations, but it depends on the family situation.¹⁶

The cycle of poverty that Sekong women fishers experience is reflected in the stark disparities in comparative educational attainment for women and men in Attapeu Province. In 2009, only 45.7% of women compared to 68.6% of men had completed secondary school.¹⁷

Commercializing the Sekong: The Impact of Water Quality on Community-Based Fisheries

The invisibility of Sekong women fishers has been compounded by the low priority, until the 2009 Fisheries Law, that the government gave to wild caught fisheries. Unlike coastal fisheries where ocean catches can boost export industries, inland fisheries like those of landlocked Laos contribute very little to GDP. The most productive fishing occurs during the rainy season when the river has historically teemed with fish migrating up from the Mekong to spawn in the Sekong's deep pools. Rain-fed paddies and wetlands also abound in other aquatic resources during the rainy season. However, with low river levels and little irrigation for year-round rice farming in Attapeu Province, both river and wetland catches are severely reduced in the dry season. Even when factoring in aquaculture, fisheries amounted to only 6.8% of Laos' GDP in

¹⁵ See: Kusakabe, Kyoko. "Gender Issues in Small Scale Inland Fisheries in Asia: Women as an Important Source of Information" in *New Approaches for the Improvement of Inland Capture Fishery Statistics in the Mekong Basin*. FAO and MRC: Udon Thani, Thailand, 2002. Kusakabe argues that government training for women focused only on the aquaculture industry is based on the belief that women are unable to accomplish tasks that are more complex than their traditional domestic duties, thereby predetermining women's livelihood choices.

¹⁶ Moser, *op. cit.* Focus group discussion, Ban Xaysy, Xaysedtha District, Attapeu Province, Feb. 5, 2013

¹⁷ *National Gender Profile of Agricultural Households: Lao PDR*. p. 43.

2005¹⁸. The majority of wild caught fish are consumed locally, rarely going outside village markets and thus are statistically unrecorded. Little or no research has been conducted to

Lao PDR Fisheries data					
2003	Production	Imports	Exports	Total Supply	Per Caput Supply
	tonnes live weight				Kg/year
Fish for direct human consumption	94 700	4 792	19	99 473	17,6

FAO, Lao PDR, National Fishery Sector Overview, 2006

estimate the economic value of inland fisheries to food security or to nutrition-related health costs in the Sekong basin. It follows that little, if any, research on the economic contribution that Sekong women fishers make to inland fisheries has occurred. Commercial return from wetlands, the domain where Sekong women fish almost exclusively, has similarly received little research. As the threat of climate change increases worldwide, wetlands as buffers for natural disasters like flooding are growing in importance for Laos. But, economic data about the contribution to food security of nutrient-rich Lao wetlands is hard to find. One exception is the government application to declare the Beung Kiat Ngong Wetlands in nearby Champassak Province as a Ramsar Wetlands Site of International Importance. In the Ramsar application, it was estimated that wetland resources, particularly fish, frogs and vegetables, contributed US\$850,000 to the local economy.¹⁹ Other examples can be drawn from neighboring Cambodia where a household

¹⁸ *LaoPDR Country Profile, FAO Fisheries and Aquaculture*
[sftp://ftp.fao.org/FI/DOCUMENT/fcp/en/FI_CP_LA.pdf](ftp://ftp.fao.org/FI/DOCUMENT/fcp/en/FI_CP_LA.pdf)

¹⁹ *Beung Kiat Ngong Wetlands, Pathoumphone District, Champassak Province, Lao PDR: Baseline Report to Ramsar Commission on Internationally Important Wetlands, International Union for Conservation of Nature, Vientiana, Lao PDR, June 2011, p. 12.*

study in the wetlands of Ream National Park estimated that wetland fishing contributed 65% of household income for families living around the wetlands.²⁰

A more obvious sign of the Sekong's commercialization is the impact of industrial development on the river's water quality. For decades, high commercial importance has been placed on the Sekong River as a source of hydropower.²¹ In 1999, Laos' first dam project was opened in Attapeu Province on the Houay Ho, a stream flowing into the Sekong River. The Houay Ho hydropower plant, which is Thailand's third largest energy supplier, created a reservoir that displaced 2,500 people from 12 villages in Attapeu Province, many of them from ethnic groups.²² Partially in response to the international outcry generated during Houay Ho construction, hydropower projects funded by public sources now require Environmental Impact Assessments (EIA) and greater community engagement in the planning process.²³ Before the EIA requirement, however, Sekong water quality was not systematically monitored or the river's changing biodiversity regularly evaluated by the central government's Department of Water Resources.²⁴ Starting in the 1980s, concessions to foreign investors led to deforestation to build rubber plantations on the banks of the Sekong or to dredge the river bottom for alluvial gold and gravel. By the mid-2000s, Sekong water was muddy, sometimes laced with fertilizer run-off from rubber plantations or traces of mercury used in mining. In 2003, a study by the MRC's Laos country office found that the microbiological composition of Sekong water had degraded to

²⁰ Pierre Horwitz. *Healthy Wetlands, Healthy People: A review of wetlands and human health interactions*. Ramsar Technical Report No. 6, February 2012.p. 34.

²¹ Dams are under construction now on the Nam Noy and Sekaman Rivers, both tributaries of the upper Sekong River. No new dam construction is planned on the lower Sekong, though silt from upstream construction is impacting the lower river and modifying water flow throughout the river.

²² For background, see Claudio O. Delang and Matthew Toro. "Hydropower-induced displacement and resettlement in the Lao PDR." *South East Asia Research*. 19(3), 2011

²³ Private sector development can take place without safeguards required for public development projects. See Guy Ziv, "Trading-off fish diversity, food security, and hydropower in the Mekong River Basin." *Proceedings of the National Academy of Sciences Early Edition*. January 2012.

²⁴ The relationship between the government's Department of Water Resources and the Department of Livestock & Fisheries, both located within MONRE, has not been fully explored.

levels significantly lower than the Mekong, indicating that the Sekong was no longer providing the once-rich food supply to support migrating fish during the rainy season. In 2008, as part of the EIA conducted for hydropower plant construction on the Xekamen River, a Sekong tributary, it was found that water quality was acceptable for aquatic life and agriculture but, for human consumption, it fell on the border between “impacted” and “seriously impacted”.²⁵ That warning was reiterated by the MRC in 2010 when it released its 2008 biomonitoring survey of Mekong tributaries.²⁶ The only sampling station on the Sekong in Attapeu Province, at Ban Xou Touat in Sanamxay District, was given a C rating for its water quality, the next to the lowest rating. According to the report, the low rating was due to “many changes” in the basin, including increased bank erosion, accumulated sand and clay, and changing water flow, all contributing to a deteriorating ecosystem on the lower Sekong.

Women fishers are impacted in different ways than men by deteriorating river water quality.²⁷ With fish declining on the river, river catches by their husbands are decreasing, putting more pressure on women to provide food from wetlands.²⁸ In turn, this puts more importance on wetland resources for family nutrition.²⁹ Men are traveling further and for longer periods to fish in more productive areas, such as the Houay Ho reservoir, or they may leave fishing altogether in search of unskilled jobs in towns or cities. In their husbands’ absence, women are left in villages

²⁵ MRC data showed that the Water Quality Index for human impact at Siem Pang, Cambodia, station had a value of 7.2, classified as impacted. Lao National Mekong Committee, *Profile of Sub-area Sekong 7L, Lao PDR*. p. 33.

²⁶ “Report on the 2008 biomonitoring survey of the lower Mekong River and selected tributaries,” MRC Technical Paper No. 27, Mekong River Commission, February 2010.

²⁷ See Valerie Nelson and Tanya Stathers, “Resilience, power, culture, and climate: a case study from semi-arid Tanzania and new research directions,” in *Gender & Development*, Vol. 17, No. 1, March 2009.

²⁸ Depending on the family poverty level, some men will also engage in wetland fishing.

²⁹ For a discussion about the nutritional value of aquatic resources from rice paddies and wetlands, see: Halwart, M. “Ricefield Fisheries and Rice-Based Aquaculture: Underestimated and Undervalued Resources,” in *Review of the State of World Fishery Resources: Inland Fisheries*, FAO, 2003.

to provide food for their families averaging in size from eight to 10 people. These responsibilities are added to women's already staggering daily tasks maintaining their families. In the rainy season, women fishers on inland rivers can spend up to seven hours per day assisting their husbands in river fishing in addition to working in rice paddies and riverbed farms.³⁰ Other studies have also shown that poor rural women, already vulnerable to economic shifts, are even more vulnerable to environmental change.³¹ Without training in alternative livelihoods, women fishers risk extreme poverty if inland fisheries falter.

We need to learn about more technical things, how to raise chickens, how to train for another job, how to learn handicrafts so that we can sell them. Only women sell fish but only those who can ride motorbikes can get to the village market. Some women can't even ride a motorbike.³²

Adapting Community-Based Fisheries for Greater Effectiveness

The 2009 *Guidelines for Fisheries Co-Management* drew on case studies from Fish Conservation Zones (FCZ) developed on the Sekong River by World Wildlife Fund for its project *Aquatic Resources Management to Improve Rural Livelihoods (ARL) of the Xe Kong Basin*. Over the course of four years, the project established FCZs in 34 locations in the lower Sekong.

Overfishing, caused by increased human population along the river, was identified as the reason to form conservation zones that would be managed by newly formed village fishery committees.

The project's participatory planning approach helped raise awareness by local and provincial authorities about the importance of coordinated village fishery management on the Sekong.

Ultimately, village committees were empowered to impose fines for illegal fishing practices,

³⁰ For a discussion of time poverty for women fishers, see: Elizabeth Matthews, et al. *A Gender Perspective on Securing Livelihoods and Nutrition in Fish-Dependent Coastal Communities*. Wildlife Conservation Society, Bronx, NY, 2012.

³¹ Nelson, p. 83.

³² Moser, *op. cit.* Focus group discussion, Ban Vaththad, Samakhyay District, Attapeu Province, Feb. 5, 2013

such as the use of dynamite or electroshock, or to keep poachers out of village fishing grounds. Nevertheless, the project fell short of recommending mechanisms to allow for community in-pur about water quality on the Sekong, a factor at least as important as illegal fishing to the decline of fish populations. It was also vague in addressing how traditional fishing practices might be incorporated for more effective regulation of the FCZs.

Project evaluation to assess the success of the village-managed FCZs, scheduled for 2012 three years after the project ended, never took place. However, based on the sample of six Sekong villages where the author conducted field studies, the stickiness of FCZs and the village fishery committees created to manage them appears to have been short-lived. Of the six villages, five had either abandoned management of their FCZ or had chosen not to create one. According to both women and men fishers, the primary reason for declining fish populations was no longer overfishing, but the deteriorating quality of Sekong water. Villagers recalled over and over the clear waters of the Sekong in the 1970s, before pointing to buckets of muddy water drawn that day from the river. Riverbank erosion and river bottom dredging were identified as the main causes of the degraded water. Only one village, which had established its FCZ in an area where water spirits were believed to live, still had a functioning FCZ, mainly because taboos frightened away villagers from fishing there. About 90% of the village fishery committees were men, usually appointed by male village chiefs.

The ARL Final Report offered some clues about why FCZs might not be sustainable as designed. According to the report, villagers were reluctant to believe that the historical abundance of aquatic life and easy access to resources in the Sekong might cease to exist and that new, more

“scientific” ways of ensuring the productivity of the river were needed. Resistance to, perhaps even denial about the need to adapt to environmental change was also expressed in focus group discussions with woman fishers. While older women fishers acknowledged that Sekong water quality had deteriorated and that fish catches were now much lower, they asserted with stubborn pride that they were maintaining tradition by fishing in the same spot where they had fished for almost 50 years, though fishing longer hours and catching less. The possibility of dramatic change on the Sekong, however, was not lost on some local leaders. When a villager asked the ARL team how long they would need to monitor the new FCZs, they were told by the District Governor: “When the people in your village want to stop eating fish, you can stop managing your fishery.”³³ When an annual yield of 14,120 tons of aquatic resources was estimated as a result of community fishery management, an official from the central office of the Department of Livestock & Fisheries stated: “You could never dig enough fish ponds to grow that much fish and, if you could, it would require a huge financial investment. By managing the river you can benefit from all that fish basically for free.”³⁴

Another explanation for why FCZs have been abandoned may be that establishing and monitoring the protected fishery areas did not require village participation from all stakeholders, particularly women or indigenous people, or that not enough traditional fishery management practices had been incorporated in FCZ management design. Of the six villages included in the 2013 field study--all villages where at least 50% of the population was women fishers--only three women were said to have participated in the fishery management committees. The absence

³³ *Aquatic Resources Management to Improve Rural Livelihoods in Sekong River Basin (ARL)*. Final Report, World Wildlife Fund, Vientiane. 2009

³⁴ Ibid.

of financial incentives may partially explain this. While village councils have been obligated to include a woman member of the LWU since the country's communist government was formed in 1972, the LWU representative is not paid for the substantial duties she performs to maintain a village's social cohesion, such as organizing village ceremonies and rituals. Taking on yet another unpaid village task may have discouraged women already experiencing 'time poverty'. On the other hand, since village chiefs are paid stipends by the government, male members of village fishery committees may have expected—but not received—compensation for their role on fishery management committees, leading to a decline in commitment to maintain the FCZs.

Documentation about the FCZ project also includes no mention of efforts to integrate 'pre-scientific' fishery management practices that Sekong ethnic groups have used for centuries to manage fisheries. Research has shown that, in many parts of the world, traditional ecological knowledge using an ecosystem approach that integrates natural resources with the social groups that use them has contributed to successfully managed watersheds.³⁵ In Laos, while many traditional fishing practices may no longer be used, spiritual beliefs about fish are still deeply embedded in the traditional knowledge of both men and women fishers. In the 'spirit system' of ecosystem management used by one ethnic group in Laos to protect the Mekong giant catfish on the Mekong River, for instance, particular importance was given to the destructive force of 'disturbed water' and to the belief that boats and fishing gear are living things possessed of individual powers and a life of their own.³⁶ The Sekong basin is a region that is both highly dependent on fish and has a large population of ethnic groups. While men fishers on the Sekong

³⁵ Fikbret Berkes et al. "Rediscovery of traditional ecological knowledge as adaptive management". *Ecological Applications*, 10 (5), 2000, p. 1252.

³⁶ Wolf Hartmann. "Historic Lao fishery for Mekong giant catfish sheds light on traditional management." Fisheries Programme, Mekong River Commission. *Catch and Culture*, Vol. 14, No. 1, June 2008, p. 18.

have adopted more ‘modern’ tools, such as dugout outboard motors and nylon gill nets to fish on the commercially more valuable river, women who are excluded from river fishing have continued to use traditional bamboo nets and implements to fish in wetlands.³⁷ Because of gender divisions of labor in fishing and general attitudes toward women in Laos as being unable to understand modern fishery management, women fishers might be freer to bring ‘pre-scientific’ concepts to village committees that could lead to more successful fisheries. It may not have been a coincidence, for instance, that the only village in the research study that located its still operating FCZ where fish spirits were believed to dwell was the only one where three women served on the fishery committee, including one who was the committee’s finance manager.

Integrating Women Fishers into Community-Based Fisheries

Even as Laos has announced its intention to meet the Gender Equality Millennium Development Goal by 2015, the three environmental action items adopted in 1995 at the UN Conference for Women in Beijing seem forgotten. Some effort was made, with varying degrees of success, in measuring progress toward women in government management of natural resources and in introducing gender policies in sustainable development plans. Where progress has fallen short is giving decision-making authority to women in environmental matters and, even more importantly, establishing mechanisms to assess the impact of environmental policies on women. Laos has made great economic strides since 1995, including its notable elevation in 2012 to the status of lower-middle income country³⁸ and its successful bid to join the World Trade Organization in 2013. To a large extent, this economic progress has been built on the country’s rich, but finite, natural resources during a period when climate change is requiring dramatic

³⁷ For background on traditional fishing gear, see: G.F. Claridge et al. *Community Fisheries in Lao PDR: A Survey of Techniques and Issues*. IUCN – The World Conservation Union, Vientiane, Lao PDR, 1997

³⁸ *Lao PDR Overview*. World Bank, 2013. <http://www.worldbank.org/en/country/lao/overview>

adjustments worldwide to business-as-usual in the environment sector. Revisiting the design process for the village fishery management committees on the Sekong River might bring into alignment the 20-year old Beijing action items and the Gender Equality MDG with the historic call made by the LWU in 2012 to designate more women as village chiefs.³⁹

Since women make up almost one-half of all fishers in the Sekong basin, they are major stakeholders in the success of village fisheries. One could also say that women fishers have the most to lose if village fisheries fail because not only are their options for alternative livelihoods severely limited, but they are also traditionally the primary caregivers of children and elderly family members as well as the custodians of traditional Sekong village life. With such powerful incentives to work for the success of fisheries, women fishers are positioned to make significant contributions to mechanisms that protect their way of life. However, as reflected in focus group discussions, leadership for women in village fishery management will only begin if there are district or provincial requirements to include women in fishery management. Through its strong and active presence in Sekong villages, the Lao Women's Union could serve as the government conduit encouraging this participation. Better still would be policies at Attapeu's Provincial Office of Natural Resources and Environment (PONRE) that promote gender mainstreaming in village fishery management.

If cultivated, the skills that Sekong women fishers could bring to fishery management are considerable. Acknowledged as the "chief household economist" in the official Laos government statement to the 1995 Beijing conference, women now are also the chief sellers of

³⁹ "More Women as Village Chiefs: Lao Women's Union" on *WorkLiveLaos* website, May 14, 2012. <http://www.worklivelao.com/more-women-as-village-chiefs-lao-womens-union/>

fish and other aquatic resources in local markets.⁴⁰ Adding rudimentary accounting skills to the support activities they bring to their husbands' river catches, women manage family funds from fish sales to buy supplemental food for the family and to save for children's educations.⁴¹

The diligence and attention that women bring to fish marketing could be used to fill important gaps in ensuring the success of village fisheries, provided that the government actively promotes their participation in management committees and if local authorities agree to support modest innovations in fishery management. For instance, numerous projects, in Southeast Asia and elsewhere, use women to monitor river water quality, a process that requires simple training from water managers and a reliable methodology for testing water samples.⁴² Engaging Sekong women fishers in this task would support the traditional role of women fishers in assisting their husbands' river fishing as well as follow well-documented traditional ecological practices of monitoring the quality of natural resources.⁴³ This methodology would also provide invaluable data for provincial water managers. Lessons learned from other gender-based inland fishery projects could similarly be applied in Laos.

⁴⁰ Kusakabe, "Gender Issues in Small Scale Inland Fisheries in Asia."

⁴¹ Women can only rent stalls in village markets in their husbands' names. Similarly, though they may have limited marketing skills, only men can conduct business with fish wholesalers, the middle-men who buy fish for resale to restaurants and town markets.

⁴² See *Community-Based Environmental Monitoring Program in Laos: Improving Water Quality for Lao Citizens*, The Asia Foundation, Vientiane, Lao PDR; *Building community resilience: natural resource management – Solomon Islands*. International Women's Development Agency, Melbourne, Australia.
<http://www.iwda.org.au/our-work/sustainable-livelihoods-natural-resources/tugeda-tude-fo-tomoro/>

⁴³ Berkes, p. 1254.

Conclusion

The concept of “Turning Land into Capital”, a slogan coined in the 1980s when Laos began to adopt policies that promoted a market economy, comes with the price of finding ways to adapt to changes in natural resources caused by development. Adaptation to change in Laos’ rivers, like the Sekong, will require complementing scientific information with knowledge from its fishers. Laos is also rich in human capital. Including the largely untapped resource of its women fishers could help bring balance to the country’s inland river ecosystems.

REFERENCES

Aquatic Resources Management to Improve Rural Livelihoods in Sekong River Basin (ARL), Final Report, World Wildlife Fund, Vientiane. 2009

Attapeu Situation Analysis. Mekong Wetlands Biodiversity Programme, on behalf of UNDP. Biodiversity Conservation and Sustainable Use Programme. Vientiane, Lao PDR, 2006.

Baird, Ian G. and Mark S. Flaherty. "Mekong River Fish Conservation Zones in Southern Laos: Assessing Effectiveness Using Local Ecological Knowledge." *Environmental Management*, Vol. 36, No. 3, 2005, p. 439-454.

Baird, Ian G. and Bruce Shoemaker. *People, Livelihoods, and Development in the Xekong River Basin, Laos*. White Lotus Press, 2008.

Beung Kiat Ngong Wetlands, Pathoumphone District, Champassak Province, Lao PDR: Baseline Report to Ramsar Commission on Internationally Important Wetlands, International Union for Conservation of Nature, June 2011.

Beard, T. Douglas, Jr. "Ecosystem approach to inland fisheries: research needs and implementation strategies." *Biology Letters*, 16 February 2011.

Berkes, Fikret, Johan Colding, Carl Folke. "Rediscovery of Traditional Ecological Knowledge as Adaptive Management." *Ecological Applications*, Vol. 10, No. 5 (Oct., 2000), pp. 1251-1262.

Cacaud, Philippe, and Phouvient Latdavong. *Fisheries and Aquaculture in the Lao PDR—A Legislative Review*. FAO Regional Office for Asia and the Pacific, Bangkok, Thailand, 2008.

Claridge, G.F., Thanongsi Sorangkhou, and Ian G. Baird. *Community Fisheries in Lao PDR: A Survey of Techniques and Issues*. IUCN – The World Conservation Union, Vientiane, Lao PDR, 1997.

Country Gender Assessment for Lao PDR: Reducing Vulnerability and Increasing Opportunity. World Bank and Asian Development Bank, 2013.

Dankelman, Irene, ed. *Gender and Climate Change: An Introduction*. Earthscan. Published in association with International Institute for Environment and Development, London. 2010.

Delang, Claudio O. and Matthew Toro. “Hydropower-induced displacement and resettlement in the Lao PDR.” *South East Asia Research*. 19 (3), 2011.

Earle, Anton and Susan Bazili. “A Gendered Critique of Transboundary Water Management.” *Feminist Review* 103, 2013.

“A Gender Transformative Approach to Research in Development of Aquatic Agricultural Systems.” *CGIAR Research Program on Aquatic Agricultural Systems*. WorldFish Center, 2012.

Global Symposium on Gender & Fisheries. Seventh Asian Fisheries Forum, Penang, Malaysia.
1-2 December 2004.

Guidelines for Fisheries Co-Management. Department of Livestock & Fisheries, Lao PDR; and
World Wildlife Program Greater Mekong-Laos Country Programme. January 2009.

Gutierrez, Nicolas. "Leadership, social capital and incentives promote successful fisheries."
Nature. Published online 5 January 2011.

Halwart, M. "Ricefield Fisheries and Rice-Based Aquaculture: Underestimated and Undervalued
Resources," in *Review of the State of World Fishery Resources: Inland Fisheries*, FAO, 2003.

Hartmann, Wolf. "Historic Lao fishery for Mekong giant catfish sheds light on traditional
management." Fisheries Programme, Mekong River Commission. *Catch and Culture*, Vol. 14,
No. 1, June 2008.

Hilly, Zelda, Anne-Maree Schwarz and Delvene Boso. "Strengthening the role of women in
community-based marine resource management: lessons learned from community workshops."
SPC Women in Fisheries Information Bulletin #22, July 2012.

Hidden Harvests: The Global Contribution of Capture Fisheries. World Bank, May 2012.

K. G. Hortle. *Consumption and the yield of fish and other aquatic animals from the Lower
Mekong Basin*. MRC Technical Paper No. 16, Mekong River Commission, Vientiane. 2007.

Horwitz, Pierre, C. Max Finlayson, Philip Weinstein. *Healthy wetlands, healthy people: A review of wetlands and human health interactions*. Ramsar Technical Report No. 6, February 2012.

Kawarazuka, N. *The contribution of fish intake, aquaculture and small-scale fisheries to improving food and nutrition security: A literature review*. The WorldFish Center Working Paper No. 2106. The WorldFish Center, Penang, Malaysia. 2010.

Kusakabe, Kyoko. *Gender and Fisheries in the Lower Mekong Basin*. Regional Network for Promoting Gender/Women in Fisheries in Lower Mekong Basin, Mekong River Commission, February 2006.

Kusakabe, Kyoko. "Gender mainstreaming in government offices in Thailand, Cambodia, and Laos: Perspectives from below." *Gender & Development*, July 2010.

Kusakabe, Kyoko. "Gender Issues in Small Scale Inland Fisheries in Asia: Women as an Important Source of Information" in *New Approaches for the Improvement of Inland Capture Fishery Statistics in the Mekong Basin*. FAO and MRC: Udon Thani, Thailand, 2002.

Lao PDR Country Profile. FAO Fisheries and Aquaculture.

ftp://ftp.fao.org/FI/DOCUMENT/fcp/en/FI_CP_LA.pdf

"Mainstreaming gender in fisheries and aquaculture: from recognition to reality," in *State of the World's Fisheries and Aquaculture 2012*. FAO, Rome, 2012.

Matthews, Elizabeth et al. *A Gender Perspective on Securing Livelihoods and Nutrition in Fish-Dependent Coastal Communities*. Wildlife Conservation Society, Bronx, NY, 2012.

Meusch, Eric. “The Role and Nutritional Value of Aquatic Resources in the Livelihoods of Rural People: A Participatory Assessment in Attapeu Province, Lao PDR.” FAO, Regional Office for Asia and Pacific, Bangkok, 2003.

“More Women as Village Chiefs: Lao Women’s Union” on *WorkLiveLaos* website, May 14, 2012. <http://www.worklivelaos.com/more-women-as-village-chiefs-lao-womens-union/>

MRC Gender Toolkit. Volume 3: Mainstreaming Gender in Activities and Field Work. Mekong River Commission Secretariat, Vientiane, Lao PDR, September 2012.

National Gender Profile of Agricultural Households: Lao PDR. Food and Agriculture Organization of the UN and Lao PDR Ministry of Agriculture and Forestry, Vientiane, 2010.

Nelson, Valerie and Tanya Stathers. “Resilience, power, culture, and climate: a case study from semi-arid Tanzania, and new research directions.” *Gender & Development*, Vol. 17, No. 1, March 2009.

Profile of Sub-area Sekong 7L in Lao PDR. Final Report. Basin Development Plan Phase II, Lao National Mekong Committee, Mekong River Commission, January 2011.

Resurreccion, Bernadette P. "Gender, Legitimacy and Patronage-driven Participation: Fisheries Management in the Tonle Sap Great Lake, Cambodia," in *Gender and Natural Resource Management: Livelihoods, Mobility and Interventions*. 2008.

Sriputinibondh, Napaporn, et al. "Gender Mainstreaming and the MRC Fisheries Programme" in *Global Symposium on Gender & Fisheries*. Seventh Asian Fisheries Forum, Penang, Malaysia 2004.

Vunisea, Aliti. "The 'culture of silence' and fisheries management." *SPC Women in Fisheries Information Bulletin* #18, March 2008.

UN World Conference on Women, Beijing, 1995. Statement by Mme. Onechanh Thammavong, Lao People's Dem. Rep., at the 4th World Conference on Women for Equality, Development and Peace, Beijing, China. September 4-15, 1995 <http://www.un.org/esa/gopher-data/conf/fwcw/conf/gov/950913184600.txt>

Welcomme, Robin L. et al. "Inland Capture Fisheries." *Philosophical Transactions of the Royal Society: Biological Sciences*. Published online August 16, 2010 doi: 10.1098/rstb.2010.0168
Phil. Trans. R. Soc. B 27 September 2010 vol. 365 no. 1554 2881-2896.

Williams, Meryl. "Shining a light on gender in aquaculture and fisheries: Report on the 3rd Global Symposium on Gender in Aquaculture and Fisheries." *SPC Women in Fisheries Information Bulletin* #22, July 2012.