

Community Management of Mekong River Resources in Laos

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The Mekong River is one of Asia's greatest rivers. It is the lifeblood of millions of small-scale farmers and fishers in China, Burma, Thailand, Laos, Cambodia and Vietnam. In the Lao People's Democratic Republic (Lao PDR), the river is particularly important because for the landlocked country, the Mekong is "the Sea of Laos."

In southern Lao PDR, fisheries for native fish species constitute an extremely important source of subsistence

protein and income for local people. It has been estimated that wild-caught fish constitute at least 90% of the protein for lowland Laotians living next to the Mekong. Despite the extreme importance of fish to the diets and economics of communities along the Mekong, the resource, and the people who depend upon it, are in danger. Local fishers living in Khong District, Champasak Province, where over 100 villages are on

islands in the Mekong or are situated on the banks of the river, have reported severe declines in fish catches in recent years. These declines in fisheries have prompted villagers, and local government, to begin to address seriously the need for locally based conservation efforts. The Lao Community Fisheries and Dolphin Protection Project (LCFDPP),

supported by NGOs and the government of Lao PDR, is working closely with nationals to address the important fisheries issues of southern Laos.

Established in early 1993, after surveys and studies in 1991 and 1992, the LCFDPP has set up field stations in the fishing villages of Hang Khone and Hang Sadam, both of which lie on islands in the Mekong River that are close to the Lao border with Cambodia. The project's goals are to address both the short-term

that lie just north of the villages Hang Khone and Hang Sadam. The area is of particular importance, not just because it is the only place in the Mekong River in Laos where freshwater dolphins are found, but also because the area supports the largest fisheries for native fish species in the country. The project believes that effective conservation and resource management strategies require close consultation with local people, good field research involving villagers, and sound scientific methodology.

Because of the severe lack of scientific research on Lao Mekong fish and fisheries over the last two decades, one of the first jobs of the project was to set up a data collection program using an ecosystem-based approach. Beginning in April 1993, ten fishers living in Hang Khone were asked to become a part of an integrated catch-per-unit-effort (CPUE) fisheries data collection program. Since then, fishers have been

assisting the project by allowing project staff to record daily catch data according to species, weight and total length for each of the many fishing gears.

Fish specimens have been preserved and identified by experts in Mekong fish taxonomy. While many groups of Mekong fish species have been recently reviewed and revised, and many other



Women from Hang Khone Village carry large quantities of Pangasius conchopllus to their homes. The catfish were caught in large quantities during upriver migrations in late May 1994, using large wood and bamboo wing-traps. ALL PHOTOS BY I.G. BAIRD

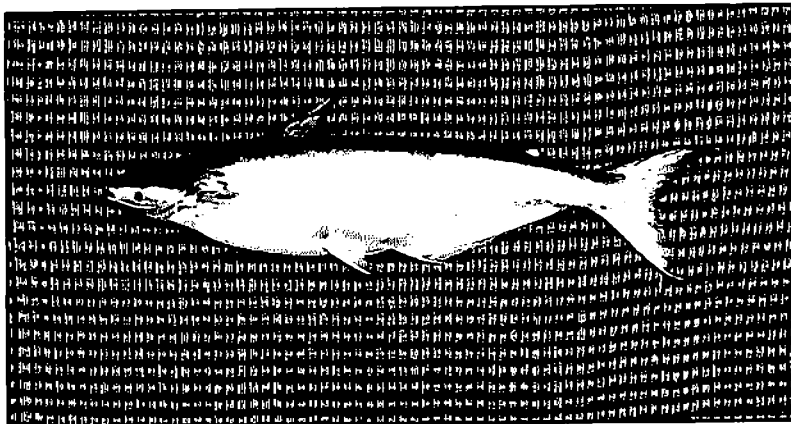
and long-term socioeconomic and river resource management problems of these two villages, and many others in the area. The project is also working with communities to conserve the threatened Irrawaddy dolphins that live below the great Khone Waterfalls, which include a series of channels, waterfalls, and rapids that flow between a number of islands

groups still required detailed revision, over 150 species have already been collected from fishers' catches. Some experts believe that there may be over 400 species in the Mekong River, greater than for any other Asian River. Many species still haven't been described by taxonomists, and the project has already collected some new species, including a previously undescribed species of giant goramy (*Osphronemus* sp.), which is being described by Dr. Tyson Roberts.

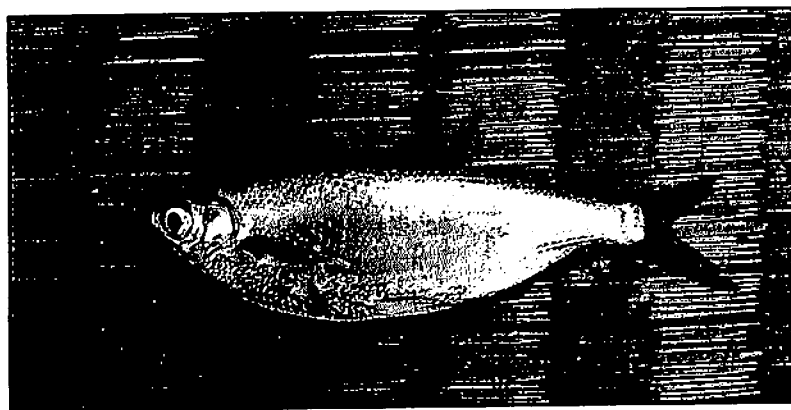
Apart from studying the fish species being caught by villagers, the project has collected a large amount of useful information about the seasonal abundances of various species in fishers' catches, and the migrations of many species. While many more years of research will be required before the full story of complex behavioral patterns and migrations of Mekong fishes can be fully documented, it has already been established that mi-

grating species, some of them probably long distance migrants, constitute the largest fisheries in Mekong River in southern Laos. For example, the catfish *Pangasius krempfi* is believed to migrate all the way from the Mekong Delta in Vietnam, passing Cambodia before finally arriving in Laos in late May or early June. These large fish, reaching up to 12-15 kg and over a meter in length, constitute one of the most economically important fish species for Hang Khone and Hang Sadam villagers.

The project has also begun investigating the seasonally inundated forests of the area. This research has included collecting vernacular information about the various species of plants and trees that are important to fish; collecting, drying, pressing and identifying plant specimens; and examining the stomach contents of various plant and forest fruit-



A 4.5 kilogram *Pangasius krempfi*. These long distance migrants are caught in large quantities in May and June each year at Hang Khone and Hang Sadam Villages, Lao PDR, after travelling up the Mekong River from the Mekong Delta in Vietnam.



The cyprinid *Paralaubuca typus*. This species migrates up the Mekong River past Hang Khone Village in large schools in January and early February each year. The species migrates downriver to Cambodia in June and July. At that time the females of the species are full of eggs.

eating fish species to determine how their feeding patterns are linked to the flooded forests. It is believed that the large tracts of flooded forests that line the Mekong River in northeastern Cambodia and southern Laos may be an important reason why the fisheries of the area have traditionally been so rich. The research that is being done is designed to alert both governments and local people regarding the need to conserve this part of the ecosystem. While governments and researchers still know very little about the flooded forests, locals have long recognized their importance - not only in terms as fish habitat and a source of food for fish, but also as ingredients in traditional medicines which are used extensively in the area. Although over 100 species of flooded forest plants have already been collected and identified by botanists, local fishers and

traditional medicine doctors, much more research is still required regarding these forests and their links to fishes.

Community-Based Management

In accordance with the Lao government policy to decentralize its government system, and their recognition that villagers may be the most suitable people to implement locally acceptable conservation and resource management strategies in remote areas, in terms of both forests and fisheries, the project has begun working with villagers and local government officials to make use of the great deal of traditional knowledge to set up "village-based conservation strategies." Village-level workshops have been organized to discuss fisheries problems and find ways that communities can realistically protect the resources to which they are closely

linked. Through these meetings, villagers have identified a number of problems: the over-use of nylon gillnets; the inappropriate use of some large wood and bamboo wing traps to target a large number of migrating fish species; the use of bamboo cylinder traps in streams to target fish that leave the Mekong mainstream as the river swells in May and June to enter flooded swamps and ricefields; the use of lights at night to harvest frogs and fish unsustainably; and the extensive use of explosives to catch fish in northeastern Cambodia.

On the suggestion of fishers, who believe deep pools in the Mekong are a key habitat for many economically important fish species, especially during the dry season, locally managed "fish conservation zones" have been set up according to local wishes. Already nine villages have set up a total of 13 "no fishing zones" in

the project area. Villagers in many communities have also set up rules to ban the use of various destructive fishing methods. These rules are intended to regulate their fishing activities and those of outsiders who come to fish in the vicinity. These village-based management rules, which always include the banning of explosives, chemicals and electricity for fishing, are put into writing at the village workshops after being fully debated by villagers, project staff, and local government officials. In many cases villagers have identified areas in need of attention that neither government officials nor the project staff were previously aware of.

The local government fully recognizes village fishing rules, and through empowering local people, many other villages outside the project area have learnt about the process and have asked to be allowed to do the same thing in their own communities. As a result, the Khong District government now has a policy to support the setting up of "fish conservation zones" in all the villages in the district, using the process developed by the project to decide democratically which areas can be protected with villager support.

Impact of Dam Construction

In compiling the information being collected, one of the most important goals of the project is to help educate the Lao government and other international organizations about the severe impacts that the construction of large dams would have on the native fisheries of the Mekong. Judging from catch and anecdotal data, as well as field observations by project staff, most economically important fish species appear to be highly migratory. The effects of dam construction on these species, and the Irrawaddy dolphins of the Mekong, would undoubtedly be severe. Other dams presently being planned for the Sekong River, an important tribu-



A woman at Hang Khone village processes large Pangasius krempfl catfish caught in gillnets, May 1994.

tary of the Mekong, would also have severe effects on many of these species. Yet, even most fish "experts" know little about the ecologies of most Mekong fish species.

When the impacts of large-scale dams are considered, more than just the diversity of fish life in the Mekong is at stake. Apart from destroying fertile farmland and uprooting huge numbers of people, flooded forest habitat would also be devastated even if low dams were constructed. This would have a severe effect on the fishes remaining after the dams had been constructed. Moreover, the impact on the lives and cultures of communities in the area would also be great. These communities have long adjusted their lives to take into account important fish migrations and related fisheries. Their cultures and traditions are invariably linked with the rhythm of the Mekong and the coinciding movements of fishes. To fishers, years when the water levels of the Mekong are unusually high are welcomed

because they know that in those years fish catches will be good. To dam builders, floods are a natural phenomenon that should be controlled. They have little understanding of the fact that Mekong fishes not only migrate up and down the Mekong River but also in and out of it. Many species feed and spawn in flooded streams, forests, swamps and ricefields after water-levels rise in May and June. They later return to the main-stream Mekong and other large rivers when water-levels drop in November and December. These complex life-patterns require increased research if information is to be available to planners before such projects are decided on.

Dams are presently being decided on based largely on the projects' "benefits", as perceived by engineers, politicians, industrialists and "developers." But even if good scientific information is available, will the communities be consulted? For example, large-scale dam plans for the Mekong at Stung Treng

and Sambor in Cambodia have been on the books for decades but the people in Cambodia and southern Laos (not to mention other riparian countries), whose lives would be forever changed by them, have never been informed about the plans. Nobody has ever asked them what they think. Nobody has ever asked them what they've learnt through generations of experience. Does anybody care about their efforts to conserve and manage sustainably the resources to which they are invariably linked? Do they stand alone? **G**

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