



# Catch and Culture

## Fisheries Research and Development in the Mekong Region

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### INSIDE

- Agreement on conserving giant catfish
- Tonle Sap dai fishery nets record haul
- Status of catfish farming in the Delta
- The importance of sharing data
- Manuals in Khmer and Vietnamese



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### Corrections and clarifications

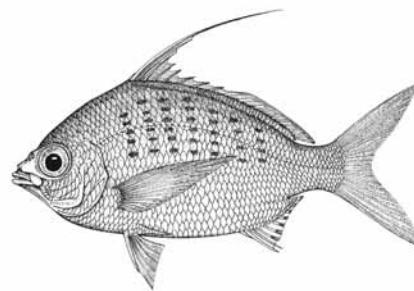
*Our article on trapping and transferring migrating fish across barriers in the December edition ("A human fishway' - simple solution to complex problem", Volume 11, No. 3) was incorrectly attributed. The authors of the case study are Kent G. Hortle, Ubolratana Suntornratana and Paveena Nedchum.*

*In the same edition, we failed to credit Joe Garrison for photographs on the Songkram River Festival in the special insert and lead story ("Festival highlights importance of fisheries in the Songkram River"). Joe's work also appeared in the catfish story ("Falling Vietnamese demand eases pressure on wild catfish fry").*



# Editorial

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There's something exciting happening in Chiang Khong in Thailand. Exciting that is for the Mekong giant catfish. The members of the Mekong Giant Catfish Association have agreed to stop catching the endangered fish in and instead to try to help conserve it. The area around Chiang Khong is where the Thai-Lao stretch of the Mekong meets Myanmar, and traditionally the local people have, for one month of the year, tried to catch the giants as they migrate upstream to spawn. No more. The fishers have agreed to stop fishing in return for financial compensation for their nets.

In another more regional initiative, the MRC-affiliated Mekong Wetlands Biodiversity Programme and the British government's Darwin Initiative are taking a new approach to preserving the Mekong Giant Catfish involving national, regional and international partners. Efforts to save the Mekong giant catfish from extinction have, to date, been largely uncoordinated and their effectiveness was unclear. It is hoped this initiative, based on good science and support of all stakeholders, will provide a sound regional strategy.

Still on catfish, but this time of the smaller variety, we take a look at the status of Viet Nam's thriving aquaculture industry. Our report highlights the need to standardise techniques and calls for stronger comanagement if Viet Nam wants to ensure the sustainability of both the environment and its level of production. We also examine the interesting prospect of introducing a third domesticated species into the aquaculture pool.

The Tonle Sap dai fishery is generally regarded as the most important fishery in the basin and as such has been closely monitored by the Cambodian Department of Fisheries and the MRC Fisheries Programme since the mid 1990s. So it is pleasing to report that last year's bagnet landings hit a new record, indicating that the fishery is still very productive. It seems human intervention in the form of tougher policing of illegal fishing practices may have been at least partially responsible for the increased catch.

Other features in this issue include a look at two new Khmer and Vietnamese publications on fishing gears, Cambodia's National Fish Day celebration, the importance of sharing data, news of a new national breeding centre in southern Viet Nam and the latest MRC Fisheries Programme staff changes.

We also have a special four-page colour insert on the Chiang Khong celebration for Mekong giant catfish conservation ceremony.

Selected articles from this issue of *Catch and Culture* will be translated into Khmer, Lao, Thai and Vietnamese. The PDF files can be downloaded from [www.mrcmekong.org](http://www.mrcmekong.org) as can all the features in English.

The Editors

# Fishers agree to help conserve critically-endangered Mekong giant catfish



Chairman Phoom (left) and Senator Tuenjai display the type of net that has been used to catch giant catfish. These gill nets are usually 3m deep and can be as long as 300m.

## ***Efforts to stop fishermen setting nets to catch Mekong giant catfish near their spawning grounds in northern Thailand seem to be paying off***

Phoom Bunnhak says he was eight or nine years old when he first saw his father catch a Mekong giant catfish (*Pangasianodon gigas*). "I was very happy," he said, recalling the event more than 40 years ago. "At that time, there was no buying or selling. We had to inform others to prepare buckets to carry the fish which was cut into small pieces to distribute to other villagers." Today, Phoom chairs the 68-member Mekong Giant Catfish Association in Chiang Khong, the centre of a fishing industry in Chiang Rai province in northern Thailand. The Association is now changing its focus from fishing to conservation of the giant catfish.

One of the world's largest freshwater species, the giant catfish can grow to nearly three metres in length and weigh close to 300 kilograms. The fast-growing herbivorous fish mainly eats algae. It was formerly widely distributed throughout the Mekong basin, but now it is extremely rare.

In Chiang Khong, about 100 kilometres south of the Golden Triangle where the Thai-Lao stretch of the Mekong meets Myanmar, the season for catching these giants as they migrate upstream to spawn lasts for barely a month. Opening in mid-April when the river's waters are at their lowest, it continues until the arrival of monsoon rains and the onset of the busy rice planting season in late May or early June. By preserving the flesh of the giant catfish with salt, a prize catch could traditionally provide villagers with a welcome source of additional protein during this slow

period following New Year festivities in April. In more recent times, holidays towards the end of the hot dry season have offered students the chance to go fishing for this icon species - success will bring high status to the young fishers.

By the time Phoom went into the business in 1990, the idea of catching giant catfish for local consumption had evolved into a commercial enterprise that coincided with Thailand's emergence as a booming regional economy. With improved cold-storage facilities, it was easier to meet demand from restaurants in big cities across Thailand. Although the Department of Fisheries was already operating a successful breeding program, the demand for giant catfish caught in the wild had skyrocketed in the late eighties.

Official records show that the annual catch in Chiang Khong more than doubled from 24 individuals in 1987 to a record 52 the following year, hitting a new record of 61 in 1989 (see chart on page 7). But after reaching a peak of 65 in 1990 (including 11 caught in Lao waters opposite Chiang Khong), the catch fluctuated for a few years and has been down sharply ever since. From 1994 to 2005, no more than 20 individuals were caught in a single year - and none at all between 2001 and 2003. During this period, the World Conservation Union (IUCN) re-listed the endangered species as "critically endangered", indicating that it faced an "extremely high" risk of extinction in the wild. Despite the alarm bell, villagers stuck to their nets. But catches remained low - seven in 2004 and only four last year including a 2.68 metre beast weighing 285 kilograms, the biggest since detailed records began in 1991.

Efforts to get local fishers to halt their activities came to a head in March during a meeting with Senator Tuenjai Deetes, a prominent social and environment activist in Chiang Rai. According to Phoom, she appealed to the Giant Catfish Association to stop fishing during the 2006 season to mark the 60th anniversary of King Bhumibol's ascension to the throne. "I replied that we'd stop forever if we received compensation," he said.

Under a deal reached on March 29, Phoom explained, Senator Tuenjai and the IUCN are jointly committed to providing each of the 68 members of the association with 20,000 baht (\$500) representing the cost of fabricating each of the specially designed large-mesh gill nets. The first payment of 10,000 baht (\$250) was scheduled to be made before May, with the second instalment due by October.



Phoom Bunnhak heads the Giant Catfish Association in Chiang Khong which now has 68 members.

To avoid being squeezed by middlemen, the association has a monopoly on marketing all giant catfish caught in Chiang Khong and offers guaranteed prices to local fishers. Over the years, Phoom said that these have fluctuated between a low of 100 baht (\$2.50) a kilogram and record 300 baht (\$7.50). In more recent years, fishers have been receiving between 130 baht (\$3.25) and 250 baht (\$6.25). Based on the higher recent price, a good-sized catch of a 200-kilogram fish could therefore be worth as much as 50,000 baht (\$1,250). Using the same price as a reference, the total compensation of 1.36 million baht (\$34,000) for 68 nets is equivalent to 27 giant catfish of identical size. The last time the haul came even remotely close to this was in 1999 when 20 fish were caught in both Thai and Lao waters. Many weighed more than 200 kilograms each.

### Hopes for a new beginning

With fishers still waiting to receive their first payment, the annual ceremony marking the start of the giant catfish season this year signalled a positive transition. Although the traditional practice of sacrificing chickens has been abandoned, the local catfish god is still revered in Chiang Khong. A procession by more than



Chiang Khong is proud to be known as the first place in the world to breed Mekong giant catfish in captivity.

a dozen fishing vessels kicked off this year's parade on April 18 and was followed by various dances, including a Chinese-style lion dance featuring a mythical white creature with a goat's head. After a round of speeches by local officials, Senator Tuenjai and Phoom addressed hundreds of villagers and then posed together for photographers holding a symbolic net. The assembled guests then moved to riverbank to release thousands of giant catfish that had been bred in captivity. According to Mr Sanae Polprasithi, a retired fish biologist who pioneered the breeding of giant catfish two decades ago, the annual ceremony is now at a crucial turning point. "This is the first year, the beginning," Sanae told a group of visitors. "We have moved from a hunting ceremony to a conservation ceremony."

But even if the payoffs to fishers are disbursed as planned, there's nothing to guarantee that giant catfish won't be caught in the future in the waters around Chiang Khong. It is possible, for example, that nets with a smaller mesh size designed to catch another big rare fish known simply as the giant catfish (*Pangasius sanitwongsei*), could accidentally snare the critically-endangered species. "If that happens, the district office says it's okay as long as the size is less than 100 kilograms," the head of the Giant Catfish Association said. The possibility that Thai fishers may violate the ban cannot be ruled out either. Phoom noted that one member was recently expelled

for violating rules. As for Lao fishers across the river in Huay Xai, he said their numbers had recently dwindled from about 30 to only four or five. Whether they continue to set nets for the giant catfish or seek similar compensation remains to be seen.

Given that still so little is known about the species, Thailand's Department of Fisheries was taking advantage of this year's migrating season to carry out further genetic research around Chiang Khong. The plan was to collect larvae in two areas near where the giant catfish is believed to spawn and send samples to Japan where Thai and Japanese researchers at Sendai University have developed a genetic marker to separate the giant catfish from other catfish species. Ubolratana Suntornratana, from the Udon Thani Inland Fisheries Research and Development Centre, said none of the 50 samples sent to Japan last year were found to be giant catfish or even from the family of shark catfishes (Pangasidae) to which it belongs. "They were all Siluridae," she said, referring to the sheatfish family. This year, sampling six times every 24 hours was scheduled to start at two sites upstream and downstream from Chiang Khong on April 24 and last until the end of May. "If we're really lucky, we'll get some," Ubolratana said. "But we're not sure."

## Catches of giant catfish in Chiang Khong, Thailand, 1983-2005

Year	Males	Females	Unclear	Total (*)	Fingerlings (**)
1983	1	1		2	16
1984	9	6		15	130,000
1985	14	3		17	107,000
1986	4	1		5	---
1987	22	2		24	10,000
1988	27	25		52	110,000
1989	39	22		61 (1)	200,000
1990	35	30		65 (11)	300,000
1991	14	19		33 (8)	395,000
1992	14	8		22	590,000
1993	27	21		48 (18)	590,000
1994	10	8		18 (3)	410,000
1995	10	6		16 (5)	110,000
1996	5	2		7	---
1997	3	2		5 (4)	50,000
1998	1	0		1	---
1999	4	11	5	20 (5)	300,000
2000	1	1		2	---
2001	0	0		0	---
2002	0	0		0	---
2003	0	0		0	---
2004	4	3		7	7,400
2005	2	2		4	10,364
<b>246</b>	<b>173</b>	<b>5</b>		<b>424</b>	<b>3,319,780</b>

\* Lao catches in brackets included in total

\*\* Fingerlings produced between 12.5 and 17.5 centimetres

Source: Chiang Rai Inland Fisheries Station

***Pangasianodon gigas***

Family: Pangasiidae (shark catfishes)  
 English: Giant Mekong catfish  
 Khmer: Trey reach  
 Lao: Pa beuk  
 Thai: Pla beuk  
 Vietnam: Ca tra dau

***Pangasius sanitwongsei***

Family: Pangasiidae (shark catfishes)  
 English: Giant catfish  
 Khmer: Po pruy  
 Lao: Pa leum, pa ling  
 Thai: Tapa, lerm  
 Vietnam: Ca vo co

## Conservation strategy for giant catfish expected by next year

***In the past, efforts to save the Mekong giant catfish from extinction were largely uncoordinated and their effectiveness was unclear. The MRC-affiliated Mekong Wetlands Biodiversity program and the British government's Darwin Initiative are now taking a new approach involving national, regional and international partners.***

Recent efforts to save the giant catfish have been coordinated by the Mekong Wetlands Biodiversity Conservation and Sustainable Use Program involving the governments of all four countries in the Lower Mekong Basin. Based in Vientiane, the five-year programme started in 2004 and is jointly managed by the United Nations Development Program (UNDP) and the World Conservation Union (IUCN) as well as the MRC. To address the plight of the species, the programme focuses on reducing catches of wild giant catfish and supporting breeding and restocking while identifying and managing critical habitats.

As part of its activities, the Mekong Wetlands Biodiversity programme has teamed up with the Darwin Initiative, a separate programme run by the British Department for Environment, Food and Rural Affairs. Under a two-year grant from the Darwin Initiative starting in 2005, Dr Kai Lorenzen from Imperial College London is working with the Bangkok-based Network of Aquaculture Centres in the Asia-Pacific (NACA) and other partners to develop a long-term conservation strategy for the giant catfish. The Mekong Wetlands and Darwin Initiative projects have established a joint Mekong Giant Catfish Working Group to develop an overarching conservation strategy. The Group brings together all major players in giant catfish conservation, and is coordinated by Dr Naruepon Sukumasavin of the Thai Department of Fisheries.

With the aim of developing a comprehensive strategy by 2007, the Mekong Giant Catfish Working Group held its inception meeting in Bangkok in August last year. The meeting brought together various regional and international partners including the riparian fisheries departments, IUCN, MRC, NACA, Kasetsart University, Imperial College and the Food and Agriculture Organisation of the United Nations (FAO).

In addition to a captive breeding program run by the Thai Department of Fisheries, recent efforts to save the catfish have included buy-back schemes with

fishermen, notably in Cambodia (see *Catch and Culture*, Volume 11, No 2). The Bangkok meeting highlighted the need for more measures - such as modified fishing practices to reduce accidental catches and protected areas to help conserve the species in the wild. Participants also suggested genetic analysis to determine if there are single or multiple stocks, a genetic inventory of captive populations and a gene bank of frozen eggs and sperm.

At the time of the Bangkok meeting, NACA noted that very little was known about the biology of the giant catfish and that even the location of its spawning grounds remained a mystery. "In the past, there has been little coordination between conservation initiatives and consequently their effectiveness is unknown," the regional aquaculture agency said. "The new project aims to change this by bringing together the major players to develop an overarching conservation strategy for the giant catfish."

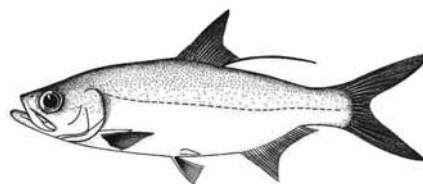
Participants at the Bangkok meeting agreed to conduct various review and research activities in preparation of the second meeting, which was held in Phnom Penh in December. The group also identified immediate conservation priorities in a Species Conservation Action Plan. The meeting agreed that the overall objective was to maintain a viable wild population, restore the historical distribution of the species, maintain a genetically-representative captive population and protect critical habitats.

The Mekong Giant Catfish Working Group will continue its work to develop a long-term, overarching conservation strategy for the critically endangered species. The third workshop, to be held in August 2006 in Vientiane, will consider the likely effectiveness of different conservation measures with the help of mathematical models of the giant catfish population. The group aims to finalise its conservation strategy, based on good science and supported by the major stakeholders, in March 2007.



# Tonle Sap dai fishery almost doubles to reach new record

By Niklas S. Mattson, Ngor Pengbun, Leng Sam Ath, Lieng Sopha, Gregory Cans, Ngor Pengby, Kent G. Hortle



The bagnet, or dai, fishery in the Tonle Sap River has been monitored by the Cambodian Department of Fisheries in conjunction with the MRC Fisheries Programme since the mid 1990s. The fishery targets mainly small-bodied cyprinids when they exit the Great Lake as water levels fall in the latter half of the flood season. The catch is dominated by Trey riel (two *Cirrhinus* species formerly classified in the *Henicorhynchus* genus) which account for almost 40% of the total. This is an important fishery, and the annual bagnet landings are assumed to provide an indicator of the health of the fishery resources in the Great Lake-Tonle Sap system.

The fishing season starts in October every year. In 2005, catches in October were slightly higher than normal, but in December the catch fell again to the lowest recorded since systematic sampling of the fishery was started in 1995. Then, in January 2006, the catches surged to the highest monthly catch on record. The combined catch estimate for the year is close to 30,000 tonnes, and the January catch alone, at some 25,000 tonnes, exceeded the total catch in all earlier seasons (Figure 1; Figure 2).

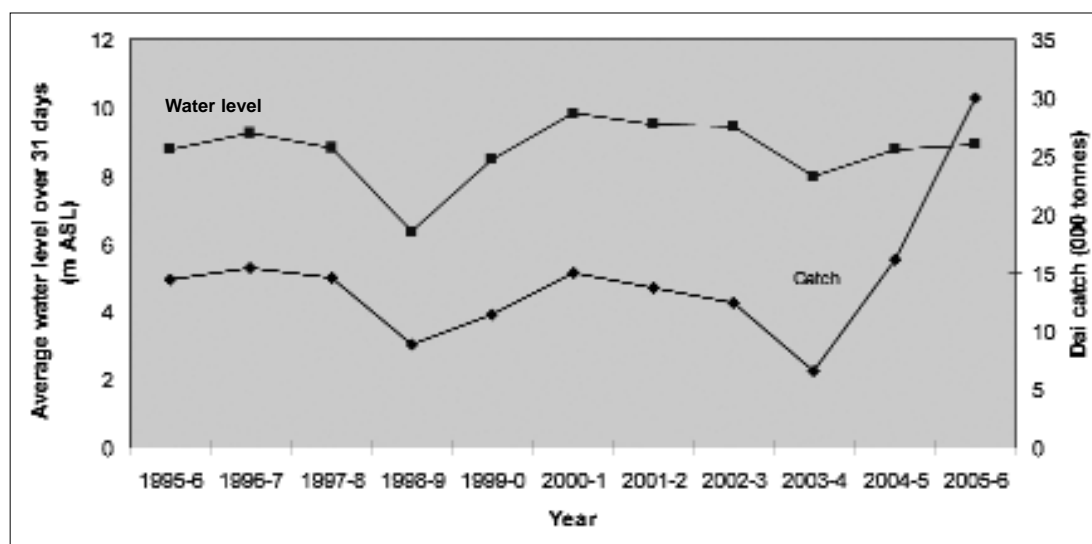


Figure 1. Dai catch and average peak water level (Phnom Penh Port). The average peak water level is calculated over 31 days, 15 days each side of the peak.

Until the fishing season of 2003-4 the available data show a strong positive correlation between the peak flood water levels and the bagnet landings in the same flood season. The water level of the Tonle Sap River was not particularly high in 2005, although it was marginally higher than in 2004 (Figure 1; Figure 3). Information from flood plain fisheries around the world indicates that high flood levels increases the availability of suitable floodplain habitats, which in turn benefits fish survival and growth (Welcomme and Halls, 2004). While the flood is the main driver of fisheries production, the catch data from the dai fishery (which is based on constant fishing effort) demonstrate that there are factors other than the height of the flood which can also influence production and yield.

As reported by Hortle *et al.* (2005), the Department of Fisheries carried out a campaign against illegal fishing gears in 2004, including education and enforcement. This was suggested as a possible cause of the relatively high 2004-5 landings. The

campaign was continued in 2005, reportedly including confiscation of almost 14,855 fine mesh fyke nets, 11,516 electro fishing gears and 443 km fence nets. In addition, some 120 training events were held, involving 12,000 government staff, police, military, fishers and other stakeholders. The training events were supplemented by the distribution of informational posters and banners. It seems quite possible that the massive effort on enforcement and education over the past two years has contributed markedly to the increase in the bagnet landings.

Another possible contribution to the increase in landings is that large year class of fish from 2004-5, perhaps combined with favourable environmental conditions, enhanced recruitment to the fishery in 2005-6. The bulk of the fish caught in the bagnet fishery are small-bodied and short-lived, so most of the fish caught in the bagnet fishery are spawned at the beginning of the preceding wet season, some 6 months earlier.

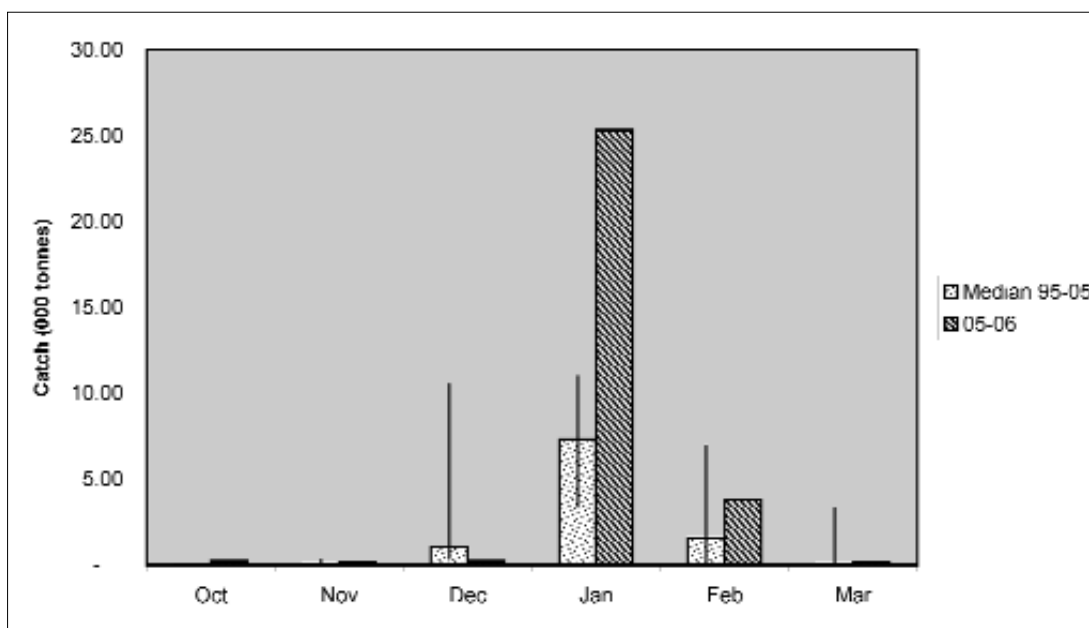
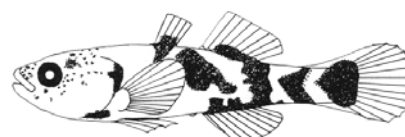
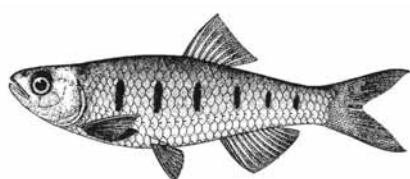


Figure 2. Median dai fishery catch by month 1995-2005 and in the 2005-6 season. Vertical lines indicate the range (max-min) of recorded catches.



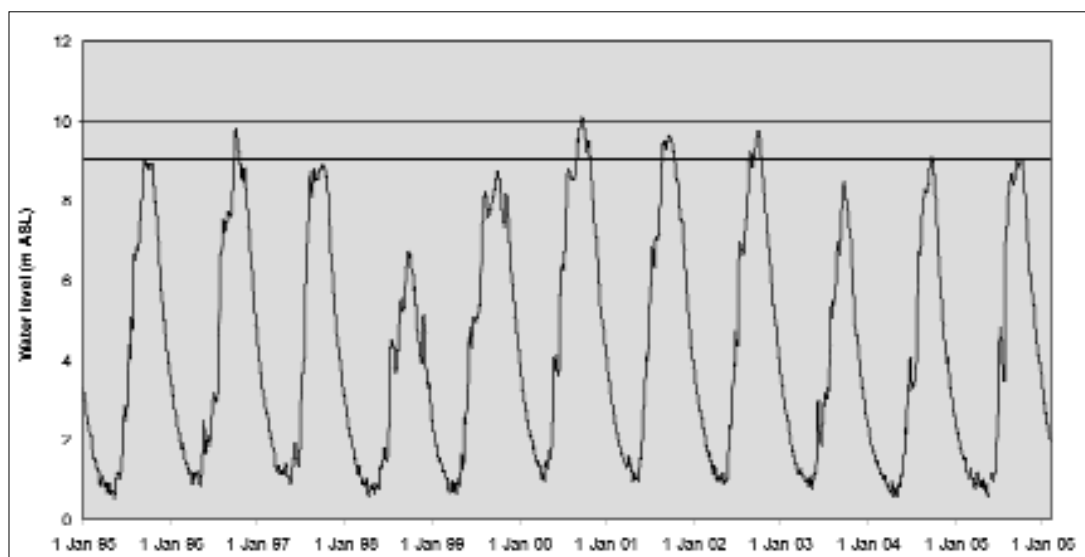


Figure 3. Daily water levels of the Tonle Sap River (Phnom Penh port). The horizontal line is the average peak flood level.

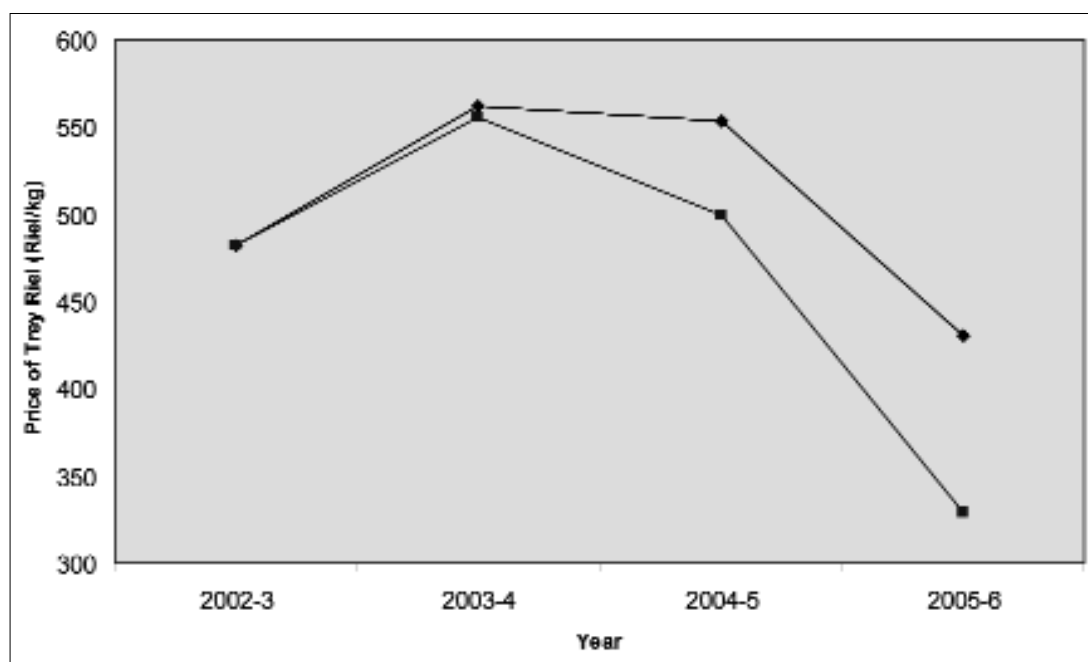


Figure 4. Price of *Cirrhinus*. The upper line is the actual prices recorded and the lower line is the price adjusted for inflation.

Prompted by the dramatic increase in the catch estimate there have been suggestions that the data collected may be biased. However, a closer look at the data does not reveal any inconsistencies. The price of troy riel fell compared to the last few years (Figure 4), consistent with the huge amount of fish that was landed this season. During a few days in mid-January the price was as low as 150 riel per kg. At times during the peak catch the market is saturated and there are no buyers of the fish. The bagnetts are

then left open to let the fish pass through, so in effect the price approaches zero.

Figure 5 shows the average number of hauls per day and the average weight per haul for the 11 seasons the bagnet fishery has been monitored. As expected, there is a positive correlation between how often the bagnet is lifted and the amount of fish per lift. The high number of hauls and weight per haul last season are both consistent with the high total catch.

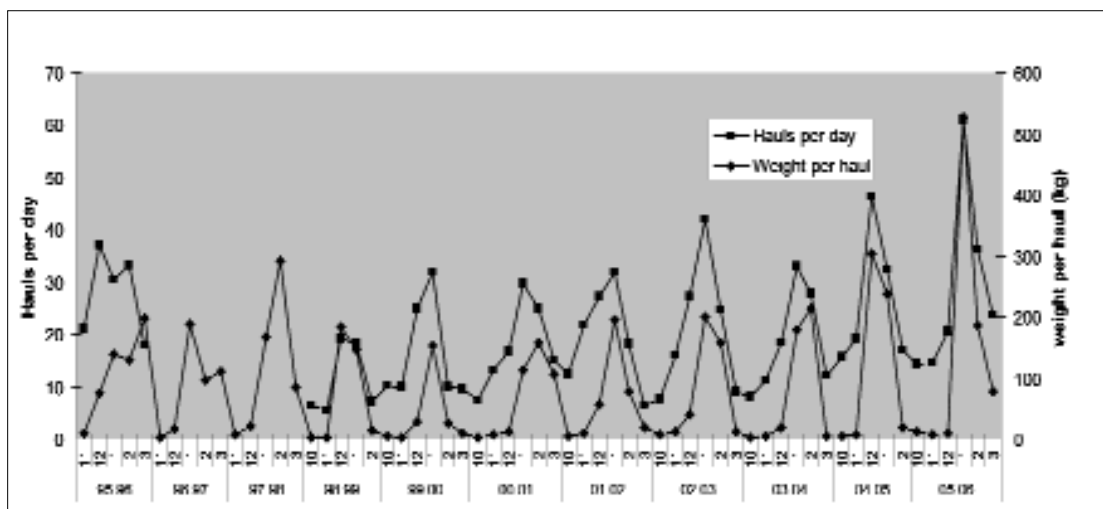


Figure 5. The average weight per haul and the average number of hauls per day 1995-6 to 2005-6 for bagnets on the Tonle Sap River. Note that the time scale has been compressed so that only the sampled months are shown (there is no catch Apr-Sep). Data for hauls per day is not available 1996-7 and 1997-8.

The rather gloomy outlook prompted by the low catches in 2003-4 (Hortle *et al.* 2004) may now be replaced by a more optimistic one. Although the fishing pressure remains high, reductions in use of illegal fishing gears through the enforcement and information campaigns carried out by the Cambodia DoF appears to have led to increased fisheries landings, at least as measured by the landings from the dai fishery in the Tonle Sap River.

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Hortle Kent G., Ngor Pengbun, Hem Rady and Lieng Sopha (2005). Tonle Sap yields record haul. *Catch and Culture* **11** (1): 3-7.

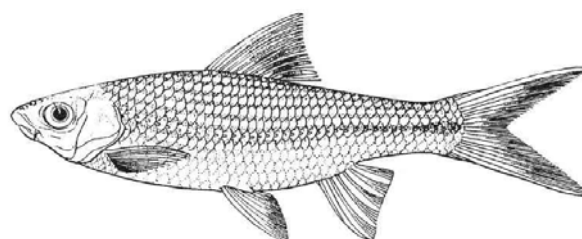
Welcomme, R and Halls, A (2004). Dependence of tropical river fisheries on flow. In: *Proceedings of the Second International Symposium on Management of Large Rivers for Fisheries Volume II*. Welcomme, R and T. Petr, Eds., FAO Regional Office for Asia and the Pacific, Bangkok, Thailand. RAP Publication 2004/17, pp. 267-283.

### *Cirrhinus siamensis*

Family: Cyprinidae (minnows and carps)  
 English: Siamese mud carp  
 Khmer: Trey riel tob  
 Lao: Pa soi hua lam  
 Thai: Pla soi klor  
 Vietnam: Ca linh thuy

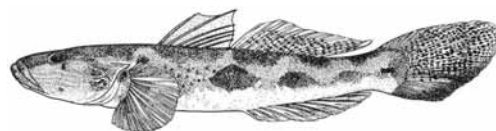
### *Cirrhinus lobatus*

Family: Cyprinidae (minnows and carps)  
 English: Siamese mud carp  
 Khmer: Trey riel ongkarm  
 Lao: Pa soi hua pu  
 Thai: Pla soi khao  
 Vietnam: Ca linh onh



# Status of catfish farming in the delta

By Nguyen Van Hao \*



***Basa and tra are Viet Nam's key freshwater aquaculture species in terms of domestic income and export revenues - not just for the Mekong Delta but for the country as a whole. Traditional techniques and experiences should be used but need to be standardised and co-management strengthened to ensure the sustainability of both the environment and production.***



The two species of catfish raised in the Mekong Delta are omnivorous and grow quickly in different farming systems. *Photo: Joe Garrison*

Raising catfish is a traditional activity in the Mekong Delta. Basa and tra are the main freshwater species used in delta aquaculture and have huge potential in terms of biological productivity. A regional network of seed production has boosted household livelihoods and grow-out culture. At the same time, production of the two catfish species has offered significant income opportunities for rural people.

The rapid growth in the catfish industry dates back to 1978 when artificial propagation started in Viet Nam.

Within two decades, production was approaching 50,000 tonnes a year. By the end of the nineties, annual output was still less than 100,000 tonnes. Since then, however, production has skyrocketed to 250,000 tonnes in 2004 and an estimated 400,000 tonnes last year - notwithstanding any adverse impact of anti-dumping duties imposed by the United States in 2003 (see *Catch and Culture* Volume 9, No. 2).

The two species of catfish are omnivorous and grow quickly in different farming systems as they adapt well



Catfish for sale in the Cau Lanh market in the Mekong Delta, Viet Nam. Photo: Joe Garrison

to different kinds of feed, usually reaching a kilogram in eight months. In the Mekong Delta provinces of Ang Giang, Can Tho and Dong Thap where 80 percent of the Vietnamese catfish industry is located, survival rates are as high as 70 percent. Land-based ponds can stock up to 80 fish a cubic metre and yield up to 400 tonnes a hectare, while net pens can yield up to 500 tonnes a hectare. River-based cages can stock up to 150 fish a cubic metre, with yields as high as 120 kilograms a cubic meter.

As white-meat fish ranking second only to tilapia

worldwide, the two species provide major export opportunities in the area of processed fillets and other value-added products. In 2004 alone, Viet Nam exported 83,000 tonnes of catfish worth more than 200 million dollars with the European Union accounting for 30 percent of the market in terms of value. There is also big potential to expand the local market, especially outside the Mekong Delta.

But there are constraints. The industry's development has been explosive without any government guidelines, recommendations or regulations. The resulting rapid increase in production has caused a lot of trouble between producers and traders. The major challenge is the "traceability" of food, feed and ingredients through the production, processing and distribution stages.

About half the industry uses home-made feeds. These vary in quality and composition and may lead to differences in the quality of the fish produced. Consequently, the government is encouraging farmers to use pelleted feeds manufactured commercially. The uncontrolled use of drugs and chemicals to combat outbreaks of disease is another constraint. The goal is to provide farmers with a list of allowed substances.

To avoid overly-rapid development, over-production and pollution, careful planning is need in developing production systems. Zoning areas with licenses for hatcheries, nurseries, ponds, cages and net pens would make tracking and tracing more feasible, as well as reduce pollution.

**\* Dr. Hao is director of the Research Institute for Aquaculture No. 2 under the Vietnamese Ministry of Fisheries. This article is based on a presentation to the Global Shrimp Conference in Ho Chi Minh City in October last year.**

***Pangasius bocourti***

Family: Pangasiidae (shark catfishes)  
 English: Bocourt's catfish  
 Khmer: Trey pra kchau  
 Lao: Pa nyang, pa phoh hua  
 Thai: Pla yang, pla ai dong  
 Vietnam: Ca basa

***Pangasianodon hypophthalmus***

Family: Pangasiidae (shark catfishes)  
 English: Sutchi river catfish

Khmer: Trey pra  
 Lao: Pa suay kheo, pa suay  
 Thai: Pla saa whai, pla suey  
 Vietnam: Ca tra song, ca tra

***Pangasius krempfi***

Family: Pangasiidae (shark catfishes)  
 English: catfish  
 Khmer: Trey pra bong lao  
 Lao: Pa suey hang leuang  
 Thai: Pla suey sor  
 Vietnam: Ca bong lao

## Viet Nam aims to induce spawning of *Pangasius krempfi* this year

**Catfish farmers in Viet Nam rely on two *Pangasius* species. For the past four years, efforts have been underway to domesticate a third.**

In 2002, the Aquaculture of Indigenous Mekong Species (AIMS) of the Fisheries Programme decided to target *Pangasius krempfi* as a potential species for aquaculture. Unlike *P. bocourti* and *P. hypenthalmus* (see accompanying article on basa and tra), this migrating species had not been domesticated even though the fish is of economic value in the Mekong Delta.

To catch wild specimens of the species, fisheries officers used nets in upstream areas of the Mekong in An Giang province near Cambodia and hooks further downstream in the estuary in Soc Trang province. But by 2004, none of the fish caught and transferred to ponds had survived.

AIMS staff \* at the Cai Be station in Tien Giang province have had more success with cage culture since last year. According to a presentation at the Fisheries Program's technical symposium in Ubon Ratchatani in November, the mortality rate of fish caught in 2005 is less than 10 percent (36 fish out of 420). The fish were stocked with Hoeven's slender carp (*Leptobarbus hoevenii*) in cages in Dong Thap province.

After capture, fish of various sizes were kept in temporary holding tanks. Before being transported, they were anaesthetised and then their pectoral spines were cut (in the case of small fish) or covered by a plastic tube (for larger specimens). The fish were then packed into plastic bags and transferred to a cage, with the plastic tubes removed in the case of the bigger fish.

"This was the first time we were able to keep them alive in a cage," said Trinh Quoc Trong, national director of the AIMS component in Viet Nam. "We're going to try to induce spawning this year if the fish are ready." In addition to spawning, further studies are expected on the biology and behavior of the species (how it is affected by salinity, for example). Nutrition is another area for research on this species, which is believed to spend part of its life in the sea even though it occurs as far north as



The first step in domesticating *P. krempfi* was learning how to capture and transport them with minimal mortality.

Chiang Saen where the borders of Lao PDR, Myanmar and Thailand meet.

Apart from domesticating *P. krempfi*, the other main task of the AIMS component in Viet Nam has been to develop mass seed production for another four species, including the popular *Cirrhinus microlepis*. Induced spawning of this species has been carried out in Thailand and Lao PDR as well as Viet Nam.

**\* Trinh Quoc Trong, Huynh Huu Ngai and Thi Thanh Vinh**

# Cambodia's National Fish Day



Cambodian Prime Minister Mr Hun Sen told the crowd that the spirit of fishery conservation should always be in the hearts of Cambodian citizens.

## ***This important celebration is raising awareness of fisheries in Cambodia***

Cambodia's National Fish Day on July 1 is shaping up to be the biggest yet with activities planned in several communes in each province this year. At last year's fish release at Beung Sne lake in Prey Veng province, Prime Minister Hun Sen endorsed plans to organise events in communes across the country to raise awareness of fisheries and encourage more local people to take part.

Following a sub-decree by the prime minister in 2002, the first National Fish Day ceremony took place in 2003 with the release of fish into Prek Kompous canal in Kompong Speu province. A second fish release at Punnareay Lake in Kandal province north

of Phnom Penh in 2004 drew a huge crowd estimated at 7,000 people.

At the National Fish Day in 2005, Prime Minister Hun Sen noted that "many illegal fishing activities" were still taking place, calling for efforts to halt the use of illegal fishing gear nationwide to prevent resources from being devastated. "The spirit of fishery conservation should always be in the hearts of our citizens," he said.

Cambodian Fisheries Department Deputy Director Sam Nuov said the main commune events associated with inland fisheries in 2006 are likely to involve communes around the Great Lake and those in remote dry areas.





Models of a Mekong giant catfish and a Mekong dolphin symbolise the need to protect these endangered species.



Fishing gears on display at National Fish Day.

Right: Agriculture, Forestry and Fisheries Minister Mr Chan Sarun addresses the crowd in Prey Veng.



Below: Releasing fish under the banner urging Cambodians to protect fish for the next generation.



# Sharing data and information is just as important as collecting it



By Wolf Hartmann

## ***A new guide for co-managers and others working in the field***

Inefficient flows of information are a major obstacle to managing and developing fisheries successfully. The shift towards co-management has prompted managers to recognise that data collection must now be able to respond to the diverse needs of more than one stakeholder and must be tailored to their objectives and resources.

Over the past year, two separate workshops on data collection and sharing for co-managed fisheries have been held at the Huay Luang Reservoir in northeast Thailand. Participants included 10 communities, four primary schools, and three tambon administration organisations as well as the provincial fisheries office in Udon Thani and the Inland Freshwater Research and Development Center (IFRDC). Provincial environment, tourism and irrigation officials also took part.

Participants pre-tested guidelines jointly drafted by the Marine Resources Assessment Group, the United Nations Food and Agriculture Organization (FAO), the WorldFish Centre, and the MRC under a programme funded by the UK's Department for International Development. Structured around an eight-stage participatory design process, the guidelines aim to complement - rather than replace - the FAO's existing manuals and guides.

Field testing involved communities, tambon officials and government line agencies. The guidelines helped identify common needs among stakeholders such as fisheries production figures, information to determine the best stocking strategies and information about the environment, notably water levels and quality within the reservoir.

The guidelines helped stakeholders agree upon a potential strategy for collecting and sharing data and information. This raised government awareness of the widespread interest among resource users in diversifying livelihoods to include tourism-related activities. Workshop participants agreed to monitor water quality and fish catches on a monthly basis through user representatives from all target communities with technical help from line agencies. The workshop also developed a proposal for data sharing based on capacities and lessons learned by government agencies. This was integrated with the existing tambon system for sharing information as well as communities and schools in the area. After reviewing what data and information already exist, local authorities have agreed to develop a data-collection system and provide financial support.

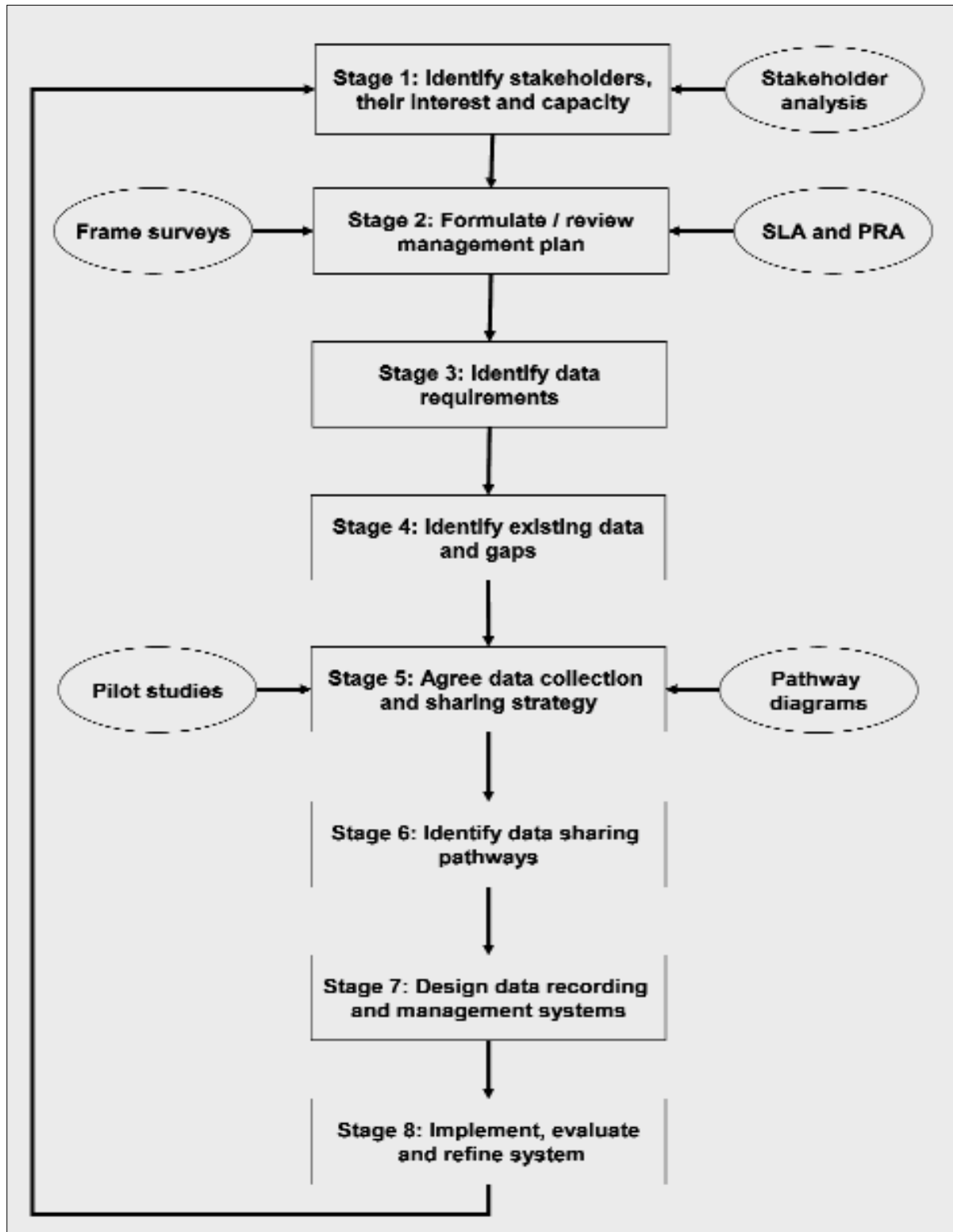
Based on World FishCenter testing in Bangladesh and MRC testing in Thailand, a practical guide has been written for co-managers and facilitators working in the field. Now available in the Thai and Lao languages, it offers simple and practical advice on identifying different information needs and developing collaborative ways of collecting and sharing the information in the most effective way.

As part of its Fisheries Technical Paper series, the FAO recently published the final version of the guidelines and the field guide incorporating feedback from field testing and evaluation. Free downloadable copies are available from the FAO website.

### **Further information:**

[www.fao.org/fi/eims\\_search/publications\\_form.asp?lang=en](http://www.fao.org/fi/eims_search/publications_form.asp?lang=en)

### An eight-stage participatory process for designing and implementing data collection and sharing systems



Source: FAO

# New national breeding centre in southern Viet Nam almost complete

***The government's latest upgrade to a research centre in southern Viet Nam is a big public investment for the aquaculture sector. If things go according to plan, the costs of funding public research into genetic programmes and new technologies will be partly offset by sales of high-quality seed to hatcheries in the south.***

After a three-year upgrade costing 34.9 billion dong (\$2.2 million), the new National Breeding Centre for Southern Freshwater Aquaculture (Nabrecsofar) in Viet Nam's Tien Giang province is nearing completion. Located on the 19-hectare site of the existing Cai Be station, the newly-renamed research centre is expected to have a production capacity that includes 400 million fry and 40 million fingerlings a year. Viet Nam is reportedly planning to open six breeding centres this year (see *Catch and Culture*, Volume 11, No. 3).

"We hope everything will be finished in May or June," said Trinh Quoc Trong who is in charge of the genetics and selection division at the Cai Be centre. The other three research divisions are dedicated to seed production and culture techniques, environment and aquatic diseases, and extension and technology transfer. Trong, who is also the National Component Director for the Aquaculture of Indigenous Mekong Fish Species (AIMS) component of the MRC's Fisheries Programme, said each of the four divisions had recruited two new staff since June last year. A fifth division is responsible for administration.

"The bottom line is that we're upgrading to a higher level in terms of capacity and knowledge with better infrastructure and better equipment," Trong said. Under the upgrade started in 2001, the Ministry of Fisheries has invested 25.4 billion dong (\$1.6 million) on infrastructure and 5.6 billion dong (\$350,000) on new equipment. What the centre lacks in state-of-the-

art equipment for water quality analyses is available at the ministry's Research Institute for Aquaculture No. 2 in nearby Ho Chi Minh City. As for infrastructure, almost half the site is devoted to ponds. Under a plan formulated in June last year, 42 ponds covering almost 50,000 square metres are designated for nursing and rearing (14 ponds for fingerlings and 28 for fry). Five ponds totalling 10,000 square metres are to be used for broodstock and more than 40,000 square metres have been allocated for six grow-out ponds. The centre also has one indoor hatchery for fish, an outdoor nursery (concrete tanks), one indoor nursery (fibre-glass tanks and aquariums), one hatchery with large fibre-glass tank for holding broodstock, and a hatchery for prawns.

The Ministry of Fisheries acquired the experimental station from the Ministry of Agriculture in 1982. Over the next four years, office, dormitory and warehouse buildings sprung up and a water-supply system was put into place as induced-spawning and seed-production facilities were developed.

Under a second phase between 1994 and 1997, the ministry invested 1.64 billion dong (\$103,000) to upgrade the experimental station to a research centre under the research institute headquartered in Ho Chi Minh City. When *Catch and Culture* visited the site in February this year, workers were putting the finishing touches to a three-storey main office building (including laboratories, meeting room, library and a museum), as well as two guest houses for visiting experts and trainees.

Like its counterpart in northern Vietnam, Nabrecsofar is not just a research centre but also a business enterprise. Under a plan completed in 2005, its twin mission is to conduct research into genetic conservation, seed production and grow-out of various freshwater species while producing high-quality seed for fish nurseries in the south. Projections for the first year indicate gross expenditure of 3.28 billion dong (\$205,000) including 1.42 billion dong (\$89,000) for genetic programs and 1.02 billion dong (\$64,000) for



Trinh Quoc Trang prepares to induce spawning in the *Leptobarbus hoevenii* at the Cai Be Aquaculture Centre in the Mekong Delta, Viet Nam.  
Photo: Joe Garrison

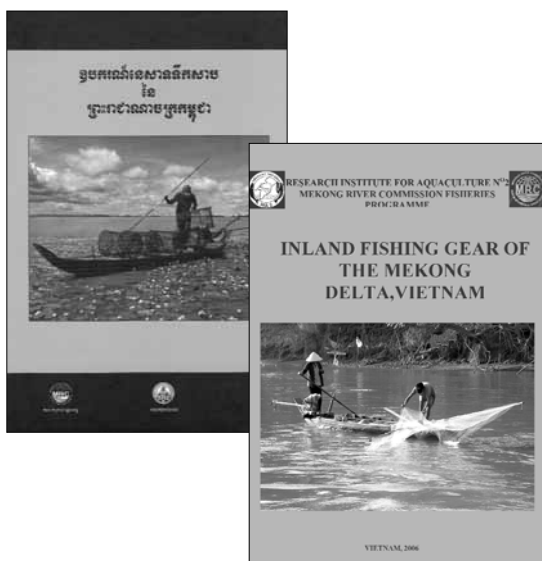
developing new hatchery and culture technologies. But the funding requirement for the new centre is expected to be partly offset by seed sales of about 600 million dong (\$38,000), bringing net expenditure down to about 2.68 billion dong (\$167,000).

A recent paper\* by the Support for Freshwater Aquaculture (SUFA) project of the Ministry of Fisheries and the Danish aid agency Danida proposes such a model to promote the freshwater seed industry in other developing countries. The authors describe the adoption of business strategies as an "important institutional innovation" for the seed industry. Vietnamese breeding centres may still require external financing from donors, private foundations and industry associations as well as local governments and research grants from the national government. But with seed demand expected to grow at an annual rate of almost five percent between 2005 and 2010, the seed industry is a profitable business in Viet Nam. Moreover, public hatcheries tend to be less subject to genetic deterioration than private hatcheries which have failed to improve genetic quality and promote seed-production technology.

On the other hand, most of the demand in Viet Nam is for mature broodstock. Demand for seed to be ongrown as broodstock is relatively small compared to the production capacity of a typical hatchery - let alone a breeding centre. So, the authors argue, it may not be feasible to run breeding centres entirely as self-sustaining businesses if they are to fulfil their costly social mission of providing high-quality seed from genetically-managed and improved broodstock. But at least the centres should be able to cover some of their costs. "The business model demonstrates a workable strategy to both address seed industry development while reducing recurring cost burdens on the public sector," the authors conclude.

\* ***"The Business Approach to Operating National Broodstock Centres: an Innovative Strategy for Developing the Freshwater Aquaculture Seed Industry in Viet Nam"*** by a team of consultants led by Roehlano Briones, senior fellow at the Brain Trust Inc., a private think tank in Manila

# Cambodia and Viet Nam produce **first** comprehensive books on fishing gear



These fishing gear manuals now in Khmer and Vietnamese (English version cover above) will benefit national fisheries experts. Right: Mr Nguyen Du of the Fisheries Ecology, Valuation and Mitigation component, who co-authored the Vietnamese publication.

***Catch and Culture doesn't normally do book reviews. But these manuals are so useful and fascinating for specialists and non-specialists alike that we couldn't resist the temptation.***

The "Fishing Gears of the Cambodian Mekong" was published in 2003 by the Inland Fisheries Research and Development Institute (IFReDI) of the Cambodian Fisheries Department with the support of the MRC Fisheries Program. This outstanding manual catalogues 150 types of gear in 16 categories. Largely based on field work by provincial fisheries officers, it was compiled by Cambodian biologist Deap Loeung, German socio-economist Peter Degen and Dutch biologist Nicolaas van Zalinge, who previously coordinated the MRC Fisheries Program's Cambodian

Capture Fisheries component. Featuring excellent technical drawings and colour photographs, the 269-page hardback edition is an exceptionally high quality the reference book.

The recent completion of a Khmer translation by the Department of Fisheries now makes this important manual available to a wider audience of policymakers, academics, teachers, students and anyone else interested in the industry. In a country where 70 percent of the protein intake comes from fish and where fisheries vies with rice production as the main contributor to economic output, that could mean just about everybody - especially given the book's added appeal to those interested in Cambodian culture and history. As Fisheries Department Director Nao Thuok says in the foreword, "the fabrication and use of each fishing gear reflects the traditional knowledge of generations." As for history, the book recalls that

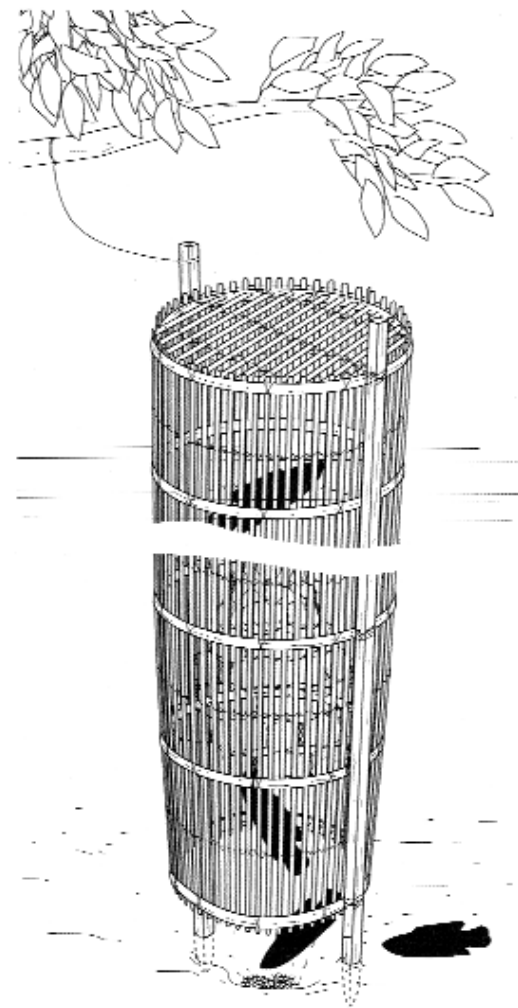
Cambodia was exporting about 50,000 tonnes of fish products a year during the French colonial period, with Chinese traders exporting 25,000 tonnes a year to Indonesia alone.

The Khmer translation - expected to be launched in May following a contribution to printing costs by the Japan International Cooperation Agency (JICA) - contains the same intricate drawings of fishing gear and fascinating illustrations of Cambodians catching fish as the English edition. These are the work of graphic artist Arijan Jansonius, who was also responsible for the original layout. The book also includes the same informative charts showing which months of the year different types of gear are used in four major fishing zones. These are the Tonle Sap Lake (Battambang, Pursat, Siem Reap and Kompong Thom), the Tonle Sap River (Kompong Chhnang, Kandal and Phnom Penh), the Mekong and Bassac floodplains (Takeo, Kandal, Prey Veng and Kompong Cham) and the Upper Mekong and its tributaries (Kratie and Stung Treng).

Not to be outdone, the Ministry of Fisheries across the border in Viet Nam has been hard at work producing its own manual of the different types of gear used in inland fisheries across the Mekong Delta. The 200-page book, the first of its kind in Viet Nam, is also in full colour and is expected to be published in Vietnamese by the Research Institute for Aquaculture No. 2 in Ho Chi Minh City during the second quarter of this year following approval of the final draft in March. The authors are Nguyen Nguyen Du, a biologist with the Assessment of Mekong Capture Fisheries component of the MRC Fisheries Program, and national component officer Nguyen Phuoc Thuong along with Claire Smallwood, an Australian youth ambassador who was attached to RIA2.

The Vietnamese manual documents 120 types of gear. These are classified into 10 categories - gillnets, bag nets, cone-shaped nets, lift nets, hooks and lines, collection methods, scoop nets, small traps, big traps and miscellaneous gear such as spears and electrical equipment. The book includes explanations of how different types of fishing gear are operated as well as catch rates and species caught - which vary significantly depending on which categories and types are used.

The project to develop the book started in late 2004 and lasted nine months, with Mr. Du spending two weeks out in the field in each of the 13 provinces covered. "It was tough work and it rained a lot," he said. The biologist interviewed fishermen about the construction, cost, operation and catch of different



A vertical cylinder trap for climbing perch is commonly used in the flood plains, but also in lakes and quiet rivers.

types of gear and also asked them about their backgrounds, historical catch data and knowledge of Vietnamese fishing regulations.

Like the Cambodian manual, the book contains drawings with measurements and photographs of the various types of gear used. Non-speakers of the language shouldn't be deterred by the book's Vietnamese title ("Ngu cu Khai thac Thuy san Noi dia Dong bang Song Cuu Long" which roughly translates as "Inland Fishing Gear of the Mekong Delta"). The manual not only includes an English translation of the abstract, but all categories and types of gear are listed in both languages with convenient page references for the adventurous reader. An English translation is expected to be completed in late 2006.

# Staff movements



## Incoming

### Garry Bernacsek

Dr Garry Bernacsek has been appointed as component coordinator for the Fisheries Programme's Fisheries Ecology, Valuation and Mitigation component starting in May. He will be based at the Inland Fisheries Research and Development Institute (IFReDI) in Phnom Penh.

Gary has dual citizenship of Australia and Canada, completing his undergraduate studies in Canada and his PhD at the University of Bristol in Britain. For the past 25 years, he has worked as a fisheries and environmental consultant in numerous countries, primarily in Africa and Asia. Gary is known to some of us already, as he has undertaken several assignments in Viet Nam and Cambodia. He also worked for the Fisheries Programme as a consultant in 1996-98, producing the database on fisheries in reservoirs in the Lower Mekong Basin. Garry has been employed by many agencies such as FAO, ADB, the World Bank and bilateral donors, as well as national governments and the private sector. His expertise covers both aquaculture and capture fisheries.



We welcome Garry to the MRC Fisheries Programme. His experience and enthusiasm will be of great benefit to the programme and to the fisheries agencies in member countries.

## Outgoing

### Niklas Mattson

Dr Niklas Mattson has been appointed as a fisheries advisor to FAO in Bangkok, where he will be working with post-tsunami rehabilitation and reconstruction projects in Thailand and nearby countries.

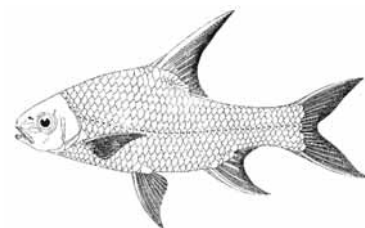
Niklas joined the MRC Fisheries Programme in February 1998. He was originally assigned as a fisheries biologist to the Management of Reservoir Fisheries component, focusing on Lao PDR and northeast Thailand. Later, he assisted the Assessment of Mekong Capture Fisheries component with many fisheries surveys throughout the basin. With experience in both capture fisheries and aquaculture, he was appointed as the Component Coordinator for the Aquaculture of Indigenous Mekong Fish Species (AIMS) project in 2001. In this role, Niklas worked across all MRC countries, becoming a good friend and valuable colleague to all in AIMS.



Niklas will still be working in the region, so we hope to see him from time to time, especially at our annual Technical Symposium. We wish him and his family every success in the future.



# New Information Products



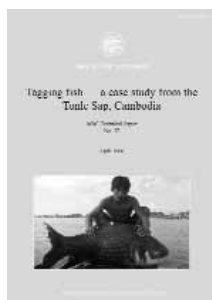
## Proceedings of the 6th Technical Symposium on Mekong Fisheries



These proceeding contain 13 papers from the sixth annual Mekong Fisheries Technical Symposium held from 26-28 November 2003 in Pakse, Lao PDR. The proceedings cover a range of topics on fisheries assessment, aquaculture and fisheries management. The volume includes papers on diverse subjects including monitoring fish markets in Phnom Penh, artificial propagation of Hoeven's slender barb, and the hydrology, habitat and livelihoods on the floodplains of southern Lao PDR.

**MRC Conference Series No. 5, March 2005.**  
**US\$5.00 plus postage** (also available as free download on [www.mrcmekong.org](http://www.mrcmekong.org))

## Tagging fish – a case study from the Tonle Sap, Cambodia

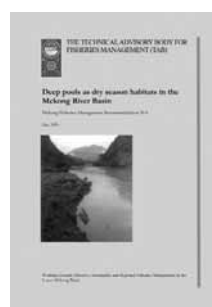


This report presents the results of a tagging study of fish caught in the Tonle Sap River, north of Phnom Penh Cambodia. Nearly 3,000 fish were tagged and released between October 2003 and January 2005. By March 2005, fishers had caught and returned the tags from 445 fish. While most of the returned tags were taken from fish recaptured

within 5km of the tagging site, some of the tagged fish had travelled more than 100km. The study provides some of the first hard evidence that Mekong fish migrate long distances – important knowledge for fish conservation and fisheries management.

**MRC Technical Paper No, 12, April 2006.**  
**US\$5.00 plus postage** (also available as free download on [www.mrcmekong.org](http://www.mrcmekong.org))

## Mekong Fisheries Management Recommendations

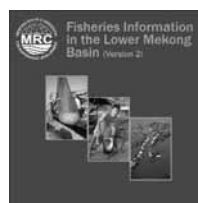


This is a new series of booklets published by the MRC on behalf of the Technical Advisory Body for Fisheries Management (TAB). The 4-6 page booklets provide a summary of technical studies commissioned by the TAB. They are written for managers, professionals and lay people who have an interest in the Mekong River and its fisheries, but who do

not necessarily have a technical background. Three booklets are now available: Status of the Mekong *Pangasianodon hypophthalmus* resources, with special reference to the stock shared between Cambodia and Viet Nam; Mekong giant fish species: on their management and biology and Deep pools as dry season habitats in the Mekong River Basin.

**US\$3.00 plus postage**

## Fisheries Information in the Lower Mekong Basin - Version 2 CD-ROM

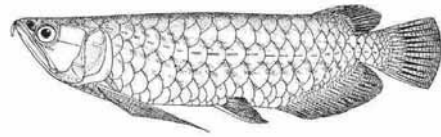


This is a new release of the MRC Fisheries Programme's popular 'Information CD'. It now includes all of the Fisheries Programme's publications up to the end of 2005 as well as a suite of fisheries-related maps, databases and photographs. The new version takes full advantage of the

powerful search facility offered by Adobe Reader 7, which allows a rapid search on selected subjects such as author, date of publication and key words as well as a comprehensive search for words and phrases. The CD comes with Adobe Reader 7.0 and Arc Reader software.

**US\$5.00 plus postage**

# Mekong Fisheries Index



## **Raft-caged fish die en masse in southern Vietnam** *Thanh Nien News, 3 January 2006*

Overcrowding, pollution, or cold weather may have been the trigger that killed thousands of catfish raised in pens in the Mekong River Delta in recent days. Southern An Giang province, a leading fish exporter in the country suffered the worst damage. Hundreds of families in the capital city suffered, with many pens seeing entire fish stocks die. Nguyen Huu Khanh, president of the province's Fish Association attributed the incident to a combination of overstocked pens, cold weather and water pollution. He said that some farmers, eager for profit to offset recent losses, raise fish in high density, which invites pathological germs and disease. Nguyen Thi Ngoc Ha, head of the fish promotion section under An Giang Center for Aquaculture Research and Production concurred. She warned farmers not to raise more than 100 fish for every cubic metre of water. Parasites clinging to fish's gills could stifle and kill them, she explained. In order to cope with the problem, Ha recommends rinsing affected fish in chemicals to rid them of parasites. She also cautions strongly against the use of antibiotics. Other preventative measures include ventilation, diet, and the use of medicinal herbs.

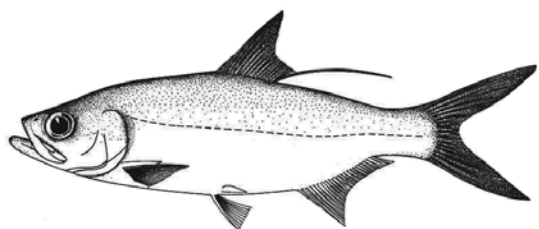
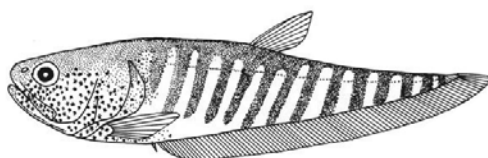
## **Seasonal Smell of Prahok draws various reactions** *Cambodia Daily, 3 January 2006*

Tourists visiting the floating village of Chong Khneas on Tonle Sap Lake often find the pervading smell of the seasonal prahok making activities a bit of a shock. The solution appears to be to move the tourist boat

dock away from the fishing harbour. In September the Asian Development Bank completed a study for the development of fishing and tourist harbours, a 5km channel in the lake and a new road to Siem Reap town. When the relocation is complete Chong Khneas will now be promoted as a tourist site to relax and enjoy the floating village among the flooded forest.

## **Sustaining Livelihoods on Cambodia's Tonle Sap** *Asian Development Bank News Release, January 3 2006*

A US\$15 million ADB grant will help improve livelihoods and reduce poverty in the five provinces that adjoin the Tonle Sap Lake in Cambodia, according to an ADB press release. The project will help increase access to assets by establishing a livelihood fund to finance small-scale community-driven activities relating to social infrastructure, income-generation, and community fisheries. It will help form special interest groups, assist organisations in formulating proposals for funding, and familiarise government institutions at the central, provincial, and commune levels with the livelihood fund. The project covers 37 communes surrounding the lake. At the same time, the project will ensure that the Tonle Sap's core areas are protected by establishing a management system that is compatible with biodiversity conservation. The project is part of ADB's Tonle Sap Initiative, a partnership of organisations and people working to meet the poverty and environment challenges of the Tonle Sap. ADB's grant, which covers 74% of the project's total



estimated cost of \$20.3 million, comes from its Asian Development Fund. The Government of Finland will provide a \$4.7 million grant, and the Government of Cambodia will shoulder the balance of \$600,000. The Ministry of Interior is the executing agency for the project, which is due for completion in December 2009.

### **Giant Catfish Spared From Fishing on Cambodia River**

National Geographic News 10 January 2006

On Cambodia's Tonle Sap River, conservationist Zeb Hogan is hoping to save the giant catfish, the largest freshwater fish in the world, one fish at a time. If fishers here catch the critically endangered species, which can grow up to 3 metres long and weigh 295kg, they now must turn it over to Hogan, who heads the Mekong Fish Conservation Project. Hogan's team then tags and releases the fish back in the river. In the past, Hogan has paid market price for any endangered fish, including giant catfish, caught by the fishers who operate nets on the Tonle Sap. But the Cambodian Department of Fisheries recently declared the row of nets, the largest commercial fishing operation on the river, a special research and conservation area. "What that means is that the fishermen are obligated to provide endangered species that they catch to us free of charge for tagging and release," said Hogan, a biologist affiliated with the University of Wisconsin-Madison. In the last century, the Giant Catfish population has declined 95 to 99 percent. Hogan says there may only be a few hundred adult giant catfish left in the system today.

### **Wildlife experts: Cambodia's freshwater dolphins face extinction**

www.chinaview.cn, 10 January 2006

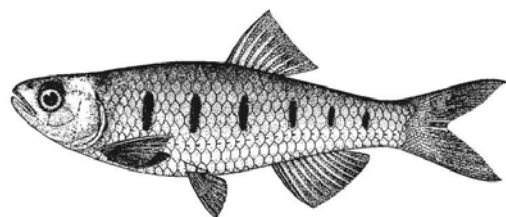
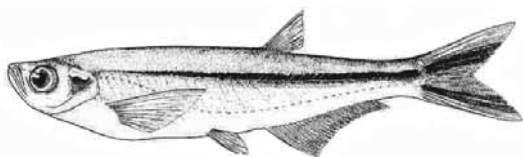
Wildlife preservation officials are worried that Cambodia's rare freshwater dolphin species will be extinct in the next 10 years, according to reports in local newspapers. Most of the dolphins are dying in fishing nets, *The Cambodia Press Review* quoted Phy

Somany, senior officer of the Mekong Dolphin Conservation Project, as saying that studies estimated that about 10 dolphin calves are born each year, but Fisheries Department data shows that 14 died in 2003, 18 in 2004 and 13 in 2005. One dolphin has already died in the first week and a half of 2006, *Jian Hua Daily* reported. An official of the Economic, Social and Cultural Observer Unit at the Council of Ministers said local organisations must launch an educational programme for fishermen to help prevent the dolphins from being caught and dying in nets. Otherwise the current mortality rate means the Mekong River dolphins will be extinct in 10 years. The estimated 70 to 100 freshwater dolphins spend the dry season in nine locations along the Mekong River in Stung Treng and Kratie provinces. Tourism Ministry Secretary of State Thong Khon said the ministry had begun patrols along the river and was investigating the reasons behind the deaths of the dolphins to prevent their extinction. Villagers may be relocated from dolphin habitats or encouraged to engage in fish-farming ventures.

### **Fish, chips, please, but what is on the plate?**

Adelaide Advertiser, 14 January 2006

Butterfish - South Australia's favourite from fish and chip shops - is largely cheap imported species including a Vietnamese catfish banned in three US states because it contained chemical residues. Butterfish, thought by many South Australians to be locally caught mullet, flake or even a defined species of the same name, in fact is virtually always an ocean fish called hake, caught and processed on giant floating factory ships in South Africa. Other fish to fill butterfish orders include hoki from New Zealand, while fishing industry experts warn a new Vietnamese import is becoming more common in hotels and budget and fast food outlets. The Vietnamese import, sold thawed in supermarkets and some fishmongers as cheap white fish fillets under the generic name "basa" is, in fact, a Mekong River catfish. Basa has come into the marketplace as smaller portioned hake fillets decrease in quantity from overfishing. The basa



fish has been banned in three US states because of the presence of antibiotics found in food safety tests. Samples imported into Australia have been found to contain low-level residues of synthetic dyes, but health authorities have assessed the levels too low to pose a health risk.

**HCM City opts for aquaculture, animal husbandry over crops**

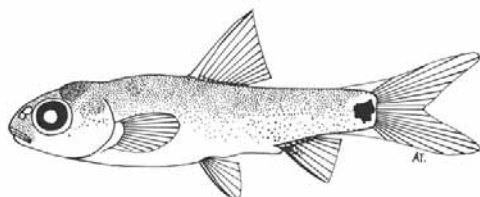
VietNam News, 4 February, 2006

Farmers in Ho Chi Minh City are rapidly switching to aquaculture and animal husbandry while agricultural workers are moving into the industrial and service sectors to increase their income. The director of HCM City's Department of Agriculture and Rural Development said that the share of aquaculture in agricultural output had almost doubled since 2001 from 18.9% to 30.5%. The high incomes to be earned from shrimp breeding have seen large areas of low yielding rice paddy in the city's outlying districts switch to aquaculture.

**Approval given for huge freshwater aquarium in Nong Khai**

Bangkok Post, 13 February 2006

A project to build one of the region's biggest freshwater aquariums in Nong Khai, Thailand has been approved, with Khon Kaen University entrusted with taking charge of the project and running the facility. The university has also allowed its Nong Khai campus to be used as the site for the aquarium's construction. The 361-million-baht aquarium, which will become one of the largest in the region, will initially be used for research and study. The aquarium will also serve as conservation sanctuary for marine species exclusively found in the Mekong River. The province has already allocated a budget of 8.06 million baht for the construction of a nursing pond for fish spawn, which will form part of the aquarium project. The nursing pond is expected to be finished by March.



**Two more baby dolphins die in Mekong River**

Associated Press, 15 February 2006

Two more Irrawaddy dolphins have died in Cambodia's stretch of the Mekong River, raising concerns about the survival of the species, officials said. The two calves, aged between four weeks and two months, were discovered floating in the river, said Lor Bun San of the Cambodian Mekong Dolphin Conservation Project. The cause of their deaths was not immediately known, but officials have said that environmental pollution and illegal fishing nets were probably behind the recent deaths of at least eight other Irrawaddy dolphins in Cambodia's portion of the Mekong. The Worldwide Fund for Nature (WWF) has called the deaths a "serious situation" that threatens the future of the animals. It was estimated earlier this month that only 80 to 100 Irrawaddy dolphins are left in the Mekong River. Sam Kim Lorn, chief fisheries officer in Kratie province, said illegal fishing nets were the cause of most dolphin deaths and that authorities were conducting day-and-night patrols of the river to crack down on the problem.

**US imposes higher tariffs on catfish**

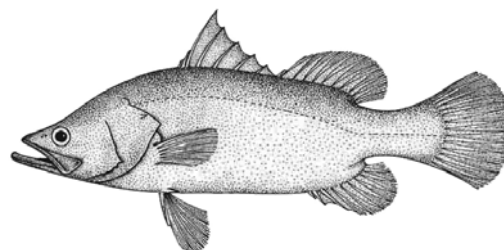
VietNam News, 18 March 2006

Higher anti-dumping tariffs have been slapped on catfish fillet imports from Viet Nam based on a review of the US Department of Commerce, hurting Vietnamese basa and tra fish farmers. The review released earlier this week cut the number of basa and tra fillet exporters subject to the reduced tariff rates ranging from 36.84% top 53.68% from 11 to 2. The tariff for most catfish exports was kept unchanged at 63.68%.

**Prices soar, shrimp die, plants thirsty for materials**

VietNam Net, 2 April 2006

The 2006 shrimp culture crop has not been as successful as expected. Shrimp are dying en masse in the Mekong River Delta. In Tra Vinh Province, more than 70 million shrimp have died. Meanwhile, Ca Mau Province has reported 20-80% losses in its hundreds



of thousands of hectares of shrimp breeding area. Kien Giang has also reported severe losses of 20-80% in some areas. Shrimp material prices have skyrocketed to VND160,000 per kilo (\$10) due to the supply shortage. The lack of material is forecast to last until mid May or June, when the southern area is due to harvest a new crop. The shrimp deaths have made seafood processors worry about how to fulfil export orders. Tra and basa prices have also skyrocketed recently. Processing enterprises are offering high prices, VND13,000 per kilo of tra and VND15,000 per kilo of basa. Meanwhile, farmers do not want to make transactions now; they want to wait for the prices to go up further. As a result, processing plants are running at just 50% of their designed capacity. The output of tra in some provincial communes is down by 30% compared to 2005 as many farmers have decided to give up fish farming.

#### **VN struggles with chemicals in shrimp**

VietNam Net, 4 April 2006

Deputy Minister of Fisheries Nguyen Thi Hong Minh has called on the shrimp industry to take drastic measures to stop the introduction of contaminants into shrimp before Viet Nam's seafood industry loses its customers. To date Ca Mau province police have discovered 255 cases of prohibited chemicals in shrimp, seizing 66 tonnes of materials. The two most serious cases have gone to court, resulting in jail sentences. Now, in accordance with a plan signed by Minister of Fisheries Ta Quang Ngoc on March 22, the ministry will examine 100% of raw shrimp brought to the processors or to collecting agents in the Mekong River Delta. In addition authorities will set up a market specifically for monitoring quality in Ca Mau province.

#### **New funding helps Mekong River Commission meet basin challenges**

Mekong River Commission press release, 4 April 2006

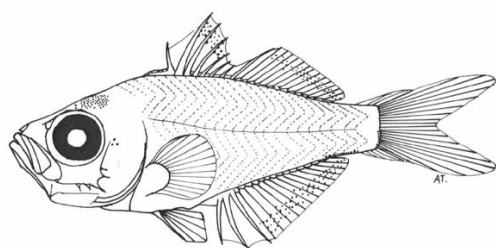
The donor community had continued to show strong support for the work of the Mekong River Commission over the past six months with several new

agreements being signed to stimulate new programme work. H.E. Mr Sithaheng Rasphone, Chairman of the Mekong River Commission (MRC) Joint Committee for 2005/2006 told delegates at an MRC Joint Committee meeting held in Savannakhet, Lao PDR. He said that this continuous support was a positive encouragement to the MRC and would help it fulfil the goals set out in the 1995 Agreement on Cooperation for Sustainable Development of the Mekong River Basin, the agreement which founded the MRC. He added that over the past year MRC's relationship with China and Myanmar had strengthened and MRC was now poised to move toward more concrete technical cooperation within its established dialogue partnership and was in the process of discussing and identifying a number of possible work areas. MRC Secretariat Chief Executive Officer Dr Olivier Cogels added his thanks to the donor community for their support and told delegates that new funding agreements worth more than US\$8.3 million had been signed with Australia, Belgium, the Challenge Programme on Water and Food, Denmark, Finland, France, Japan, Sweden and the United States of America during the past six months. The Belgian funding had enabled the launching of the Navigation Programme, while Denmark had provided the bulk of funding needed to support the Fisheries Programme for a further three years.

#### **New species of freshwater stingray discovered in Thailand**

Bangkok Post, 13 April 2006

A new species of freshwater stingray has been discovered in a river in western Thailand, but its chances for long-term survival are slim, warns WWF. The new species of stingray, measuring 60cm in width, was first observed two years ago, but has only now been confirmed in detail as a new species by researchers from WWF Thailand and the US-based Smithsonian Institute. WWF Thailand's Senior Freshwater Biologist, Dr Chavalit Vidthayanon, along with Smithsonian Research Associate Dr Tyson Roberts, have described in detail the new freshwater stingray, known as *Himantura kittipongi*, found in the



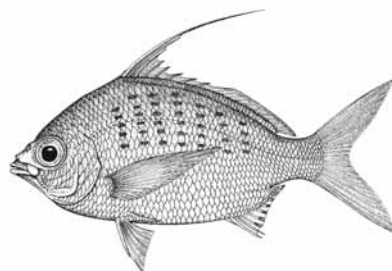
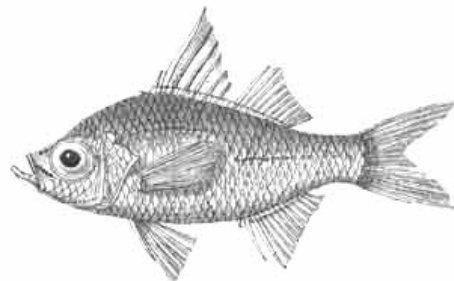
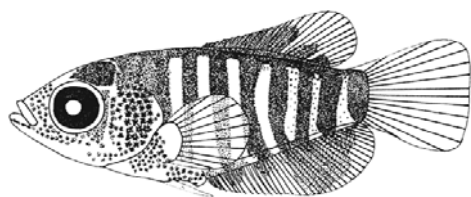
Maeklong Basin of western Thailand. Thai rivers have been plagued by serious pollution, overfishing and dam building, which have taken a deadly toll on Thailand's once diverse and abundant river life. The ray is believed to exist in only small numbers. The new species was named *Himantura kittipongi* after prominent Thai fish expert Kittipong Jaruthanin who first observed the ray in 2004.

**Historic End to the Fishing of Mekong Giant Catfish in Thailand**

Mekong Wetlands Biodiversity Programme press Release April 2006

An agreement has been signed in Thailand to cease fishing of the Mekong Giant Catfish, *Pangasianodon gigas*, from this year onwards. The agreement was made at a milestone meeting in Chiang Khong on 29 March 2006, and signed by the Department of Fisheries, the Senator of Chiang Rai, the Mekong Giant Catfish Club (MGC Club), Mekong Wetlands Biodiversity Conservation and Sustainable Use Programme (MWBP), Chiang Khong Head of District and Wildlife Fund Thailand. The meeting, organised and facilitated by the MWBP, provided a platform to continue dialogue and develop possible solutions on Giant Catfish issues and wider aquatic biodiversity conservation issues in Chiang Khong. Commitment to

abide by the decision was provided by the MGC Club, if members were compensated on their investment for nets. In response to this request, conservation organisations and government departments committed to raise funds for compensation. The Mekong giant catfish is a Mekong endemic and candidate for the world's largest freshwater fish. In 2003 it was listed as Critically Endangered by the World Conservation Union (IUCN). The MWBP identified the fish as a flagship species to address wider aquatic biodiversity conservation issues in the Mekong River, and is now a partner in the Mekong Group contributing to the development of a conservation strategy for the giant catfish. Another outcome of the successful meeting was the agreement of community members and the MGC Club to designate a fish conservation zone along the Mekong River adjacent to Had Krai village. This deep pool is known to be an important area for dry season fish refuge and possible spawning area of selected fish species. There will be no fishing permitted in this area. The official declaration of this fish conservation zone was made during the Giant Catfish Festival in Chiang Khong on 17-19 April 2006.



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## *Fishes for the future*



**At the end of the festivities guests and villagers moved down to the river to release thousands of giant catfish that had been bred in captivity into the river.**

**Pictured above is Mr Sanae Polprasithi who was the first biologist in the world to breed the Mekong giant catfish in captivity.**

**It is hoped that this breeding programme, coupled with the conservation agreements in Chiang Khong, will help preserve the Mekong giant catfish for years to come.**



*Giant catfish photos by Zeb Hogan. Other photos by Fisheries Programme staff and Lem Chamnap*



# Catch and culture

## Mekong giant catfish ceremony in Chiang Khong

### *Thais agree to new conservation measures*

***In Chiang Khong the start of the giant catfish season had a different flavour this year. The Mekong Giant Catfish Association is now changing its focus to conservation.***

***Fishers have agreed to halt their pursuit of the giant catfish in exchange for financial compensation for their fishing nets.***

***Local officials addressed the crowds on the need to preserve the Mekong Giant Catfish.***



# Fishers on parade



**The annual ceremony marking the giant catfish season kicked off with a colourful parade followed by a procession of more than a dozen fishing vessels.**



# Dancing up a storm



*Music and dancing filled the streets as the young women performed traditional dances with mythical creatures, while the local men had a much less strenuous time providing the melodies.*

