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During the flood season, the Mekong River Commission broadcasts daily flood forecasts on its website, www.mrcmekong.org

China signs data-sharing agreement



On June 11, flood forecasting staff at the MRC Secretariat in Phnom Penh clicked open an email in the office queue to find that the river at Yunjinghong had been 536.52 metres above sea level the night before, and 532.88 metres at Man'an.

This small piece of information marked a historic event: the beginning of technical cooperation between China and the Mekong River Commission. Yunjinghong and Man'an are locations on the Upper Mekong or Lancang in Yunnan province, China. The first email, sent from a data receiving centre in Kunming, was a test-run of China's agreement to provide river data to the downstream countries, signed with the MRC in April this year.

Dr Dong Zheren, Director-General of the Department of International Cooperation, Science and Technology of the People's Republic of China signed the historic agreement on behalf of the Chinese government at the MRC Secretariat in Phnom Penh on 1 April 2002. According to the agreement, China will provide hydrological information to the

four downstream countries of Cambodia, Lao PDR, Thailand and Viet Nam.

The information is particularly relevant given the concerns by Lower Mekong countries about possible fluctuations in river levels.

Under the agreement, the Chinese Ministry of Water Resources in Beijing will provide water level and rainfall data to the MRC Secretariat in Phnom Penh by email every 24 hours. The information will come from the river monitoring stations in Yunnan province. In return, the MRC will provide assistance to the Chinese government to upgrade the two monitoring stations transmitting the data and provide training for the station staff.

The agreement is a step towards a closer working relationship between China and the MRC, which the two parties have been working on over the past year. China has been a regular dialogue partner with the Mekong River Commission at yearly meetings since 1996. In signing the agreement, MRC Chief Executive Officer Mr Joern

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China signs.....

Kristensen noted that the final draft had been agreed upon within a relatively short period of time, indicating a high level of mutual understanding and cooperation between China and the downstream countries.

Following the signing, a technical team from the Secretariat visited China from 17 to 26 May to work out details of the implementation. The team was received by the Vice Director-General and Chief Engineer of the Hydrology Bureau at the Ministry of Water Resources.

Regular data transmission from China occurs during this year's flood season from 15 June to 15 October. The Chinese side also agreed during this visit to consider the MRC's request that they provide dry-season readings and measurements of cross-sections of the riverbed.

The MRC manages a complete network of hydrological monitoring stations on the Lower Mekong, which transmits information directly to the Secretariat in Phnom Penh. (See page 3 for a story about how this network has changed.) During the flood season, the Mekong River Commission broadcasts daily flood forecasts on its website, www.mrcmekong.org.

Mekong movie screened to mark anniversary



The television premiere of a new movie about the Mekong River and its people marked the 5 April anniversary of the agreement that created the Mekong River Commission.

"Mekong: The Mother" has been screened privately before. Its broadcast over the weekend of 5-7 April in Cambodia and Lao PDR was the first time the movie has been on television.

Filmed around the picturesque Khone Falls in Lao PDR and other riverside locations in Cambodia, Thailand and Viet Nam, the half-hour film highlights the significance of the mighty Mekong to its people, featuring the fisher people, boat

pilots and port workers who earn their living from its ebb and flow. They tell of their livelihoods, their beliefs, and their love for the river that feeds them.

Staff of the Mekong River Commission Secretariat and government officers in the four member

countries of the Mekong River Commission collaborated in the making of the movie.

"Mekong: The Mother" is part of the Mekong River Commission's ongoing campaign to increase awareness of Mekong issues and the need for strong regional cooperation in order to manage natural resources for the population of 60 million living in the Mekong River Basin. Cambodia and Lao PDR lie mostly within the basin and are the two poorest member countries. Copies of the movie are now available on VCD from the Mekong River Commission's Documentation Centre.

Is the Mekong River over-fished? Yes and no!

The high intensity of fishing activity in the Lower Mekong Basin gives a general impression that the system is over-fished. This impression is strengthened by anecdotal evidence from many fishers who claim that their catches have been decreasing over time.

In reality, the overall catches in the Mekong are higher now than in the past. However, it is also true that individual catch rates have declined, because the increase in the number of fishers has outstripped the increase in catch (see table).

Usually we speak of over-fishing when dealing with a single-species fishery. In the Mekong, more than 120 species are traded. Fishing pressure impacts differently on dif-

ferent species. Larger species which spawn later in life tend to be depleted more quickly than small fish which reproduce at a comparatively young age. Hence, species such as the well-known Mekong giantcatfish (*Pangasianodon gigas*) are probably over-fished (although

its population decline is probably due to a number of factors, of which fishing is only one). On the other hand, a small, prolific fish such as trey riel (*Henicorhynchus siamensis*) is not overfished, and indeed could probably withstand even heavier fishing pressure.

To improve the Lower Mekong Basin countries' capacity in fisheries impact assessment, the Assessment of Mekong Fisheries Component (part of the Mekong River Commission's Fisheries Programme) recently organised field training for counterparts in fisheries agencies. Fisheries personnel from Cambodia, Lao PDR, Thailand and Viet Nam inspected several water management schemes including hydro-power dams, irrigation dams, flood control dikes and weirs in the four countries, with a view to understanding basic engineering concepts of water management schemes, in order to be able to provide appropriate advice during planning processes. The AMFC will produce Guidelines for Fisheries Impact Assessment, with practical lessons from the case studies in the Mekong River Basin.

Table: Changes in population size and fish catch in the Great Lake, Cambodia, between 1940 and 1995/96

Period	Fishing commune inhabitants	Great Lake fish production (tonnes)	Fish catch/fishing commune inhabitant	Decline in catch/fisher
1940	0.36 million	125,000	347 kg	
1995-6	1.20 million	235,000	196 kg	44 %

Measuring the Mekong: A technical revolution promotes regional cooperation

Suon Sarin, a 34-year old Cambodian, unlocks his workstation at seven every morning at Phnom Penh Port. He opens the data logger - a wall-mounted unit that looks like a fusebox - and a low purring noise greets him, indicating that another river level reading is being taken. Today the river is 2.3 metres high. A checklist pasted on the inside of logger door reminds him of routine maintenance tasks, while a brush and dustpan hang on a hook. Twice a day he checks the logger reading against a staff gauge - a measuring stick planted just clear of the water weeds at the river bank.

When the water level fell to the lowest point of the year last month - the middle of the dry season - Sarin's job included extending the pipe carrying the tube which uses air pressure to take a reading, another six metres to reach the low water. Between these two daily readings, he sometimes pilots a small boat with fellow-workers from the Cambodian Department of Hydrology to measure water flow at different locations on the Mekong and Bassac rivers.

Sarin is in the vanguard of a technical revolution that is changing how the countries of the Mekong work together on river management. The equipment he manages allows flood forecasts to be made and broadcast almost instantly around the world through the Mekong River Commission website. With the same information, other studies can also be undertaken - now accessible to anyone who can log on to the Internet.

Through the Mekong cooperation established since 1957, river levels were recorded for many years by hand, transmitted to a national authority and then, months later, to the Mekong River Commission Secretariat, where the data were published yearly in a Hydrological Yearbook, useful to scientists wanting to carry out long-term studies of the river. Readings were taken from a long



ruler set into the slope of the bank or vertically in the riverbed, recorded by someone who needed the home that was provided for them at the station site. In times of floods, the readings could be faxed or radioed through to the Secretariat, for broadcast of warnings to the National Mekong Committees.

The rise of satellite communications and the Internet revolution have changed this way of working. The data logger in Sarin's station contains a SIMcard, identical to those used in handphones, which can phone through the readings to a computer at the MRC Secretariat at a pre-arranged time. The readings are then incorporated into a flood forecast which is updated daily on the Mekong River Commission website.

The new data loggers and associated equipment are being installed in renovated shelters along the Mekong: seventeen stations in all, including two in China, with the help of the Australian government. While power can be supplied to the stations in most places, as a safeguard measure, each station has a solar panel which charges a battery inside the shelter, to run the station during night time.

Like the old railway gate operators, the

role of gauge-readers has changed as the technology has evolved. The equipment is set to take automatic readings, but people are still needed to check that the equipment is functioning and to do basic maintenance. While the equipment upgrade has taken close to six months, the Appropriate Hydrological Network Improvement Project (AHNIP) is planned to continue over five years at a cost of roughly US\$ 2 million. Most of the remaining time will be spent on training the staff in the use and maintenance of the new equipment, which requires computer literacy and some language skills.

An old staff gauge with blue markings remains as a relic at Phnom Penh Port; Sarin says it dates from French colonial times. An antique winch-and-pulley system for moving cargo is set into the slope of the embankment beside it. There is a long history of river-measuring on the Mekong, as generations of engineers, hydrologists and flood forecasters have sought to unlock its secrets. Many of the measuring stations on the Mekong date from the 1950s; some of the older ones, including Vientiane and Pakse, were set up in the 1920s.

The measuring station at Sarin's work site is used to train gauge-readers in the

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Flood Forum focuses on action plans



When the rain starts, the fishing starts too in the rice fields and mangroves of the Mekong region. Streams and irrigation canals overflow, not only with water but with fingerlings headed for the nutrient-rich fields and flooded forests. This tide of life brings food and economic security to the ordinary people of the Mekong. Lower Mekong residents consume an average of 36 kg of fish and fish products per capita annually. By comparison, Danes, considered to have a high rate of fish consumption compared with other Europeans, consume 5-6 kg per capita every year.

Scientists and planners once thought of the floods as an annual scourge in the Mekong region, bringing only destruction. Some of the earlier dam and irrigation projects were conceived with a view to evening out the flow of the Mekong - even talked about it in terms of "taming the 9-headed dragon", the nine branches of the Mekong in the Delta of Viet Nam.

Better understanding of the ecology of the Mekong region now means that policy-makers and planners talk about "Living With Floods" rather than preventing them. Major agencies working in disaster preparedness now recognise that floods cannot be prevented, but that much of the damage can be mitigated by early warning systems and better land-use planning

measures. "Flood Preparedness" therefore was the theme of the 1st Annual Mekong Flood Forum, held on 23-24 April 2002 at the Cambodiana Hotel in Phnom Penh.

The Forum brought together over 100 representatives of disaster-preparedness and development agencies from the region. Among them were government agencies, donors, UN agencies and non-government organisations (NGOs), as well as external flood experts. Participants reported lessons learned from dealing with past Mekong floods and presented action plans which included steps as diverse as providing more boats to people in flood-prone areas (by Oxfam), establishing rolling stocks of rice seed (by the Food and Agriculture Organisation) and adjusting hydrologic models to produce more accurate flood forecasts (the MRC Secretariat).

The Forum provided a platform for all participating agencies to learn from shared experiences, discuss emerging needs and coordinate their activities. It also raised awareness of the importance of holistic flood management in the Lower Mekong River Basin.

The Annual Mekong Flood Forum was the first event of its kind in the region, financed by the Japan-based 3rd World Water Forum and the Netherlands government. A second event is planned for April of 2003.

Mekong River Commission for Sustainable development

MRC Events



Donor agencies of the MRC met at a 28 May meeting in Phnom Penh, expressing strong support for the progress made by MRC over recent years. They were particularly interested in MRC's regional flood management and mitigation strategy (FMM), and they congratulated the Secretariat on its progress in promoting gender equity. MRC's closer working relationship with China was also commended.

MRC donors meet twice a year, once at a formal meeting held back-to-back with a meeting of the Council, the MRC's highest governing body, and once at an informal meeting in May. The May meeting is usually an opportunity for donors to hear of progress made, and for the Secretariat to highlight current needs. This year's Informal Donor Meeting involved representatives of 20 donor agencies that currently fund MRC programmes.

MRC needs that were highlighted during the meeting were for transboundary environmental management, and for the Large Rivers Symposium scheduled to be held in Phnom Penh next year.

The Joint Committee of the MRC focused on financial and administrative issues at two meetings of the MRC Joint Committee in the last three months. At the 15th meeting of the Joint Committee in Vientiane on 13-14 March, members reviewed general operating plans of the Secretariat and were updated on progress of MRC programmes.

A smaller Special Session was then convened in Ho Chi Minh City in May, to focus on issues which are not usually covered in the regular meetings. At the Special Session, financial planning procedures were further discussed. Delegates also heard more about technical issues relating to MRC's core programmes. Presentations were made by staff from the Basin Development Plan team at the Secretariat, by the team leader from Halcrow, the consultancy firm working to provide MRC with a computer-based Decision Support System, and by a South African expert in river ecology. The two-day meeting concluded with a field trip to the Mekong Delta, together with visitors from the Murray-Darling Basin Commission. Participants gained first-hand knowledge about some of the issues presented in the conference room.

The Murray-Darling Basin Commission in Australia sent a high-level delegation to the MRC from 9 to 15 May as part of the Strategic Liaison Programme between the two organisations.

MDBC President Dr Roy Green, Chief Executive Don Blackmore, Chairperson of the Community Advisory Committee, Leith Boullie, and Programme Manager, Susan Kemp first attended a day of the Joint Committee's Special Session in Ho Chi Minh City and then visited the Secretariat in Phnom Penh.

The MDBC delegation's visit to the Mekong region was in return for a visit made by the Joint Committee members to Australia last year to study public participation arrangements being supported by the MDBC. The Australian delegation received detailed updates from representatives of the MRC's core programmes and provided some input into programme planning. The dialogue helped MDBC clarify priorities for the Strategic Liaison Programme in time for their upcoming monitoring meeting with AusAID in July. AusAID support to the MDBC-MRC twinning programme is planned over three years, with this being Year 2.

The twinning programme works through an exchange of expertise between the two organisations in support of practical, action-based measures for river management.

The Murray-Darling Basin Commission is a regional river basin authority supporting the states of Queensland, New South Wales, Victoria and South Australia to implement coordinated river basin management. In some respects, its role mirrors the arrangements that MRC coordinates between the four sovereign nations of Cambodia, Lao PDR, Thailand and Viet Nam.

Shipping fire highlights need for proper safety rules in water transport guidelines

Clouds of black smoke billowed into the sky as more than 10,000 litres of diesel fuel burned on board a boat on the Tonle Sap on the morning of May 16. The accident highlighted the vulnerability of the Mekong environment, in which a majority of the craft on the inland waterways consist of small boats run by families and private operators.

In this incident, firefighters with five fire trucks took more than two hours to control the blaze, which threatened a nearby squatter village. The boat owner, 47-year old Heng Ly, escaped with burns but had to abandon his boat, which burned to cinders on the riverbank.

The boat had been used to take diesel fuel to the small wooden boat operators in the area - typical users of the Mekong's network of waterways. People have used the rivers, tributaries and canals in the Mekong Basin for generations. Navigation is part of their cultural heritage. In the Mekong Delta, around 80 per cent of the inland waterway fleet consists of small boats on which whole families live; small private operators are also the main users in Cambodia. In Lao PDR and Viet Nam some fleets are government-owned but there is a gradual process of privatisation. Maritime vessels generally belong to large companies.

Water transport, particularly in the rural areas of the river basin, is essential to delivery of social services such as schools, health clinics and nutrition programmes. It is more energy-efficient than road transport, and has a large cargo-carrying capacity. It is therefore kinder to the environment.

However, spillages are always possible and, in the case of modern cargo such as petroleum or other industrial products, can become environmental hazards. It is therefore important to establish a proper ship safety inspection system which allows for registration and control of all types of vessels to ensure their compliance with safety rules. In the Lower Mekong Basin, shipping rules and regulations hardly exist, or when they exist, are not monitored or enforced. In the Lao PDR and Thailand, the rules for navigation are different, although Laotian and Thai boats use the same river which forms the border between the two countries for a great distance.

The MRC Navigation Programme is dealing with these aspects. Establishing a common regional "navigation code" will standardise and enforce rules and regulations, safety inspections, guidelines for carriage of dangerous goods, pilotage, and so on. Recently, MRC and ESCAP worked jointly to set up a com-



mon system of buoys and beacons for the Mekong countries to help skippers crossing borders. The programme will also work towards increasing awareness of the natural navigation potential of the Mekong among government planners and the private sector, changing the misconception that going by road is the best and cheapest form of transport. In line with its mandate of transboundary work, the MRC will also assist in institutional strengthening and in the improvement of waterway infrastructure.

Workshops and Studies

ESCAP-MRC Sub-regional Work-shop on Strategic Planning and Management of Water Resources for South-East Asia

16-19 July 2002 at MRC Secretariat.
Contact person: Nguyen Chi Cong,
E-mail: cong@mrcmekong.org

2nd Regional Workshop on Review of Protected Areas and Development in 4 Lower Mekong Basin countries

3-4 September 2002 at Cambodiana Hotel, Phnom Penh.
Contact person: Chin Samouth,
E-mail: samouth@mrcmekong.org

Study tour for MRC Joint Committee members to examine resolution of transboundary issues

5-15 October 2002 in Europe.
Contact person: Siriporn Kunlapatanasuwana,
E-mail: siriporn@mrcmekong.org

International Large Rivers Symposium II

11-14 February 2003 in Phnom Penh.
Contact person: Dr Chris Barlow,
E-mail: barlow@mrcmekong.org
Website: www.lars2.org

New Publications

Technical papers

Fisheries in the Lower Mekong Basin: Status and Perspectives,
MRC Technical Paper No. 6, 95 pages.
May 2002

Financial analysis and risk assessment of selected aquaculture and fishery activities in the Mekong Basin,
MRC Technical Paper No. 5, 66 pages.
April 2002

Deep pools as dry season fish habitats in the Mekong River Basin,
MRC Technical Paper No. 4, 24 pages.
April 2002

Mekong giant fish species: on their management and biology,
MRC Technical Paper No. 3, 29 pages
April 2002

Status of *Pangsiid* aquaculture in Viet Nam,
MRC Technical Paper No. 2, 16 pages
April 2002

Status of the Mekong *Pangasianodon hypophthalmus* resources, with special reference to the stock shared between Cambodia and Viet Nam,
MRC Technical Paper No. 1, 29 pages
April 2002

All Technical Papers cost US\$5, plus postage costs. Summaries available on the MRC website.



On CD

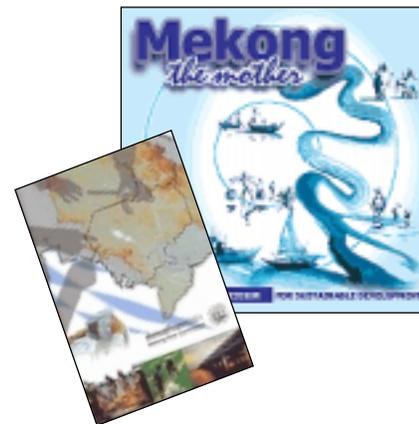
Fish migration and spawning study.
Results of a survey covering 355 fisheries in 113 locations along the Mekong. US\$20, plus postage costs.

Proceedings of the 1st Annual Mekong Flood Forum, 23-24 April 2002.
Free, plus postage costs.

Mekong: The Mother. A half-hour movie on the importance of the Mekong to its people. Available on VCD in English, Thai and Khmer. Available on VHS in Lao and Vietnamese. Free, plus postage costs.

All publications can be ordered from the MRC Secretariat's Documentation Centre, phone: (855-23)720-979 ext 1030, fax: (855-23)720-979, or email: mrcs@mrcmekong.org

Mekong government agencies should write to the MRC to obtain free copies.



Available on our website,
www.mrcmekong.org

Annual Report 2001, 40 pages.

Catch & Culture, a newsletter for fisheries professionals June 2002.