

Technical session II

Overview paper: Wetlands, Water and Livelihoods

Governments have contracts with their own people. International organisations have mandates to tackle the big issues. As the international convention responsible for wetlands, Ramsar has to listen carefully to the realities and priorities of the Contracting Parties, which, in many Asian countries, are concerned with water, livelihoods and poverty reduction.

Water is unique amongst the Earth's resources. Apart from one or two minor chemical changes the volume of water on the planet remains constant. But available fresh water amounts to less than half of one percent of all the water on Earth; the rest is saltwater or is locked up in ice. So we must use the water that is accessible for human usage as wisely as possible.

Livelihoods have been defined as "comprising the capabilities, assets (material and social resources) and activities required for a means of living" (Conway and Chambers 1992). This can be interpreted as meaning earning an income, but the majority of the world's 1.3 billion people who live on the equivalent of less than \$1 a day may well not earn any money at all: many of these people are subsistence fishers and farmers, relying on fish and other aquatic resources and wetland-related crops such as rice for their livelihood.

Economists argue that the solution to poverty is growth, and that as economies grow governments can invest in cleaner technologies and less resource-depleting processes. Where the economists miss out is in recognising the value of the environmental services that nature provides.

Goods and services generated by wetlands tend not to be counted in national statistics, and governments, development agencies and donors have often undervalued the potential that natural resources can play in poverty reduction and economic development.

Furthermore, there is a perception amongst many development practitioners that traditional approaches to conservation have sometimes exacerbated poverty. In particular, protected areas and other mechanisms that aim to restrict people's access to, and use of, natural resources while generating significant social, economic and environmental benefits at the national and international levels, have, in many cases, had a negative impact on the food security, livelihoods and culture of local people.

Clearly, the sustainable use of water and sustainable management of waterbodies are critical to food security and the development of national and regional economies on which the health and wealth of nations depend. Wetland-dependent fishers and farmers are most vulnerable to environmental change and disaster; however, the connections between wetlands, water, livelihoods and poverty are not always being made.

The Mekong River

Forty-seven per cent of the people of the world rely directly on and are affected by the waters that run off of the Tibetan Plateau. The Himalayan snowmelt and rains feed into 10 major rivers that flow into eleven different nations, including Bangladesh, India and China and the countries that comprise the Indochina region.

One of these rivers, the Mekong (or Lancang as it is called in China – each country has its own vernacular name) is the world's 12th-longest river. It flows through parts of Yunnan Province in China, on to Myanmar, Lao PDR, Thailand, Cambodia and finally Vietnam, where it drains into the South China Sea. The lower basin of the Mekong covers 800,000 square kilometres.

The situation of the Mekong River demonstrates many of the livelihood issues that Contracting Parties need to consider when formulating strategies to implement the Ramsar Convention in Asia. The Mekong contributes to outstanding examples of wetland habitats: from the Tibetan icecap, through underground aquifers, over rapids, filling the greatest lake in Southeast Asia, forming acid-sulphate peat swamps, depositing nutrients to form one of the most productive deltas in the world and finally draining into extensive coastal wetlands.

Natural resource management issues and priorities differ in each of the countries through which the Mekong passes. Even though the countries vary significantly in their level of development and population size, four countries of the Lower Mekong Basin – Thailand, Laos, Cambodia and Vietnam – have made an agreement to develop the river sustainably.

In Northeast Thailand, with over 20 million people, the water resources are virtually fully developed and problems are emerging associated with salination of arable lands as a result of over-clearing of native vegetation and poor irrigation, soil erosion, and declining water quality in the rivers and streams. In Laos, with 5 million people and a much poorer country from a GDP perspective, the water resources are largely undeveloped. Cambodia, with 11 million people, is recovering from decades of war and is highly reliant on wetland resources, while in the Mekong delta some 20 million Vietnamese live on some of the most highly productive agricultural land and coastal wetlands in the world.

Consequently the needs of the countries in the Mekong basin also vary. Myanmar needs the river for transport and as its political boundary; Thailand wants more water for irrigation and to service its urban areas; Laos wants capital and expertise to develop hydropower for export to Thailand and Vietnam; Cambodia needs capital and infrastructure and to secure sustainable fishery resources in the Tonle Sap (Great Lake); Vietnam, however, while in need of capital for the management of resources, does not want any upstream development to exacerbate saltwater intrusion in the Mekong delta during the dry season, even though some of this upstream development is in Vietnam itself. China, with half the total length of the Mekong, wants to modify the river – and not only in China – to increase the river's navigation potential for trade and has also planned 15 mainstream dams for water storage and hydropower.

In addressing these priorities, governments must recognise that the lives and livelihoods of 60 million people across the river basin are dependent on access to and the availability of the natural resources provided by the river system, especially its water and fish.

Is water a common good?

Access to and the use of water are fundamental human rights and a public trust to be guarded by government at all levels. And although there has always been an assumption that water is a common good, this is not enshrined in legislation or rights conventions.

Indeed, the water laws for the Mekong Countries are usually prefaced by articles that state that “water is the property of the state”, which may be a practical approach but opens up the option of selling off the water resource – both directly and indirectly, through hydro-power. Privatisation of water is often promoted as a solution to equitable water sharing. It is hard to understand how water can be the property of one state when it is modified as it moves from one state to another. In a region rich in water resources, it seems paradoxical that thousands of the poorest people have no right of access to fresh water.

Environmental risk

Coastal storms, droughts and floods have become regular hardships, livelihoods can be wiped out, and even in times of flood accessing drinking water can be a major problem. The causes and severity of damage are often the result of human intervention – deforestation, the conversion of coastal wetlands, or upstream infrastructure development reducing or changing the water flow for downstream users.

Ramsar and the Mekong

Five of the six riparian Mekong states are already signatories to the Ramsar Convention and Laos, the sixth, is in discussion with the Secretariat. Vietnam was one of the first countries to accede to the Convention whereas Myanmar joined only last year. Strictly speaking, there are only three Ramsar sites in the Mekong Basin, two of which are selected here to demonstrate water and livelihood issues.

Boeng Chhmar, Cambodia

Boeng Chhmar is part of the lake system of the Tonle Sap, the largest freshwater lake in Southeast Asia. The lake forms a natural floodplain reservoir in the depression of the Cambodian plain and is drained by the Tonle Sap River into the Mekong near Phnom Penh. When the level of the Mekong River is high the flow of the Tonle Sap River reverses: water is pushed into the lake, raising its level by 10 metres or more and increasing its area from 2,500–3,000 square kilometres in the dry season to 10,000–16,000 square kilometres in the rainy season.

This unique hydrological cycle and the vast areas of seasonally flooded lowland

Boeng Chhmar and Associated River System and Floodplain. 23/06/99; Kampong Thom province; 28,000 ha; 12°48'N 104°16'E. State-owned. A lake formed amid inundated forest in the northeast fringe of Tonle Sap lake, consists of permanent open water surrounded by a creek system and flooded forest and becomes one with Tonle Sap in the wet season. Boeng Chhmar is a good example of near-natural wetlands that play a substantial hydrological and biological role in the natural functioning of two major rivers, Stoeng Stoung and Stoeng Chikreng. The area supports a large assemblage of plant, fish and waterbird species, many of which are listed as rare, vulnerable, or endangered. The Tonle Sap region plays a vital role in the economy of Cambodia by supplying fish to the population, and several million people depend upon its productivity. (Source: The Ramsar List of Wetlands of International Importance.)

forest and shrubs that it creates, in a tropical climate, result in a very high biodiversity of fish, reptiles, birds and mammals.

The Tonle Sap fisheries influence fish productivity throughout the Lower Mekong Basin, where consumption is estimated at 30 kilogrammes per person per year and the total yield value is US\$1.4 billion. Sixty per cent of these fisheries are open-capture fisheries yielding 2.5 million tons a year (MRC Secretariat 2004), and this yield, together with comparatively small yields from reservoirs and aquaculture helps make Cambodia the 4th-largest fishery producer in the world.

The Tonle Sap system relies on annual inundation and regular discharge, so that if dams were built upstream water retention in the wet season and release in the dry season would threaten the wellbeing of the fish population. This would impact not only on the livelihood of the millions of Khmers who depend on this resource as their principal source of animal protein and calcium but also on the central economy of Cambodia. In addition, households living along the river combine their subsistence-level fishing activities with growing crops such as rice, vegetables and lotus flowers, both for home consumption and for cash income, and these would all be severely affected by changes in the flooding regime.

Furthermore, a vicious circle of decline has begun, with heavy exploitation of the fisheries resource largely because distant markets have become accessible, new technologies are used in fisheries management and there is widespread illegal fishing. Local people have increasingly turned for their livelihoods to the exploitation of timber from the flooded forests, not only for home-use but for sale as charcoal. These forests are the breeding grounds for the fish.

The livelihood security of Mekong-dependent farmers and fishers is critical to the stability of the region, and development strategies that see infrastructure development as the key to economic growth need to carefully assess the possible impact of livelihood displacement on these economically excluded people.

The Cambodian Government has introduced new opportunities for community fishing within its well-established and highly lucrative Fishing Lot system, but the resource depletion has come about largely as a response to external physical and economic factors.

Global policies have also influenced fisheries and aquatic ecosystems in the Mekong region. Globalisation has opened up new opportunities for increasing export earnings and employment in the fisheries sector in many developing Asian economies: the export performance of the fisheries sector has generally surpassed that of most agricultural commodities. Export of raw materials and value-added fish and fishery products has created employment for women who are skilled in basic food-processing operations.

Yet there is another side to the trade equation: there is a belief that the expansion in fisheries trade has increased the risks of economic inequity and vulnerability of poorer fish-farmers (Mekong Learning Initiative 2005) Employment, income generation and food security (e.g. consumption of protein) are believed to be in jeopardy, and the fear is that small-scale fishers and farmers will increasingly be pushed out of the production and supply chain, and replaced by wealthy concession holders and large processors. Ramsar signatories concerned with aquatic biodiversity have a responsibility to engage with and monitor these processes, both within and outside designated Ramsar sites.

Lashihai, Yunnan Province, China

Interestingly, the Lashihai (Lashi Lake) Ramsar site in the Upper Mekong in China faces some issues similar to those at lowland Boeng Chhmar.

Firstly, sincere congratulations to the Peoples' Republic for recognising Lashi Lake as a wetland site of international importance and listing it as a Ramsar site. It is an example of a site that is internationally important not only for birds but also because it supplies water to the internationally important World Heritage site of Lijiang.

Lashi is a unique freshwater, plateau lake with marsh meadows. It is located at the headwaters of the Jinsha (Yangtze) and Lancang (Mekong) Rivers and is an important migration passage, breeding ground and wintering habitat of around 75 species of wild geese and ducks.

Lashihai Wetland. 07/12/04; Yunnan; 3560 ha; 26°53'N 100°08'E. Provincial Nature Reserve. A unique plateau freshwater lake with marsh meadows, located between 2,440 and 3,100 meters above sea level at the headwaters of the Yangtze River in the Hengduan Mountains. It is an important migration passage, breeding ground and wintering habitat of nearly 76 species of wild geese and ducks, e.g. *Anas crecca*, *Fulica atra*, and *Aythya fuligula*. The water outlet of the lake is connected to the Jinsha River with major hydrological functions of flood control, storage and water balance in the middle and lower reaches of the Yangtze River. It also supplies drinking water to Lijian City, a famous World Heritage cultural property. As a biodiversity 'hotspot', Lashihai attracts 200-300 tourists daily particularly for birdwatching and horse-riding; major protection measures include a ban on and inspection of fishing, poaching and hunting, but a potential threat for the lake ecosystem is increasing unplanned tourism. Ramsar Site No. 1437. (Source: The Ramsar List of Wetlands of International Importance.)

The Lashi catchment covers an area of 256.6 square kilometres, about 40 square kilometres of which originally drained underground through limestone to the Yangtze and Mekong Rivers. China recognised that upland river catchments, like those serving Lashi Lake, are China's water lifeline and should remain a 'green hub'. In 1998 the Central Government introduced a total ban on logging, so as to halt excessive siltation from soil erosion, and established a high-zone national nature reserve on the Tibetan plateau that encompassed the sources of the Mekong, Yangtze and Yellow Rivers.

This produced an interesting paradox: on the one hand a logging ban and reforestation, an environmental plus that helps to deliver water services downstream, but on the other hand the loss of the principal source of livelihood for many upland minority groups dependent on the timber resource.

Lashi is one of the most important water catchments in Lijiang County. The basin has a population of 18,034, with 3,249 rural households. Ninety-five percent of the population are Naxi people living mostly in the valley; 4% are Yi people living in communes in the mountains. The local economy is agriculture-based – a mix of crop cultivation, forestry, animal husbandry and fishing, with small-scale, household-owned, food processing mills. The local government provides incentives to develop eco-tourism, which is still in an early stage of development. By the end of 1998, government poverty statistics recorded 584 kg of grain and 1,011 RMB (\$123) annual income per capita in Lashi Township, a standard of living that is classified as marginal for poverty relief. The incomes of 10% of the catchment's population and 90% of the ethnic highland Yi group are below the poverty threshold and these people have to depend on grain aid from the government. (Source: Oxfam America)

Lashi Lake formed naturally in the catchment, becoming almost dry in summer, and this natural drying made it nutrient rich and a highly productive fishery; like the Tonle Sap it encompassed an area of flooded forest. But in 1994 an embankment was constructed around the lake in order to increase its water storage capacity so that water could be diverted to Lijiang Town, where tourism was developing apace. As a consequence, the lake no longer drained into the Lancang but was, in effect, diverted to the Yangtze River Basin. Between 1999 and 2002 artificially-raised water levels caused severe flooding of Lashi Lake and some of the lowland wetland communities lost all their crops – sometimes to grazing birds, which thrived on the inundated pastures. The farmers turned to uncontrolled fishing and severely reduced the fish population; all the native fish species became extinct because of competition from introduced carp and other changes in the ecology of the lake. The forest disappeared. Migratory water birds, some of which are listed as endangered, were over-hunted for food.

More recently, as part of a government plan to further increase the tourism potential of Lijiang town and create a new Yulong County City, it has been proposed to increase the amount of water diverted from Lashi Lake to Lijiang old town and to take additional water from the lake for the new city. Once again this would be done by increasing the wet-season storage capacity of Lashi Lake by raising the height of the present impounding embankment and channelling the water to the new Lijiang development. According to official plans, would cause loss of livelihood to 2,000 people and require the relocation of 585 people.

Issues and solutions

What is the future for Lashi Lake and Boeng Chhmar as designated Ramsar sites?

How will the Chinese and Cambodian Governments guarantee the ecological integrity of the sites with so many pressing demands, many of which they have little control over?

Water and livelihood issues

The issues confronting Lashi Lake and Boeng Chhmar are echoed in water catchments throughout the Mekong Basin and in many river basins in Asia, and they apply to many Ramsar sites.

- What mechanisms can be found to compensate upstream people (like the Yi and Naxi people of Lashi) for the loss of or changes to their livelihoods and the environmental services they secure for downstream users?
- What mechanisms can be found to compensate downstream users (the Khmers of the Tonle Sap) for the loss or changes to their livelihoods and environmental services when people living upstream utilise the water resource for their own benefit?

Water and livelihood solutions

Stakeholders *have* to find solutions together. Wetlands are not only the concern of local people or of environmental protection agencies: they are the concern of the Ministries of Water Resources, Agriculture, Fisheries, Tourism and Transport and of neighbouring countries.

Ramsar is a stakeholder in its listed sites, and the Convention's presence brings the strength of international recognition and responsibility. But in rapidly developing countries, this importance needs to be understood in terms of government priorities for water and livelihoods security.

There is an ongoing need to:

- Raise the awareness of decision-makers about these potential impacts and dilemmas;
- Establish participatory water-catchment planning at local, basin and regional-basin-wide levels, and include ministries with different priorities for water usage;
- Engage with engineers, fishery technicians and agriculturalists, who can sometimes find technical solutions to human problems; and
- Challenge assumptions, especially economic assumptions, that are often theoretical and may have no scientific basis or grounding in reality.

We need to understand these deeper issues in a more holistic manner. There is a need to:

- Undertake economic, social and cultural assessments of wetlands and combine them with ecological and other environmental data;
- Recognise the interconnectedness of wetlands and water with livelihoods;
- Listen to local knowledge;
- Recognise that win-win situations are very rare – there may be losers. Be prepared to compromise;
- Look beyond the peer group and engage widely with the whole range of stakeholders; and
- Recognise that participatory processes mean nothing if participants are not part of the decision-making process.

Sustainable livelihoods and poverty reduction

Each of the Mekong riparian states has given poverty reduction precedence in national development plans, and, within a framework of national economic growth, food and livelihood security are the priorities. Some countries – China and Vietnam – are already demonstrating considerable successes. In order for the Ramsar Convention to meet its own priorities, it needs to merge the way it is implemented more closely with these national priorities and to tackle wetland management from different perspectives.

Ramsar's 'wise use' approach has been complemented by the Convention on Biodiversity's (CBD) 'sustainable development', although ten years on from Rio there is still no widely shared vision of what sustainable development might mean in practice. However, CBD and its ecosystem approach puts people firmly at the centre. 'Sustainable development' is an over-used phrase, but goes to the heart of tackling a number of inter-related global issues such as poverty, inequality, hunger and environmental degradation.

Inter-sectoral approaches are essential, and pursuing Ramsar's aims of wetland conservation through the *Millennium Development Goals* and *Poverty Reduction Strategies*, which are more inclusive processes, may be one approach.

Other important tools, for example *National Wetland Action Plans*, which have been promoted by Ramsar, can be significant if they are developed and implemented with the full participation of stakeholders from all sectors.

Addressing national and regional priorities

Wetland conservation, water and livelihoods tend to be treated as separate policy realms. Conservationists try to package projects that deliver win-win solutions and play down the incompatibilities between different goals. In less developed countries, addressing conservation, water and livelihood issues in an integrated way will be the key to economic development, poverty reduction and maintaining the effectiveness of Ramsar's wetland conservation goals.

Further considerations

At the African Regional Meeting on Ramsar COP9, delegates "URGED the Ramsar Secretariat to have a clear vision and strategy on wetlands management and poverty reduction in Africa and SUPPORT the preparation of a resolution on this issue for COP9". In view of the priority that governments in Asia have also placed on poverty reduction, delegates from Asia might want to add their voice to this proposal.

Acknowledgements

I would like to thank the Organising Committee and the Ramsar Secretariat for inviting me to the Asia Ramsar Regional Meeting and allowing me to express views that are entirely my own. I also thank Wetlands International for facilitating my visit to Beijing through the Wetlands and Poverty Reduction Programme supported by the Dutch Government.

References

- Chambers, R. & Conway, G.R. 1992. *Sustainable rural livelihoods: practical concepts for the 21st century*, Discussion Paper 296. University of Sussex, Institute of Development Studies, Brighton, England.
- Mekong Learning Initiative 2005. *Learning for Livelihood Improvement: Experiences in aquatic resources management, sustainable agriculture, and community development from Vietnam and Lao PDR*, (ed. R. Kinakin). Mekong Learning Initiative/Oxfam America East Asia Regional Office, Phnom Penh, Cambodia.
- Mekong River Commission 2004. *Annual Report of the MRC Programme for Fisheries Management and Development Cooperation*. Mekong River Commission, Phnom Penh, Cambodia.

Mike Ounsted
Chair, Wetlands and Livelihoods Working Group
5 May 2005