

Water disputes in the Mekong basin

The Mekong is south-east Asia's longest river (around 4 900km). From its source in Tibet, it flows southwards through the Chinese province of Yunnan before passing through five south-east Asian countries (Myanmar, Thailand, Laos, Cambodia and Vietnam). Nearly half of the river is in China, where it is known as the Lancang. For the 70 million people who live in the Mekong basin, the river is a vital source of food and water, as well as an important transport route. Increasingly, it is being used to generate hydroelectricity. Human activity threatens the river's fauna and flora, and competition for natural resources is intensifying.

Hydroelectricity: economic potential, but at a high environmental and human cost

The Mekong offers great hydroelectricity potential and numerous dams are under construction on it. To date, most of these are in China: [eight](#) dams are already built, and a further 20 are planned. Along the Lower Mekong, two dams are under construction, and a further nine are planned, most of them in Laos. There are dozens more along Mekong tributaries; as of mid-2017, Laos had [46](#), with a similar number being built. Completed dams in China already have a capacity of 15 600 MW ([theoretically](#) enough to meet the needs of over 10 million consumers), and if all 11 dams on the Lower Mekong are all built, they will have a capacity of up to 9 400MW. For China, hydropower offers a cheap and clean alternative to coal. Laos, a landlocked country with few natural resources, hopes to become the '[battery](#) of south-east Asia', using its hydroelectricity exports to boost economic growth and [lift](#) itself out of poverty.

Environmental impact of hydroelectricity

At present, the Mekong has the world's [largest](#) freshwater fishery, and is second in aquatic biodiversity only to the [Amazon](#). The river's 850 fish species include the iconic but critically endangered [Mekong giant catfish](#). Dams cause the loss of natural habitats: [Nuozhadu](#), which is the largest Chinese dam on the Mekong, flooded an area the size of Malta. They also have downstream effects. In the past, water levels followed the seasons. However, dams are now disrupting this natural cycle, as water is released from reservoirs to follow demand for electricity. As a result, downstream flows have become far less [predictable](#), and variations between the wet and the dry season have been considerably [reduced](#). A sixth of the 850 fish species in the Mekong adapt to seasonal variations by migrating along the river, taking their cue from changing water levels; upsetting the natural cycle could [affect](#) migration patterns. Dams are also a physical barrier to migration. To offset this effect, dams are built with features, such as 'ladders' and fishways, enabling fish to bypass them. Unfortunately, a US [study](#) suggests that only a small fraction of migratory fish succeed in getting past dams through such passages. The environmental impact of hydropower on the Mekong is not yet fully understood, due to the lack of reliable [data](#) covering a sufficiently long period and the fact that on most stretches, dam-building is still at an early stage. Nevertheless, it seems likely that the more dams are built, the greater the effect will be, with a reduction in the number of fish and the loss of certain species.

Environmental laws require dam builders to carry out impact assessments. Based on the results of such assessments, projects are sometimes modified; in China, the [Guonian dam](#) was even cancelled, over concerns that it would affect a nearby glacier. However, assessments are often seen as a mere formality, and construction on some dams (e.g. [Huangdeng](#) in China) begins even before they are completed.

Hydroelectricity dams also affect human communities living along the river

In Laos, the Xayaburi dam, scheduled to begin operating in 2019, will eventually displace over 2 000 villagers; there are [concerns](#) that they will not be paid enough to help them adapt to their new environment



or to compensate for the loss of their homes. Inhabitants of the Mekong basin derive up to [two-thirds](#) of their animal protein intake from fish, and many also depend on fish for their livelihoods; any possible drop in the numbers of river fish would seriously affect them. [Vegetables](#) grown on fertile riverbanks exposed during the dry season are another source of food and income; however, upstream of dams water levels no longer drop as far, leaving a smaller area of exposed riverbank for seasonal vegetable gardens. The Mekong also helps agriculture by depositing fertile silt in floodplains; existing dams are holding back [half](#) the sediment that used to pass from the upper to the lower Mekong, and with more dams the problem will get worse.

Particularly hard hit is the Mekong delta, Vietnam's rice bowl and home to [one-fifth](#) of its population. Alongside excessive groundwater extraction and rising sea levels due to climate change, [sediment loss](#) is causing the delta to [subside](#) by several centimetres a year. The lower the delta is, the more vulnerable it is to saline intrusion, with seawater flowing up to [90 km](#) inland and harming crops. Experts [believe](#) that the delta could disappear over the next 100 years. Even if this does not happen, one study [estimates](#) that the effects on fish stocks and agriculture will cancel out the expected economic benefits of hydroelectricity, resulting in a net loss to the Mekong countries of US\$22 billion.

Other human activities in the Mekong basin

Although attention has focused on dam building, there are many other human activities that put a strain on natural resources. Diverting water for irrigation (in [Thailand](#), for example) may [exacerbate](#) water shortages in the Mekong delta (which experienced a particularly severe [drought](#) in 2016), contributing to the above-mentioned problems of subsidence and saline intrusion. Extracting sand and gravel from the river bed (in Cambodia, Phnom Penh's booming construction sector uses up to [20 000 m³](#) of sand a day) causes river banks to [erode](#), aggravates subsidence in the Mekong delta, and harms wildlife.

The Mekong has great potential as a transport route bringing Chinese goods from Yunnan to Laos and eventually the South China Sea. China backs a [project](#) to dynamite rocks and islets along a stretch of the river in Thailand that currently prevent larger ships from travelling downstream to the Lao city of Luang Prabang. The project is opposed by Thai environmentalists and fishermen who fear its impact on the river's ecology. Whether or not it goes ahead will depend on a survey to be carried out by the Thai authorities.

Geopolitical implications

According to a 2012 [report](#) by US intelligence agencies, water conflicts in the Mekong and other river basins are expected to fuel instability and regional tensions. In future, tensions are likely to be exacerbated by [climate change](#) (which among other things will probably mean more severe droughts) and rapid population growth. Hydroelectricity is a particular bone of contention. China does not consult downstream countries on its dam-building projects; it also regularly releases large quantities of water from reservoirs with [little advance warning](#), wreaking [havoc](#) downstream. Such incidents potentially [aggravate](#) already complicated relations between China and south-east Asian countries, which on the one hand depend on economic ties with their large neighbour, but on the other hand [fear](#) its dominance.

Critical to resolving such tensions is effective cooperation between the Mekong countries. Established in 1995 by Cambodia, Laos, Thailand and Vietnam, the [Mekong River Commission](#) (MRC) has established mandatory consultation between member states on hydroelectricity and water diversion projects. However, its mandate includes only the Mekong mainstream and not the river's many tributaries. Moreover, China is not a full member, but only a 'dialogue partner', and thus exempt from consultation requirements. Consultations are in any case not binding; Laos has [gone ahead](#) with its dam projects, despite opposition from downstream countries. The country also ignored the results of a 2010 MRC-commissioned [study](#) that recommended a 10-year moratorium on dam-building to enable a better understanding of the environmental risks. In 2015, China launched the [Lancang-Mekong Cooperation Mechanism](#) as an alternative forum – potentially a positive initiative if it encourages closer cooperation on water resource management and other areas of common interest between China and downstream countries, but also one that could serve as a [vehicle](#) for prioritising China's interests over those of its neighbours.

European Parliament position. In a December 2015 resolution, the EP [stressed](#) the role of the Mekong River Commission in carrying out consultations and impact assessments on hydroelectricity projects.

