

Asia's Water Tower

Tibet is the source of most of Asia's great rivers. The Ganges and Brahmaputra, which bring water and sustenance to countless millions in India and Bangladesh, begin life in the far west of Tibet. So too the Indus, which flows along the length of Pakistan and into the Arabian Sea. The Irrawaddy, lifeblood of Burma, has its source in the south east of Tibet. Further north we find the sources of the Salween and the Mekong, upon which much of Southeast Asia, including Vietnam, Cambodia, Laos

and Thailand, depend. And from the vast centre of Tibet rise the Yangtze and the Yellow, which meander across the breadth of China to the great cities in the east.

Many new large hydroelectric dams, mammoth water diversion projects, unregulated mining in the headwater regions, and the compounding effects of global climate change are matters of growing concern for the region. Ensuring food and water security, particularly in the face of climate change, must begin with a sustainable, long-term and trans-boundary approach to water governance.

China has been building dams on a staggering scale and at an

extraordinary rate. By 2000, China had built 22,104 large dams (defined as having a wall height of over 15m), providing a total of 77GW electricity generating capacity. For comparison, the US, the world's second most prolific dam builder, had 6,390 dams, and India 4,000.

By 2010 China had installed 220GW of hydropower — nearly sixty times the generating capacity of Australia's Snowy Mountain Scheme, and well over four times Australia's total electricity generating capacity. It met its 2015 target of 290GW a year ahead of schedule and planned to reach 430GW (increasing its earlier target of 380GW) by 2020.

China has built more large dams than the US, Brazil and Canada combined and shows no sign of slowing down. While only a faction of these dams are found in Tibet, with the middle and lower courses of its rivers already heavily dammed, the only way for China to reach such capacities is to begin heavily damming rivers in Tibet.

The deep canyons through which the Salween and Mekong cascade towards Southeast Asia, the Brahmaputra heads into India, and the Yangtze leaves Tibet to begin its long meander across China, hold the highest hydropower potential in the world. Ambitious plans are afoot for the Mekong, Brahmaputra, Salween and Yangtze.



The world's largest dam is the Three Gorges Dam on the Yangtze River in China, with 22 GW of capacity. It is the largest electricity generating facility in the world, with around seven times the capacity of Australia's largest coal-fired power station. An even larger dam is on the drawing board for Tibet, a 38GW giant at the point where the Yarlung Tsangpo (which becomes the Brahmaputra) takes a giant bend before descending off the Tibetan Plateau into India. The Xiaowan Dam on the Mekong, completed in 2010, has a wall height of 292m around the height of an 80-storey building.

The reality of large hydropower projects is that local communities bear the brunt of these controversial projects and reap few if any of the benefits. The electricity generated serves the needs of large cities and industrial centres rather than the local population. Dams not only disrupt the flow of water. They block the flow of silt which otherwise carries vital nutrients downstream. And with less silt being deposited at the delta, salt water encroaches on cropland. Upstream, land is lost and communities displaced by dam reservoirs. Habitats are destroyed and species threatened. Downstream, ecosystems are profoundly altered, affecting fisheries and livelihoods.

The Intergovermental Panel on Climate Change (IPCC) report for 2021 establishes, in relation to dams, that "management of river flow is comparable in magnitude to climate change effects for snow-fed rivers on a continental scale." This confirms that China's dam building activities are having negative continent-wide impacts.



The Yarlung Tsangpo (the Tibetan name for the upper course of the Brahmaputra) originates near Mount Kailash and runs east throught the Tibetan Plateau for about 1,700 kilometres.

China has done little to engage its downstream neighbours over its dam building projects. It has not joined the Mekong River Commission – an intergovernmental agency that works directly with the governments of Cambodia, Laos, Thailand and Vietnam on the trans-boundary management and sustainable development of the Mekong.

Nor has it ratified the UN Convention on the Law of the Non-Navigational Uses of International Watercourses, which aims to help manage transboundary water resources. Needless to say, China's intention to build many more dams along Tibet's rivers has striking implications for downstream nations.

Yet the government has an even more controversial plan for Tibet's rivers. China already diverts water from the lower Yangtze north to Tianjin and Beijing via over a thousand kilometers of canals and tunnels and has even grander plans for moving water from the south to the parched north, defying the country's physical geography. The next stage of China's planned mindboggling South-North Water Diversion, which would divert water from the upper reaches of the Yangtze to the Yellow River, received renewed interest in 2020.

Tibet's rivers, and the estimated 1.4 billion people across 11 large downstream nations who depend on them, are also threatened by climate change affecting the flow of these rivers through melting glaciers and shifting precipitation patterns. Maintaining water security in the face of climate change will depend, among other things, of the effective trans-boundary management of Tibet's rivers.

These dams pose major questions of water sovereignty. By controlling the Tibetan Plateau, China has control of Asia's water tap and seems ready to use that power, with little regard for the needs of its neighbours.

Read our full report 'Tibet: An Environmental Challenge' at https://www.atc.org.au/report-tibet-environmental-challenge/

