

Extract from [WWF Report: World's Top 10 Rivers at Risk \[pdf, 1.76 MB\]](#)
<http://assets.panda.org/downloads/worldstop10riversatriskfinalmarch13.pdf>

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Salween, Nujiang or Nu River

Basin Characteristics

Length: 2,800 Km (Searin no date)

Basin size: 271,914 Km² (WRI 2003)

Population: 6 million (WRI 2003)

Population density: 22 people/ Km² (WRI 2003)

Key economic activity: fishing and agriculture

Key threats: 16 proposed large dams, ineffective institutions and governance (WWF 2004). Political instability and ongoing civil war exacerbate key threats

The Salween river basin is more than twice the size of England, the second largest river basin in southeast Asia⁴ and one of the last free-flowing international rivers in Asia⁵ (WWF 2005b; Goichot 2006). Shared by China, Myanmar (formally Burma) and Thailand, 6 million people live in the Salween watershed and depend on the river for their livelihoods, dietary protein, and nutrient rich food particularly during the dry season (IRN 2004). The Salween flows from the Tibetan Plateau adjacent to the Mekong and the Yangtze, in the “Three Parallel Rivers” World Heritage area, at the epicentre of biodiversity in China⁶ (Kunming Institute of Botany & University of Bern 2005; IRN 2004). In the upper Salween’s Nujiang Prefecture in China, 92% of the population consists of ethnic and religious minorities (Public Open Letter 2005). Along the Thai and Myanmar border, there are over 13 ethnic groups living in traditional communities on the river’s banks (EarthRights International 2004). Currently, there is also ample water per person⁷ (WRI 2003).

The Salween is home to 92 amphibian species, and 143 fish species of which 47 are found nowhere else in the world; 3 areas support endemic birds (Revenga et al. 1998). The Salween delta and associated wetlands support populations of the unique Fishing Cat, the Asian Small-clawed Otter and the Siamese Crocodile (WWF 2005b). It has the world’s greatest diversity of turtles including the Giant Asian Pond Terrapin and Bigheaded Turtle (Goichot 2006). On valley walls, terrestrial flora and fauna are well-maintained in often pristine conditions. The Golden Eye Monkey, Small Panda, Wild Donkey of Dulong and Wild Ox still flourish in this basin (Goichot 2006).

The Threat of Dams on the Salween

Dam construction poses the single greatest threat to the Salween River. China plans up to 13 large hydropower projects in a cascade that would transform the free-flowing river in upper basin into a series of channels and reservoirs (Public Open Letter 2005).

The upper Salween is characterized by high elevation and deep gorges⁸, which give it great potential for hydropower generation⁹, but also eliminate most options for limiting the severe environmental damage that would ensue (WWF 2004). Nine of the proposed dams are located on the main stem, in national nature reserves, and very close to the UNESCO World Heritage site (IRN 2004). China's Yunnan Provincial Government is proposing one of the highest dams in the world¹⁰ and China appears to be progressing without consultation with the downstream riparian residents in Myanmar or Thailand (IRN 2005; IRN 2004).

Myanmar's government is also planning or has begun several medium to large dam projects along the Salween River (Chiang Mai News 2005). By far the largest and most advanced project is the 228m high Tasang Dam¹¹ which would create a 640 Km² reservoir flooding the lower sections of three major tributaries (Bangkok Post 2006; WWF 2004; Searin no date). Although no needs assessments have been conducted, and the Environmental Impact Assessments are incomplete, the detailed design study is underway (Bangkok Post 2006). Three quarters of the electricity generated by the Tasang would be exported to Thailand¹², and this project is part of wider negotiations for the Greater Mekong Subregion Power Grid (Ruangdit 2004; WWF 2004; Searin no date). As well, last year, Thailand and Myanmar resurrected a proposal to create a 62 Km tunnel along the Thai-Myanmar border to divert 10% of the Salween's flow in Myanmar to the Bhumibol reservoir in Thailand, 300 Km away (McCormack 2000).

There are serious questions as to the safety and economic feasibility of the proposed dams, and risks to the social fabric of the basin residents. Although the slopes surrounding the Salween are more stable than the Mekong, variations in water levels and landslides threaten its banks¹³ and China's proposed projects are in a mountainous area which has frequent earthquakes and landslides (Bravard & Goichot 2005; Public Open Letter 2005). China's hydropower cascade would also displace 50,000 ethnic minority people (Environmental News Network (ENN) 2005; IRN 2005). In Myanmar, dam construction and water diversion may be particularly devastating for the indigenous communities because the military government is notorious for human rights abuses¹⁴ (Chiang Mai News 2005). Further, foreign revenue from the exported electricity¹⁵ flowing into Myanmar may be expropriated by the governing junta (Chiang Mai News 2005)¹⁶.

Responses and WWF Role

The Salween lacks any treaty among riparian countries and each has different and conflicting plans for development in the basin (Yoffe and Ward 1999).

In April 2004, China suspended plans for the construction of 13 dams on the Salween (IRN 2005)¹⁷. However, the Environmental Impact Assessments for the project have not

been disclosed to the public (Public Open Letter 2005). Thus far, environmental groups within China opposing dam construction in the Salween have lobbied authorities through the media, public demonstrations, and the distribution of petitions urging the provincial and national governments to release studies on the dams' environmental impact and allow greater public debate (ENN 2005).

On August 31, 2005, 61 groups and 99 individuals including Greenpeace and Friends of Nature, China's largest environmental association, signed a petition. This open debate over the Salween River's fate is testing the government's approach after it released a five-year plan that commits China to halt environment degradation while pursuing economic growth (ENN 2005). Not-for-profit organizations like Earth Rights International are also raising awareness of human rights and environmental issues (Earth Rights International 2004). In 1999, 'Salween Watch' a coalition of organizations based in Chiang Mai, Thailand formed to oppose harmful development projects in this basin (Salween Watch 2006). In addition, representatives from ethnic groups in Myanmar have urged the Thai government to halt dam development along the Thai-Myanmar border (Shan Sapawa Environmental Organization 2006).

Some well-planned dam developments for water and energy supply are often justified, but countries should take advantage of the opportunity to consider all options and to only build dams that minimize environmental impacts and maximize social benefits (WWF 2004). Building dams off the mainstream, controlling thermal pollution, and mimicking natural flow patterns (e.g. higher flows during the wet season) can minimize the ecological impact of dams (WWF 2004). In countries where concentrated dam development is taking place, governments should at least implement the guidelines of the World Commission on Dams, and assess the cumulative impacts of the dams. In addition, efforts should be made to retrofit old dams to reduce environmental and social impacts while increasing economic benefits, such as generating electricity.

In China, WWF is working with national authorities to reduce environmental and social impacts of existing and planned dams while increasing economic benefits. WWF calls for further development of small scale hydropower along the tributaries alone, in combination with the development of tourism. The Salween basin has summer temperatures and rich biota suitable for tourism and compatible with local labour development within the natural environment. In addition, it holds the potential for developing the rapids for high-end white water rafting (Goichot 2006).

NOTES

⁴ The Mekong is the largest river basin in southeast Asia (WWF 2005b).

⁵ The Bramaputra is another.

⁶ Recognized by UNESCO as a World Heritage Site, the Three Parallel Rivers Region is one of the richest temperate regions in the world (IRN 2004). The area contains over 6,000 different plant species, and approximately 50% of China's animal species including more than 90

amphibian species, over 140 fish species of which roughly one third are endemic, and the world's most diverse turtle community comprised of 10-25 genera (IRN 2004; WWF 2005).

⁷ 23,796 m³/person annually (WRI 2003).

⁸ In this region, the 'Three Parallel Rivers' flow within less than 80 Km of one another (Xinhua News Agency 2003).

⁹ Theoretical hydropower potential is estimated at more than 100,000 MW (FAO 1999a)

¹⁰ Maji Dam at 300 m (IRN 2005).

¹¹ 3,300 MW capacity, in southern Shan State (WWF 2004).

¹² In addition, Myanmar and Thailand have already agreed to export 1,500 MW to Thailand by 2010 (WWF 2004).

¹³ In fact, there is a relatively large unstable zone in Bingzhonggluo, on the left bank, in the upper basin. Several landslides have occurred in the past already (Bravard & Goichot 2005).

¹⁴ In conjunction with infrastructure projects due to an ongoing civil war between Shan and Karen minority and the ruling military junta. Forced labour, relocation, rape and murder are common methods of intimidation under the guise of 'national development' (Chiang Mai News 2005).

¹⁵ An estimated 3,500 MW, three times what Myanmar currently consumes, from the Tasang Dam alone (Chiang Mai News 2005).

¹⁶ According to the 2003 UN Human Development Report, 40% of Myanmar's budget is allocated to military expenditures, 1.3% on education, and 0.3% on health (Chiang Mai News 2005).

¹⁷ In 2003, China invited a panel of scientific experts to comment on the Salween Dam proposal and all opposed the dam (IRN 2005).

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