

- *The Mong Ton dam will provide 90% of its hydroelectricity to China and Thailand, leaving ethnic minority communities in Myanmar's Shan state to bear the costs.*
- *Tens of thousands of people will be displaced when dam's 640-square kilometer reservoir fills, and habitat will be lost for endangered species like the clouded leopard and Sunda pangolin.*
- *Even before the dam is complete, its construction has accelerated deforestation and resource extraction in the area.*



The riverscape of Kunhing township, whose name means "thousand islands" in the Shan language. Photo courtesy of Action for Shan State Rivers.

Before reaching the Keng Kham valley, the bright green Pang river, the Salween's major tributary running south through central Shan state, splits into three parallel rivers that form myriad channels creating islands and islets, blurring the line between forests and water in a pristine and biodiverse riverscape. Rarely seen by outsiders, these are the famed "thousand islands," forming a stunning inland delta that gives the "Kunhing" township its name. To the south, the Pang meets the Salween in a cascade of waterfalls. Seen from the air, white water tumbles down through verdant forested islands on an escarpment hundreds of meters long.

The thousand islands' labyrinthine landscape and its surrounding forests bloom with tremendous ecological and ethnic diversity. If plans for the Mong Ton dam go ahead, they will all be lost under the giant reservoir.

Early stages of construction have already started on Mong Ton, the biggest hydropower project planned for the Salween. Logging in the future flood zone and gold mining along the river bed is already

Salween's murky waters. The dam site is located in a heavily militarized area in southern Shan state between territories controlled by Shan and Wa forces, and its flood zone is projected to be roughly the size of Singapore at 640 square kilometers. In addition to the huge environmental and social costs of building the Mong Ton dam, observers are also concerned that the dam lies near an earthquake fault line, in the "most earthquake prone region in Myanmar", Hla Hla Aung, a senior researcher at the Myanmar Earthquake Committee told The Third Pole (<https://www.thethirdpole.net/2016/10/26/southeast-asias-last-major-undammed-river-in-crisis/>) earlier this year.



Kunhing township in Myanmar's Shan State. Maps courtesy of Google Earth and Google Maps.

This is the third article in a five-part series exploring Myanmar's Salween landscape amid galvanizing plans to develop hydropower projects along its course.

Part I

(<https://news.mongabay.com/2016/11/damming-the-salween-what-next-for-southeast-asias-last-great-free-flowing-river/>) outlines plans being made by businesses and governments in China, Thailand and Myanmar to harness the Salween's vast hydroelectric potential.

Part II

(<https://news.mongabay.com/2016/12/fire-on-the-salween-dams-in-conflict-zones-could-threaten-myanmars-fragile-peace-process/>) looks at Salween dams' already bloody legacy and the projects' direct or indirect relationship with perpetuating instability and conflict in Myanmar's Shan and Karen states.

Part IV

(<https://news.mongabay.com/2016/12/karen-people-call-for-a-peace-park-instead-of-big-hydropower-in-their-homeland/>) meets actors involved in creating the "Salween Peace Park," combining wildlife conservation and peace-building in Karen state, where the world's longest running civil war has raged since 1949.

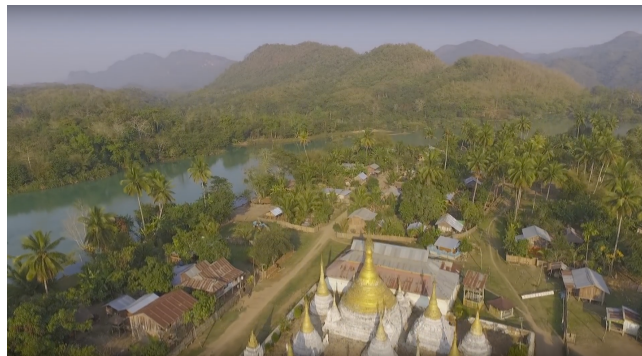
Part V

(<https://news.mongabay.com/2016/12/stone-sand-water-the-key-ingredients-changing-the->

changes facing the broader Salween landscape due to Myanmar's rapid economic development.

ETHNIC AND ECOLOGICAL DIVERSITY AT STAKE

Shan state is Myanmar's largest and most ethnically diverse state, populated by dozens of ethnic minority groups, including the Shan, Palaung, Pa-O, Wa, Lahu, Padaung, Akha and Lisu, all with divergent dialects or languages, customs, traditional dress and beliefs. In Kunhing township, and throughout the Pang and Salween watersheds, rural populations depend on the river and the forest to survive. They grow rice and vegetables in the lands surrounding the river, their lowland farming tracts dependent on river water for irrigation. The river is harvested for fish, crab, prawns, snails and oysters. The surrounding forests provide vegetables and mushrooms, traditional medicines and firewood. For the moment, some communities here get their electricity from mini-hydropower on the Salween's tributaries. Kunhing township is dotted with historical sites of deep significance to Shan people, including ancient pagodas, traditional Shan chiefs' houses and sacred cave temples, Nang War Nu, Director of the Kun Heing Foundation and ex-member of parliament for the Shan Nationalities Democratic Party told Mongabay.



The Keng Kham temple is immensely significant to local Shan people and an important part of their cultural heritage. According to local villagers it was built before World War II, when individual Shan states were ruled by "sawbwas." Image courtesy of Action for Shan State Rivers.

The significance of the land to its residents is profound. Forests, fisheries and waters are assigned not just economic, environmental and political value, but also deep cultural, social and spiritual meaning. "My spirit is there; I am connected to this land. If I die, my spirit will be there." a Paw Tao Ma Ha, a villager

Organization in 2009.

The forests bordering the Salween were once home to a rich catalogue of mammals. In an account written at the turn of the 20th century, colonial administrator Sir James George Scott described "secluded and jungly slopes" teeming with tigers, panthers and other cats, rhinoceroses, "all kinds of deer," otters, bears, badgers, porcupines and monkeys and apes "in great variety."

In the succeeding century, hunting and deforestation took a heavy toll on the region's biodiversity, but even today the unique ecosystems of the Salween watershed support globally endangered species. In pockets of remote mountainous forest habitats, the Indochinese tiger, (*Panthera tigris corbetti*), clouded leopard (*Neofelis nebulosa*), Sunda pangolin (*Manis javanica*), a type of wild cow called banteng (*Bos javanicus*), can still be found, among hundreds of other globally important species. But decades of conflict and the remoteness of the Salween mountains and valleys have left the river and its ecosystems woefully understudied, meaning current information on the ecological health of the watershed is extremely scarce. As well as unleashing a myriad other environmental and social consequences on the biodiversity and local people, the Mong Ton project's vast reservoir would inundate unexplored areas of global ecological importance.

A \$10 billion hydropower project backed by Thai and Chinese developers, the Mong Ton dam will export 90 percent of its energy to China and Thailand. Critics of plans to develop the Salween's hydropower potential lament that China and Thailand will purchase most of the energy produced by the dams, leaving some of the poorest people in Myanmar — and indeed the world — to deal with the consequences. The project threatens to evict tens of thousands of people, including approximately 50,000 from Kunhing township, many of whom have already suffered from decades of conflict and displacement. For ethnic minorities that face flooding, their way of life will be over. "The forest and the river are so important not just for me, but for everyone living along the river basin. All of our livelihoods rely on the water and the forest," 61-year-old Par Zoi from Nar Sae village in Kunhing township told a researcher working for Mongabay.

increasingly vulnerable to the effects of climate change. In recent years, they have noticed increased sediment in the river, changes in its depth, or unusual floods. "Even before they are building the dam, we are already experiencing strange changes in the weather," Kham Mai, campaign coordinator at the Shan Sapawa Environmental Organization, told Mongabay. "How will they cope when the dam is built? Because some of the villagers live on the islands, small islands in the river, so they are so worried about that." she said.



The livelihoods of the people living along the Salween and its tributaries depend on the river. Photo courtesy of Mong Pan Youth Association.

The tropical mixed evergreen and deciduous forests in Shan state are some of Southeast Asia's largest (https://eia-international.org/wp-content/uploads/EIA-Organised-Chaos-FINAL-Ir1.pdf) significant international.org/wp-content/uploads/EIA-Organised-Chaos-FINAL-Ir1.pdf) tracts. Thanks to projects to illegal logging, agribusiness expansion and unregulated infrastructure development, the WWF region as one of ten global "deforestation fronts" (http://wwf.panda.org/about_our_earth/deforestation/forest_publications_news_and_reports/li (http://wwf.panda.org/about_our_earth/deforestation/forest_publications_news_and_reports/li (http://wwf.panda.org/about_our_earth/deforestation/forest_publications_news_and_reports/li The high rates of deforestation prior to the construction of dams, and the loss of forests once reservoirs contribute to climate change and incur huge biodiversity loss, further impacting the ability of local communities to support their livelihoods.

Hydropower development projects are one of the primary causes of deforestation worldwide, and the Mong Ton dam illustrates how this happens. Preemptive logging is taking place along access roads, as is clearing of forested areas that will be flooded by the dam's reservoir. "Sometimes I go to the forest to hunt for small animals, vegetables, bamboo, mushrooms and seasonal crops. The forest is very important for people, especially local indigenous people like us," Sai Lu, also from Nar Sae village in Kunhing township told a researcher working for Mongabay. "We have many kinds of wild animals here. I can't say if they are less or more now, but what I can say is I think because of the logging we don't see them near the village anymore." In a study

of the people they interviewed in a village near the dam site reported a negative change in forest and river ecosystem services, which they attributed to the logging around the dam.



Logging trucks pictured at the Mong Ton dam site in March 2016 by the Karen Environmental Social Action Network. Photo courtesy of KESAN.

An environmental impact assessment (EIA) and social impact assessment (SIA) conducted for the Engineering Corporation (SMEC) in 2015, but has been lambasted by critics of the dam. The company (<http://www.irrawaddy.com/news/burma/mongton-dam-consultations-a-rubber-stamp-community-SMEC>) appeared to be downplaying the negative effects of the dam. SMEC were unable to complete surveys as villagers vehemently opposed to the project refusing to take part in surveys, or blocking SMEC from entering the area (http://www.shanhumanrights.org/images/stories/pdf/August5_2015/Press%20release%20on%20SMEC) (http://www.shanhumanrights.org/images/stories/pdf/August5_2015/Press%20release%20on%20SMEC) were also blocked from entering the affected area in the Wa region by the United Wa State Army (UWSA) in June (<http://www.shanwomen.org/publications/press-releases/110-naypyidaw-must-contact>) just north of the dam site. Attempts to contact SMEC by Mongabay were unsuccessful, but in a statement (<http://www.mongabay.com/news/burma/mongton-dam-consultations-on-controversial-dam.html>) sent to the Irrawaddy river and their data gathering could lead to "suboptimal outcomes for the affected communities".

In a set of recommendations sent to the NLD government this September, the Save the Salween Network – a group of ethnic civil society organizations – said, "Agreements on the Salween hydropower projects cannot be determined by environmental and social impact assessment mechanisms as they remain illegitimate, lack accountability, transparency and the direct and representative participation and consent of local communities." Incongruities between research done by SMEC and that done by local communities themselves has left locals deeply mistrustful of the company's activities. Activist and ex-parliamentarian Nang War Nu told Mongabay of the massive discrepancy between her civil society group's study of the projected affected area and SMEC's: "I requested to see their mapping, and they showed it to me. I saw SMEC's map, including Kun Heng, but it was very different from the real map. The original map from the locals shows there are altogether about one hundred villages. But the project has said only about 10 villages will be in the flood area."



The river and its banks are sites of both daily life and religious observance. Photo courtesy of Mong Pan Youth Association.

Furious with SMEC's handling of its Mong Ton work, campaign group Action for Shan State Rivers said in a statement released in August 2015, "SMEC had angered locals by blatantly promoting the dam in public meetings, downplaying negative impacts, and promising them electricity, even though the dam's main purpose is to export power to China and Thailand." The group also delivered a petition with 23,717 signatures opposing the dam's construction to SMEC's Yangon office. "The government should recognize the voice of the people and they should cancel all of the Salween dams because there are no benefits for Myanmar at all, mostly the benefits will go to neighboring countries," Sai Khur Hseng, a representative of the Shan Sapawa Environmental Organization, and a vocal critic of the dam projects, told Mongabay. The Myanmar government's estimated completion date for the Mong Ton dam is 2030-2031 (<http://www.ifc.org/wps/wcm/connect/c7302c68-f34f-40bd-99b3-6ad04c0cfe0b/IFC%27s+SEA+Workshop.pdf?MOD=AJPERES>). President Htin Kyaw announced a new commission on Aug. 12 this year to evaluate all the planned hydropower projects on the Irrawaddy River, but the Salween has been afforded no such providence. The launching of a Strategic Environmental Assessment (SEA) across Myanmar's hydropower sector in September this year by the World Bank Group's International Finance Corporation (IFC), and Myanmar's MOEP and MOECAP, has been given a cautious welcome by some observers, who hope it could encourage the government and dam developers to adhere to international standards of practice. Others are deeply skeptical of the process and worry that the SEA assumes large hydropower development in Myanmar is a foregone conclusion. The World Bank Group and the

across Southeast Asia, leaving many to question the objectivity of an assessment guided by IFC. "The SEA starts from the assumption that large-scale hydropower is a given, rather than enabling consideration of alternatives that could inform open discussion on the best means of meeting Myanmar's energy demands and priorities," Pai Deetes, Thailand campaign coordinator for International Rivers told Mongabay. The cumulative effects of the Salween dams will also have transboundary impacts in China and Thailand, but these appear to fall outside of the scope of Myanmar's SEA, which will only involve assessments and consultations within Myanmar, said Deetes.

Activists, environmentalists and renewable energy experts in Myanmar are urging the government to call a moratorium on the Salween dams. They advocate for greener energy alternatives in place of mega-dams, such as mini-hydro, solar and wind power, which they say can be deployed more quickly to feed Myanmar's growing need for electricity. "Because 70 percent of Myanmar's population live in off-grid rural regions, prioritizing small-scale and decentralized energy sources over mega-dams is a better way to meet the immediate needs of local people," said Deetes (more in Part 5).

"No other rivers in ... the region continue to run free and support such lush and pristine forest areas and abundant biodiversity," Deetes told Mongabay. Without a comprehensive consultation process and consensus, dam developers, "cannot simply press forward with a project that will cause severe and widespread impacts on a globally important ecological system." she said

Experience from around the world of large dams — from the cascade along the Mekong that threaten the food security of tens of millions of people living in the Delta (<https://news.mongabay.com/2012/08/mekong-dam-spree-could-create-regional-food-crisis/>) Region, (<https://news.mongabay.com/2012/08/mekong-dam-spree-could-create-regional-food-crisis/>) to those that are being removed in the US to repopulate salmon run (<http://www.nytimes.com/2016/10/25/science/penobscot-river-maine-dam-removal-fish.html>)s (<http://www.nytimes.com/2016/10/25/science/penobscot-river-maine-dam-removal-fish.html>) — leaves critics of the Salween dams dumbfounded that Myanmar's civilian-led government has decided to continue the projects. The environmental and social costs of the mega-dams, and their role in potentially exacerbating conflict along the Salween, are compounded by the fact that almost all

Conversation

rural communities in the Keng Kham valley and throughout Kunhing township depend on healthy rivers, forests and fisheries to survive, knowledge of the potential impacts of the dam is minimal. Shockingly, some have never even heard of the \$10 billion infrastructure project just a few miles south of their homes. Nang Phaung, a 45 year-old from Wein Lon village in Kunhing township told a researcher working for Mongabay, "I never heard about the dam will be built on the Than Lwin River."

Continue reading Part IV (<https://news.mongabay.com/2016/12/karen-people-call-for-a-peace-park-instead-of-big-hydropower-in-their-homeland/>) of this series, which introduces efforts to build peace and conserve wildlife in Karen State.

Banner image: Aerial view of cascades on the Pang River, courtesy of Action for Shan State Rivers.

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