

Dams, Diseases, and Displacement: The Potential Public Health Costs of the Salween Dams

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It has often been said that public health can be a thankless line of work: where it is successful, it is largely invisible and ignored. The corollary is that, where systems fail, the results often are catastrophic and incur monumental costs, both to deal with the problem and in its toll on lives. Unfortunately, largely as a result of this circumstance, public health considerations seldom form part of decision-making in public works projects, often with disastrous consequences.

Many examples of such man-made disasters exist. One of the most extreme is the Aswan High Dam in Egypt, where changes in water flow and irrigation from dam construction resulted in favorable breeding conditions for snails and subsequently increased rates of schistosomiasis, a parasitic disease of which the snail is an intermediate host. To add further, mass treatment campaigns for schistosomiasis often entailed re-using syringes, fueling a spread of hepatitis C; today, Egypt has the highest infection rates of this disease in the world. Its effects are heavily felt today, as individuals continue to sicken and die from its long-term consequences: liver failure, cirrhosis, and liver cancer. While the case of schistosomiasis and the Aswan High Dam is one of the most dramatic, other examples abound. In many areas, changes in water flow due to the construction of dams in malaria-endemic areas resulted in subsequent changes in vector biology, such as predominance of more competent mosquito vector species. This, coupled with migration, has resulted in increases in malaria transmission and/or type, such as shifts from vivax malaria to the far deadlier falciparum malaria. Similarly, dams and resultant flooding in some cases have resulted in increases in *Wuchereria bancrofti* infection, a parasite causing lymphatic filariasis (elephantiasis). This also has largely been due to the creation of favorable breeding conditions for appropriate mosquito vectors.

These are but two sentinel diseases that are highly relevant to Thailand today, although they are certainly not common in this country, yet. Thailand has renewed its interest in investing in a series of hydroelectric dams on the Salween River in Burma, particularly with the rising costs of fossil fuels. The proposed sites are close to the border with Thailand and, in some cases, less than a hundred fifty kilometers away from Thailand's second-largest city, Chiang Mai. These sites are in war-torn areas which have witnessed widespread human rights abuses directed by the Burmese military largely against ethnic minority civilians, driving hundreds of thousands to seek refuge in Thailand, often as undocumented migrant workers. Human rights and environmental concerns have already been raised with regard to these projects, objections which have largely gone unheeded. Ongoing negotiations and agreements, the most recent of which was signed December 9th for the Hutgyi Dam, in Burma's Karen State, lack transparency and thus critical, independent evaluation, particularly with the increasingly autocratic nature of both countries' governments. Thailand's Energy Minister continued to justify the mutual benefit to both countries, saying these dams will "reduce reliance... on expensive fossil fuels and provide a much cheaper source of energy." The implication is that, since importation of fossil fuels from abroad is one of Thailand's largest sources of capital outflow, these dams will save Thailand money.

This view is myopic, seeing the proverbial trees but failing to see the forest. Polar differences in public health conditions between Burma and Thailand exist. Burma's infant, child, and maternal mortality rates amongst internally displaced persons is several times higher than that of Thailand, resembling corresponding figures from other humanitarian disasters, such as Sierra Leone, Niger, and Liberia. Much of this is due to the high prevalence still of infections such as malaria, lymphatic filariasis, typhoid, cholera, tuberculosis, and, increasingly, AIDS. The WHO ranks Burma's health system second worst in the world, only slightly outperforming Sierra Leone. This, coupled with ongoing migration that likely will worsen with militarization of these areas preparatory to dam construction, can result in disastrous public health consequences. Already, this has been seen near another Thailand-Burma mega-project, the Yadana Pipeline, where ecologic changes and high levels of migration may have contributed to severe malaria outbreaks this year in southern Thailand. Similarly, worsening human rights conditions in Shan State near Mae Hong Son and resulting migrations have fueled a large malaria outbreak this year in this Thai border province. And, for the first time in decades, lymphatic filariasis was seen again in urban Chiang Mai, where competent vectors still exist. The patients were migrants from Mongnai, Shan State, an area near the proposed Tasang Dam on the Salween River. Thailand's cornerstone for monitoring and treating infectious diseases in migrants remains the worker registration process. However, with an estimated less than half of migrants in Thailand legally registered, such reliance is foolhardy. These epidemics should serve as early warnings about cracks in the current Thai public health system as well as to the potential dire health consequences of the Salween dam mega-projects, consequences that do not respect limitations of borders. The costs of controlling such problems should the dams proceed may very well outweigh potential savings from cheaper electricity, particularly tragic as Thailand has sufficient domestic production sources, rendering the Salween Dams superfluous.

Disease prevention should be a consideration prior to planning of any project that may cause perturbations in the environment or may fuel demographic changes. The cost of preventing infectious diseases is much lower than that of controlling them once they have been loosened upon a population, and further research into these potential problems may yield higher returns than the very projects themselves.