THE LANCANG/MEKONG AND THE NU/SALWEEN RIVERS: PROMOTING REGIONAL WATERSHED GOVERNANCE AND DISTRIBUTIVE JUSTICE FOR DOWNSTREAM BURMESE COMMUNITIES

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Abstract:

This paper examines some of the current obstacles to watershed governance and distributive justice for the diverse ethnic communities in eastern Burma that rely upon the Lancang/Mekong and Nu/Salween Rivers for their economic livelihoods and cultural survival. More than two dozen large-scale dams are planned for these two river systems. Nearly all of them will be built and/or financed by the People's Republic of China (PRC), although other non-state actors are also centrally involved. The paper outlines some of the key forces driving the PRC to construct new dams in Yunnan despite mounting evidence that such projects will undermine rather than enhance human security and sustainable development in the region. Three projects are discussed: the Lancang/Mekong and Nu/Salween Cascades as well as the proposed Tasang Dam in northeastern Burma, which the state-owned China Export-Import Bank (CEIB) is considering financing. Special attention is focused on the environmental impacts of impoundment and the future political and economic costs of the PRC's failure to take the interests of downstream countries and their ethnically diverse populations more fully into consideration. The paper concludes with constructive recommendations towards the creation of a collaborative regional plan based on the principles of integrated river basin management.

Keywords: Watershed Governance, Justice, Integrated River Basin Management, Burma, China

This paper examines some of the current obstacles to watershed governance and distributive justice for the diverse ethnic communities in eastern Burma that rely upon the Lancang/Mekong and Nu/Salween Rivers for their economic livelihoods and cultural survival. More than two dozen large-scale dams (>15 meters) are planned for these two river systems and nearly all of them will be built and/or financed by the People's Republic of China (PRC). The PRC's role in these hydroelectric projects is thus the primary focus of this presentation although other non-state actors, e.g. the Asian Development Bank (ADB) and the Electricity Generating Authority of Thailand (EGAT) also play a very significant part in their development. The paper begins by outlining the dilemma confronting the PRC, which faces severe water deficits in some regions and water surpluses in others. The PRC's Great Western Development Program (GWDP) seeks to address this problem, in part, through the construction of a series of large dams in Yunnan Province. However, the dams are unlikely to satisfy state objectives due the faulty assumptions driving the GWDP and the PRC's poor track record where watershed governance is concerned. After summarizing these issues, the body of the paper turns to the downstream impacts the Lancang/Mekong and the Nu/Salween Cascades will have inside Burma. Special attention is focused on the environmental impacts of impoundment, i.e. the large reservoirs created directly upstream from large dams. The cumulative impacts of the reservoirs on communities directly downstream from the dam cascades are not well understood nor have they received sufficient attention in previous discussions.

Additionally, the PRC is indirectly involved in the proposed Tasang Dam, which is located in southern Shan State of Burma. The problems connected to this project extend well beyond the standard social and environmental ones posed by large dams to include gross human rights abuses. The SPDC's abysmal record on human rights and its lack of accountability, both to its own citizens and to the international community, is well documented. Less well known, however, are the negative environmental impacts of the SPDC's national development policies, which have been drafted and implemented without the participation of Burma's ethnically diverse citizens. Moreover, natural resource concessions and large-scale infrastructure projects (e.g. natural gas pipelines and dams) have consistently benefited foreign interests and the Burmese military rather than the country's population as whole. To offer but one example, over 40% of Burma's national budget is dedicated to military expenditures, while only 0.4% is spent on health and education.[1]

Given these concerns, the authors assert that it would be inappropriate for the PRC to continue to move forward with its plans to construct a series of large dams on the Lancang/Mekong and Nu/Salween without consulting communities downstream or help finance the Tasang Dam in Burma. The inclusion of such groups is especially important with regard to Burma as the State Peace and Development Council (SPDC), the military junta controlling the country, lacks political and moral legitimacy among most segments of the population.[2] Additionally, the PRC and international financial institutions (IFIs) should not provide funding for the construction of large dams in Burma or, in the case of the ADB, indirect technical assistance to the military regime until a representative government in place.[3] More broadly, the authors call for a collaborative rather than a competitive approach to the sustainable development of the region's freshwater resources. In particular, the principles of integrated river basin management offer the possibility of creating innovative solutions that benefit all groups, including non-human ones that depend upon these two international rivers for their livelihoods. The paper concludes with two sets of general recommendations aimed at promoting this desired outcome.

China's Water Crisis

In the People's Republic of China (PRC), the transition from centralized control of the economy and state production to market-led forms of development has generated significant benefits for a substantial portion of the country's population. However, more than two decades of accelerated urbanization and industrialization have not been without their costs as the growth of public and private institutions to monitor and to enforce environmental protection are still very weak.[4] In fact, according to some high-ranking government officials, environmental degradation has reached crisis proportions and now threatens future economic performance.[5]

In particular, the PRC's rivers have suffered the effects of uncontrolled development.[6] Chinese experts have stated that 88% of the country's rivers are badly polluted; some of them so severely that they have effectively become "deadzones" which can no longer plant or animal life.[7] Two other factors exacerbate this problem. First, total demand for potable water for human use continues to grow quickly; according to United Nations estimates, the PRC's population will increase from a current 1.2 billion to over 1.6 billion by 2030, and life-style changes will prompt a further surge in usage.[8] Second, population densities are at the heaviest in areas where there is insufficient water. In particular, China's arid north is confronted with severe deficits. By contrast, the south, especially Yunnan Province, suffers from a surplus of water and often experiences devastating floods.[9]

To address these problems, the PRC has consistently advocated a command-and-control approach to development in which local needs are subservient to national targets.[10] A typical example is the "Great Western Development Program" (GWDP), which was officially launched in early 2000 to help raise the material living standards in Qinghai, Tibet, and Yunnan Provinces where half of the PRC's 80 million poor live. A central feature of the GWDP is infrastructure development in the region, especially transportation networks.[11] Such networks, which currently lag far behind those in coastal regions, are intended to promote economic growth in the west. The integration of Yunnan Province into the Greater Mekong Sub-Region (GMS)—an initiative largely funded by the Asian Development Bank (ADB) to promote cross-border trade, investment, and labor mobility—is the key goal since it will expand the PRC's influence into mainland Southeast Asia.[12] Harnessing the six major rivers in the "West" is an essential feature of both the GDWP and the GMS. Dozens of large dams and water diversion projects are planned to prevent future floods and to transfer water from the south to the north. Once operational, these dams would also help to transform the PRC into the world's premier hydro-superpower by increasing hydroelectric production from 17 to 40 percent of the national grid by 2015.[13] Theoretically, these inter-linked efforts will reduce pressure on the central government to provide future subsidies to the impoverished western region, while also drawing upon its natural resources to meet the energy needs of the industrial sector elsewhere in the country. The question of whether the actual benefits of the GWDP will outweigh the social and environmental costs, locally and regionally, remains an open one. But outside the PRC, where state controls on the press and civil society organizations are comparatively less strict, concerns are growing that the GWDP (and to a similar extent the GMS) will undermine the environmental security rather than enhance it.[14]

To achieve the ambitious goals set out in the master plan for the GWDP, dozens of dams will be constructed over the next decade. Yet, many of the assumptions guiding the PRC's State Power Commission of China plans are faulty or, at the very least, require more scientific research. The PRC's assumptions, which are largely shared by the World Bank and the ADB, also conflict with the findings of the World Commission on Dams (WCD). The WCD recently presented clear evidence that large-scale dams are not efficient, economical, sustainable, or pollution-free means to produce renewable energy.[15] In fact, the data gathered by the WCD suggests quite the opposite as the construction of such large dams was only ever possible through massive "state subsidies, state monopolies, and the socialization of private risk."[16] Moreover, the dams pose a considerable threat to the economic livelihoods and cultural survival of the sixty million people living in downstream areas of Burma, Thailand, Laos, Cambodia, and Vietnam. Yet to date, the Government of the PRC has demonstrated little serious interest in working collaboratively with other states or civil society organizations from these countries to arrive at a more equitable solution to flood control and to energy production.

Freshwater Governance in the PRC: A Historical Perspective

Dam projects among the most pressing transboundary environmental challenges to mainland Southeast Asia.[17] Given the PRC's poor track-record with dam construction and maintenance, downstream populations in Burma and elsewhere are justifiably concerned about their future and the possibilities for constructive change. Prior to 1949, there were only twenty-three large and medium scale dams and reservoirs in China. Today, the PRC has in excess of 70,000 dams and 80,000

reservoirs, more than any other country in the world.[18] Of these, 300 are large-scale hydroelectric dams and 340 are large-scale reservoirs. These waterworks have contributed significantly to meeting the country's food and energy needs. Nonetheless, the PRC has a poor record where dams are concerned.[19] According to the ADB, dam construction during the late 1980s alone resulted in the forced resettlement of 10.2 million Chinese, whom the government calls "reservoir re-settlers" (*shuiku yimin*).[20] The 1981 Reservoir Resettlement Law, while it created some legal protections and financial guarantees for people displaced by dams, it did not provide restitution to previous victims nor did enable future ones to litigate planned projects.[21]

Additionally, dam collapses, including catastrophic ones, are commonplace. Most of China's 150,000+ dams and reservoirs were constructed during and after the "Great Leap Forward." Since then 1950s, over 3,200 dams in China, have collapsed—an average of 110 collapses per year.[22] Death tolls resulting from dam failures are severe, with a twin collapse in Henan causing approximately 230,000 fatalities.[23] Moreover, those dams that remain routinely fail to stop deadly floods, most notably in 1997 and 1998 when thousands of people were killed and millions more displaced for more than two months. Strikingly, the "Thirty-two Character" plan devised by the government to prevent the flooding from re-occurring emphasized the need to enforce recently approved logging bans, reforest areas cleared for agriculture, and to relocate communities living in areas historically prone to flooding.[24] In other words, the plan implicitly recognized that unsustainable economic practices and human settlements in high-risk areas were primarily to blame for the scale of the disaster.

Dam construction has also contributed to massive cost-overruns and reports of endemic corruption by government officials. The controversial Three Gorges Dam on the Yangtze River, for example, is officially estimated to cost US$ 24 billion, but unofficial estimates place the figure at least three times that amount.[25] According to the *China Daily* large cracks in the dam have already appeared (1.25 millimeters across and 2.5 meters deep) and are likely due to the deliberate use of substandard materials for personal gain.[26] The charges are not unsubstantiated. In 2000, 97 government officials connected to the project were convicted of embezzlement from the dam fund. Two years later, Gao Yan, the former president and chief executive of China's State Power Corporation fled the country to avoid arrest on corruption charges.[27] Yet, journalists, local activists, and scientists who have been critical of China's dam and water diversion projects continue to be harassed and, in some cases, to be imprisoned for doing so.[28]

Finally, the Mekong River Commission (MRC), created in 1995, is the only existing regional institution with the mandate to enforce international environmental agreements and to provide mechanisms for dispute resolution for member states.[29] However, the MRC currently lacks the capacity to fulfill its mandate. Most glaringly, the PRC, the region's most powerful country, is not a formal member despite the fact that the Lancang/Mekong originates there.[30] (Burma, it should also be noted, is not a member either.) Instead, the PRC has opted to enter into bilateral agreements to gain navigation and other rights to avoid conceding any sovereign rights over how it uses this river.[31] The PRC's decision not to participate in the MRC is paradoxical. While its non-involvement permits the PRC to act unilaterally, at least on sections of the Lancang/Mekong River that fall within its territory, the PRC also has a considerable stake in the economic development of downstream countries. For example, the PRC is a participating member of the ADB's GMS, which prioritizes economic growth across mainland Southeast Asia through infrastructure development.[32] In fact, the PRC is depending upon the construction of hydroelectric dams in Burma and Laos as well as the creation of the GMS power-grid, to help supply its growing demand for energy.[33] But if large-scale dams are constructed on the Lancang/Mekong and Nu/Salween and they damage the livelihoods of downstream populations—as is widely feared—then consumers in mainland Southeast Asia will be unable to afford to purchase Chinese agricultural and manufactured products. The same can be said for the Tasang, Weigyi, and Dagwin Dams, which have been proposed by the Energy Generating Authority of Thailand (EGAT) on sections of the Nu/Salween River inside Burma.[34] In effect, the Great Western Development Program and the ADB's Greater Mekong Subregion Project will be counter-productive; the result will be increased poverty and environmental degradation rather than progress.

Impoundment

The Irrawaddy, the Lancang/Mekong and the Nu/Salween Rivers all originate in western China before passing through Burma. Since this paper concentrates on those hydroelectric projects in which the Government of the PRC and its agents are directly involved, the sections below will focus only on the last two rivers. Both the Lancang/Mekong and the Nu/Salween Rivers, along with the Jinsha River, transect a region that was named a World Heritage Site by UNESCO in 2003. The region received the designation for its immense beauty, cultural importance, and ecological significance. In fact, the region is the "epicenter of Chinese biodiversity."[35] Over 50% of China's surviving animal species live in the area, which also supports six thousand known plant species. Despite the immense biological significance of this region and the high likelihood of disparate environmental impacts on downstream communities, the PRC has begun building a series of large dams.

Most international attention has been devoted to the long-term impacts impoundment will have in the lower Mekong, specifically Cambodia and Vietnam. Growing scientific evidence suggests that the annual cycle of flooding, which prompts the Tonle Sap in Cambodia to naturally reverse its flow, is actually vital to maintaining the chemical and biological health of ecosystems downstream.[36] Statistics from the ADB also reveal that nearly one-third of the river's total sediment load originates in the Chinese sections of the Lancang/Mekong.[37] The eight dams on the Lancang/Mekong will not only prevent the seasonal surges and periodic flooding that are crucial to the river's overall health, but trap the majority of these sediments from ever moving downstream. Over time, reduced sediment loads will result in reduced soil fertility in riparian areas of Cambodia and southern Vietnam, which will have serious impacts on the food security of these populations. Unfortunately, considerably less attention has been devoted to the cumulative impacts impoundment will have on Burmese, Lao, and Thai communities living in close proximity to the Lancang/Mekong and Nu/Salween Cascades in the "Golden Triangle" region.

Hydroelectric dams create power by harnessing the mechanical energy of falling water. The amount of power this generates depends upon the volume of water and the difference in height between the reservoir and the point of the outflow. This difference is called the "head." Since the amount of energy in water is directly proportional to the head, there is a significant incentive to build dams as high as possible in order to optimize the amount of electrical energy they can produce. Large dams also impound significant amounts of water by storing it directly above the structure in a reservoir. As a result, impoundment has a number of major environmental impacts.

Rivers re-emerging immediately downstream of a dam differ significantly from free-flowing ones. Water temperatures can be significantly higher or lower, which can adversely affect the health of flora and fauna in a number of ways. Impoundment, for example, can lead to localized extinctions if the species cannot tolerate the new conditions or migratory ones cannot travel freely to reproduce. Inevitably, the flooding also destroys unique ecosystems, e.g. valley-bottoms, which may pose threats to the viability of some species. Frequently, flow patterns are fundamentally altered as well. Over time, the new patterns transform the river's channel, fragment available habitat for fisheries, and alter other physical as well as biological properties of the river. Finally, water quality almost always declines as nutrients, sediments, and pollution related to agro-industrial production rapidly accumulates in water impounded above the dam. Over time, these materials become quite concentrated and contribute to the creation of "greenhouse" gas emissions, which are linked to global climate change. Additionally, periodic water discharges, which are used to help seasonally regulate the river's flow downstream, rapidly transfer large volumes of this unnatural water to areas immediately below the dam before becoming gradually diluted. This transfer places severe stress on the local ecosystem by temporarily altering the temperature, flow patterns, and water composition, while increasing erosion rates. In short, large dams create areas of reduced biodiversity. Unfortunately, the cumulative impacts of multiple dams (i.e. a "cascade") are not well understood since dams are usually studied in isolation. However, evidence from just one site in the affected area, the massive Manwan Reservoir, indicates that the impacts are likely to be severe.[38] Despite this finding, a total of twenty-one dams—eight on the Lancang/Mekong and thirteen on the Nu/Salween—are either currently under construction or planned.

Featured Dam Projects

The Lancang/Mekong Cascade includes eight dams, two of them large-storage, over 750 kilometers of the upper and middle sections of the river. When completed, the dams are collectively expected to produce in excess of 15,000 MW (annual energy output ca 70,000 GWh).[39] The Xiaowan Dam, when complete in 2012, will also have a major impact on the Lancang/Mekong. Located a brief distance north of Manwan, the Xiaowan Dam will have a main wall of 292 meters, making it the highest dam in the world, significantly taller than the massive Hoover Dam which is 221 meters high. Given the topographical features of the site, the dam will create a 15 billion cubic meter reservoir covering 169 square kilometers.[40] In terms of storage capacity, it will be second only to the highly controversial Three Gorges Dam. Most of the remaining dams—namely Nuozhadu, Jingjhong, Ganlanba, and Mensong—will be concentrated near the borders with Burma and Laos if completed. In addition to the river's high hydroelectric potential, proponents of the dam cite Yunnan's mountainous topography, low population densities, and the cascade's ability to regulate the "dry-season" effect when navigation on the Lancang and upper Mekong becomes impossible. In short, the project appears to be a policy-maker's dream; "clean" power without any major social or environmental impacts. However, many of the projects economic benefits may have been overstated as no independent impact assessments have been conducted. In the PRC, assessments conducted by research scientists employed by the state are often subservient to national development objectives.[41] Moreover, insufficient information exists to support the conclusion that regulating the river's seasonal fluctuations will not have serious negative impacts due to a lack of baseline data. In fact, the PRC did not carry out any assessments until after the construction of the Manwan Dam started operating in 1996, which only exacerbates this problem further.[42]

Similar concerns surround the planned Nu/Salween Cascade. The Nu/Salween River is the last free-flowing international rivers in Asia, and is shared by China, Thailand, and Burma. The river begins on the Tibetan Plateau and travels 2,800 kilometers through Yunnan Province, the Shan and Kayah States of Burma, where it forms part of the Thai-Burma border, and then eventually into the Indian Ocean in the Mon State of Burma. Nine of the proposed thirteen dams along the Nu/Salween in the PRC are located in National Nature Reserves, most of which are close to the edge of the World Heritage Site itself.[43] If constructed, the dam cascade would cumulatively generate 21.32 million kilowatts. Shockingly, one month after the region received this prestigious designation, the Huadian Group, one of China's five largest power producers, began seeking construction contracts from the government. Not only does the development plan violate the terms of the UNESCO designation, the decision to move forward with the Nu/Salween Cascade was done without consultation with the Governments of Burma or Thailand, much less the communities that would be directly affected by the dams. An estimated 70,000-80,000 people in China alone will be forced to relocate if the cascade goes forward.[44]

In response, representatives from over eighty different people's groups in Thailand and Burma issued statements in December of 2003 calling on the PRC to suspend construction plans until consultations with downstream communities could take place. Shortly afterwards, seventy-six civil society organizations from thirty-three different countries submitted a petition to His Excellency, Hu Jintao, the President of the PRC. Fact-finding research conducted by local organizations also documented the negative impacts the Nu/Salween Cascade would have on Thai and Burmese communities.[45] By March 2004, the international outcry over the project prompted China's Premier, Wen Jiabao, to announce that the Nu/Salween Cascade should be "seriously reviewed and decided scientifically."[46] Local officials in Yunnan Province, however, continue to insist that they have not been ordered to suspend construction and no mainland newspapers have covered the story.[47] The future of the controversial project remains uncertain.

For the past several years, the SPDC and EGAT have been discussing the construction of a series of as many as thirteen large dams on sections of the Nu/Salween River shared by both countries. In August 2004, both parties announced that they had agreed to form a joint venture for the construction of five dams, including one commonly known as Tasang.[48] The proposed dam site is located near the Tasang crossing between Murng Pan and Murng Ton in southern Shan State, approximately 80 kilometers from the Thai border. The Tasang Dam, if built, will have a projected installed capacity of 3,500 MW, an amount three times Burma's current levels of electricity consumption.[49] The concrete-faced rockfill dam would be 188-193 meters high, making it the highest dam in mainland Southeast Asia, while its reservoir would flood an area of at least 640 square

kilometers, storing approximately one-third of the Salween River's average annual flow. Current estimates place the total costs of such a project at over US$ 3-3.5 billion to complete.[50]

Technically, the proposed Tasang Dam is not a Chinese project. To date, all of the feasibility studies and other forms of technical assistance for dams and other water diversion project on the Salween have been conducted by different Japanese government agencies and companies.[51] However, the wholly state-owned China Export-Import Bank (CEIB), which provided a US$ 120 million low-interest loan for Paunglaung Dam in Burma, is allegedly considering arranging financing for the project.[52] Created in 1994, CEIB arranges export credits and loans for overseas contracts and investments. CEIB has a questionable track record. No public documents exist to indicate whether CEIB has any environmental guidelines. CEIB has not endorsed the "Common Approaches on Environment and Officially Supported Credits" devised by the OECD in 2001 and used by most major export credit agencies around the world. Perhaps most seriously, the bank was directly involved in efforts to raise capital through bond issues to help finance numerous and widely criticized dam projects in China and elsewhere which multilateral lending agencies have publicly refused to support. The projects include the Three Gorges Dam, the Nam Mang 3 Project (Laos), the Merowe Dam (Sudan), the Yeywa Dam (Burma), and now the Tasang Dam among others.[53]

The Tasang Dam is a source of considerable concern to many Burmese and Thai. Despite the impacts such a large dam would have on the environment, no environmental impact assessment (EIA) has been conducted to date. An inter-basin water diversion project, initially devised by Japanese hydro-engineers, is also associated with the dam. Plans call for the diversion of approximately 10% of the Salween and Moei Rivers over a distance of 300 km to supply the Bhumibol Reservoir in Thailand, which currently contains 7 percent of its planned volume due to mismanagement, with additional water.[54] Dozens of different ethnic groups in Burma and Thailand also depend upon the Salween River to maintain their way of life. As one Shan refugee put it, "If the dam is constructed blocking the river, not only will the Salween River stop flowing but so will Shan history; Our culture will disappear as our houses, temples, and farms are flooded."[55] The proposed Weigyi (168 meters/4,4540 Mw) and Dagwin (49 meters/792 Mw) Dams will have similar impacts on Karenni and Karen populations further downstream from the Tasang Dam. The reservoir created by the Weigyi Dam is expected to flood 380 km of land (approximately 20,000 acres) known for its agricultural productivity, hardwood forests, and biodiversity.[56] Again, the main partners for all three dams—the SPDC and EGAT—have shown no real interest in conducting a social impact assessment much less engaging all the relevant stakeholders in a discussion of the project. Indeed, political conditions inside Burma do not permit genuine consultation.

Situation in Burma

Decades of war and mismanagement have transformed Burma into one of the worst governed countries in the world.[57] Much of the fault lies with the successive military juntas that have controlled the country since 1962. Shan State, where the Tasang Dam is to be built, has faired badly during this period. Violence, related to counter-insurgency campaigns and narcotics production, has wracked the region. Over 365,000 people have been forcibly relocated either to or in Shan State since 1996, most of whom lived in 176 sites controlled by the Burmese military and its proxies. Due to the ongoing state-sponsored violence, Shan State also has the largest number of internally displaced people in Burma, approximately 275,000 people.[58] 200,000 more reside in makeshift shelters along the Thai-Burma border while possibly a million more have illegally migrated to Thailand to escape the violence.[59] Women, in this context, have been particularly vulnerable. Numerous studies have documented the Burmese military's deliberate use of rape and sexual assault against Shan women as well as women from other ethnic groups.[60] These patterns of violence are of particular concern given the Burmese military's routine use of forced labor—in violation of international human rights law—on infrastructure projects, e.g. dams, railways, and roads. The International Labor Organization (ILO) has taken unprecedented action against the SPDC in the effort to curtail the continued use of forced labor by the Burmese military, but to little effect.[61]

Given the size and the location of the Tasang Dam, thousands of people will need to be relocated if it is constructed. People currently living in forced relocation sites under military control are also at great risk. Many of them are likely to be forced to help construct a dam that will provide

them with little or no material benefits. Such a conclusion is based upon past experience. In the early 1990s, the Burmese military government partnered with Unocal, Total and MOGE to construct the Yadana-Yetagun pipeline in southern Burma. This gas project led to increased militarization and systematic human rights abuses. Forced labor was widely used along the pipeline route to build access roads, helipads and military barracks. Land was confiscated from local farmers, communities were forcibly relocated, and the Burmese soldiers committed rape, torture and extra-judicial killings in the pipeline area. The military continues to act as a security force for the pipeline corridor.[62] Similar though less well-known human rights problems also exist in connection with the Baluchaung Dam located in Karenni State and the proposed Weigyi and Dagwin Dam sites in Karenni and Karen States, respectively.[63] Moreover, the energy and the profits derived from the Yadana/Yetagun and Baluchaung projects have not benefited local populations.[64] With this past history in mind, there is no reason to assume that the three proposed dams on the Nu/Salween inside Burma will be any different.[65]

In sum, all of the dam projects involving the PRC—the Lancang/Mekong and Nu/Salween Cascades as well as the Tasang Dam—fail to meet the standards established by the World Commission in Dams, particularly those related to open and transparent decision-making.[66] The projects also fail to meet the basic principle of distributive justice, which is embedded in the notion of sustainable development and other rights-based approaches. Sustainability, according to the 1980 World Commission on Environment and Development (i.e. the Brundtland Commission), cannot be achieved if policies do not consider the ramifications of resource accessibility and the equitable distribution of benefits and burdens across all affected stakeholders, including non-human ones.[67] In short, further construction should be halted until other, less destructive options, can be meaningfully explored, discussed, and agreed upon by the stakeholders.

Moving Forward

The obstacles to sustainable watershed governance and distributive justice, discussed above, should be viewed as an opportunity to develop *socially* as well as technologically innovative solutions, e.g. those in keeping with the best practices of Integrated River Basin Management (IRBM). The principles of Integrated River Basin Management are consistent with those adopted at the 1992 United Nations Conference on Environment and Development (UNCED) and again at the 2002 World Summit on Sustainable Development.[68] The principles of IRBM emphasize that sustainable development for river basins must consider their socio-economic, geo-physical, and ecological features in a holistic fashion and at multiple spatial and temporal scales.[69] Such features include but are not limited to current and projected supply and demand, upstream-downstream linkages, and other transboundary concerns. These principles differ sharply from previously dominant approaches that stressed an interventionist and technocratic model that sought to engineer landscapes to meet human needs—a model that remains firmly entrenched in the PRC for cultural as well as ideological reasons.[70] However, recent statements by high-ranking PRC officials indicate that there is growing awareness that this model for national development is not sustainable; in fact, it threatens the country's future security.[71] With this awareness in mind, the United Nations and other interested actors should encourage the PRC to work collaboratively with other stakeholders to arrive at an equitable solution. Towards this end, the paper concludes with two sets of recommendations.

The first set was originally prepared by a coalition of fourteen Thai and Burmese civil society organizations focused on protecting the Salween River.[72] Although the report was focused on preserving the Salween River, its recommendations apply to the Lancang/Mekong and Nu/Salween Cascades in the PRC as well. Given the past record of the PRC, Burma, and Thailand of environmental degradation, pollution, forced resettlement, and unresolved compensation issues caused by the construction of large dams, the following alternatives should be actively pursued:

- Utilization of existing power plants and demand-side management to reduce power consumption and to use power more effectively.
- Decentralized power management and development of "clean" energy through small-scale projects (e.g. biomass, wind, solar, geothermal, improved rainwater harvesting techniques, and mini-hydro power).

- Decentralized water management, including small-scale reservoirs and water storage;
- Improvement of existing irrigation systems to prevent wastage through leaks, evaporation, unscheduled releases, etc.

To date, none of these options have been fully considered by the governments of the above countries. For this reason, the United Nations and international financial institutions (IFIs) with a history of financing large dams (e.g. the World Bank, the Asian Development Bank, and the Japan Bank for International Cooperation) should entirely refrain from providing further financial and technical support.

Instead, the United Nations, IFIs and other relevant non-state actors should offer clear incentives for all the relevant stakeholders to create a sustainable management plan for both international rivers based on the principles of IRBM. Such a plan, among other things, would require the following:

- An independent options assessment for the Lancang/Mekong and Nu/Salween Rivers.
- The PRC to consult with downstream communities, who have heretofore been ignored, before proceeding with further construction on the Lancang/Mekong and Nu/Salween Cascades. Their involvement and their input are crucial for designing an equitable solution to shared dilemmas.
- Substantive efforts by all affected countries to mainstream environmental issues into policymaking, including stricter requirements for independent EIAs. Currently, the approach is piecemeal even in such institutions as the Mekong River Commission. Other regional bodies, such as the ADB's Greater Mekong Subregion Program are deficient in this regard due to its historical bias for prioritizing economic growth over sustainable forms of natural resource management and conservation.[73]
- Mechanisms for transboundary watershed governance similar to the Mekong River Commission on the region's other international rivers, but ensure that such institutions have the capacity to take meaningful action and to resolve disputes. This includes economic and other instruments to promote sustainable use, legal and regulatory frameworks for allocating river rights, and so on. Private industry and civil society organizations must be involved in this process.
- A viable model and mechanisms for cross-border accountability, e.g. the Aarhus Convention recently adopted by many European countries.[74] Among other things, such a model would require greater transparency among the governments of the PRC, Burma, Thailand, Laos, Cambodia, and Vietnam as well as other relevant non-state actors, e.g. corporations and IFIs.
- Broader stakeholder representation in policy forums, so policies are developed with them rather than for them. As a first step, this require improving timely public access to information and allowing public participation in environmental decision-making.
- Genuine respect for and compliance with international standards for human rights including basic civil and political liberties as set out in the Universal Declaration of Human Rights and other relevant conventions and related agreements.

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