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Hearing on Challenges to Water and Security in Southeast Asia

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Mr. Chairman,

Thank you for the opportunity to offer my perspectives on the urgent issues regarding Water and Security in Southeast Asia. I have organized my statement so as to respond specifically to the five broad questions you posed as well as offering some additional observations that I think are relevant to your objectives in organizing this hearing.

Comparatively speaking, 30 percent of the world's fresh water is in Asia but it is very unevenly distributed. The South of China is well-watered but the north and west are extremely dry, as is Central Asia. Southeast Asia generally has ample water resources but with two important caveats: First, most of the region's rainfall occurs during the monsoon or wet season, which can be unreliable. Second, in the Mekong Basin a large portion of water available during the dry season comes from the spring and summer melting of the winter snow cap in Tibet. Nonetheless, the adaptation of flora and fauna to the extremes of wet and dry are the main reasons for the river's rich bounty and they are gravely threatened by hydropower dams, especially on the main stream and major tributaries. The conditions have made the Greater Mekong Region Subregion (GMS) a major wet rice growing region, with Thailand and Vietnam the world's first and second rice exporters.

Government policies and standards in Southeast Asia that address population growth, pollution, and industrial activity, and the impact on the region's water use and management.

To answer the first question you posed, most but not all Southeast Asian governments have generally done a better job of reducing population growth rates than protecting their forests from rampant destruction and rivers, estuaries and other water resources from pollution and the unsustainable use of ground water. Most large coastal cities in Southeast Asia are sinking from the depletion of their aquifers, even as the threat of rising sea levels and exceptionally severe storms caused by climate change are beginning to be felt. Jakarta, Bangkok, Manila, Hanoi and Ho Chi Minh City are frequently flooded even by storms of common and predictable strength.

Unsustainable population growth remains an underlying cause of environmental degradation as well as political instability in some parts of the Mekong Basin, especially in upland areas which already are suffering from excessive exploitation. The

comparatively youthfulness of most of the Mekong country populations ensures considerable growth momentum for some time after fertility rates decline to replacement level.

In Mekong Southeast Asia the population of Laos was growing at an estimated 2.73 percent per year as of 2007, with a very young age structure -- 41.2 percent of the population aged 14 years and under. Cambodia is growing more slowly at 1.73 percent per year, but Cambodians 14 and under still account for 34 percent of the population. The relevant figures for Vietnam are 1.04 percent growth and 26.3 percent of the population at 14 or under. The Thai population is growing at well under one percent per year and only 21 percent of the population is 14 years or younger. Myanmar's growth rate has fallen from 2.5 percent in the mid-1970s to below 1.0 percent in 2008, no doubt due in part to the dim economic prospects for a population with a comparatively high level of literacy but forced to live under the misrule of the military junta.

Because of the still largely young populations of the Lower Mekong countries -- besides Thailand -- demographers estimate that the population of the Mekong Basin will increase from 73 million at present to about 120 million by 2025, an increase of 65 percent. Moreover, some areas are growing far more rapidly and unsustainably. For instance, the population around Cambodia's Tonle Sap Great Lake is growing three times faster than the rest of the Cambodian population. Incomes of people living around and even on the Tonle Sap not surprisingly are one-third of those of Phnom Penh and poverty is four times as high. Certainly rapid population growth is a major factor in poverty but so are development policies that unsustainable exploit the resources of the poorest citizens for the benefit of more politically important urbanites.

As often pointed by Southeast Asians, the United States, Europe and other parts of the more developed world equally abused their resources until they were almost gone. The problem is that this historically factual argument glosses over some important differences between the industrial states of the northern hemisphere with developing Asia and Africa that are critically important. Europe long ago dammed all of its major rivers but the process took place over a couple of hundred years and occurred simultaneously with industrialization. The United States took a century to exploit the resources of a rich but comparatively lightly populated continent. The Native Americans paid a terrible price, of course, but until the closing of the frontier in the late 19th Century Americans could always move on to somewhere else after local resources were exhausted. Today New England is more forested than in the early 19th century, but mainly because the whole basis of the economy has changed.

In contrast, the Greater Mekong River Basin (GMS), which some call "Asia's Last Frontier," offers no new rich western lands and some important natural resources such as timber that once seemed inexhaustible have been rapidly depleted, mainly by illegal cutting. Nor do many of the poorest Southeast Asian countries have the realistic potential for the kind of rapid industrialization that took place in Europe, North America and Northeast Asia to absorb people who lose their lands, fisheries and livelihoods.

In other words, the relentless expropriation of shared community water resources is not likely to have the same kind of positive outcome for the 60 million or so Lao, Cambodians and Vietnamese (in the Mekong Delta) who will loose their livelihoods and food sources. These days, forests are destroyed as much to make way for rubber and palm oil plantations as for the timber. For maximum efficiency, these operations seek to minimize employment, and in the case of Chinese investments, labor is imported directly from China and the workers live in self-contained camps.

Hydropower development is even more detached from future employment opportunities and higher living standards. For a variety of reasons, starting with geography and inappropriate economic policies, industrialization and services industries are not likely to spring up to create new livelihoods for most of those displaced by the dams. The record thus far of relocating, compensating and providing new lands and occupations of those displaced by hydropower dam projects gives no cause for optimism. Especially because of the particularly devastating impact of mainstream dams on fisheries and existing agriculture, the most likely consequence will be the spontaneous migration to cities, in some cases across borders, with the attendant social ills of increased squalor, crime and trafficking in drugs and human beings.

The political, environmental, sovereignty and regional security impact of China's water use and hydropower development along the upper Mekong River, and China's in regional water resources management.

The most important aspect of the Mekong in terms of water and security -- both national and human -- is that the river is a transboundary resource shared by six countries: China which controls the source and upper half of the river, and five downstream Southeast Asian countries – Burma/Myanmar, Laos, Thailand Cambodia and Vietnam.

China's ongoing construction of a massive cascade of eight or more dams on the Upper Mekong in Yunnan and plans by Laos and Cambodia for eleven dams on the lower half of the River's mainstream epitomize the skewed nature of what passes for "development" in Chinese minds as well as in some quarters of the Asian Development Bank (ADB), the World Bank and the African Development Bank. Of course large to mega-sized dams generate much needed electricity for cities and industries and which tends to boost overall GDP growth, but at a huge cost to those who lose their forests, fisheries and farms.

Dams on the main stem of any river are highly destructive of its core hydrology and the existing "environmental services" such as aquatic life and clean water for agriculture and drinking. The case of the Mekong River Basin is at the extreme end of the development-environment dilemma. The Mekong is one of the most productive river basins in the world in terms of fish and agriculture, second only to the Amazon, which is twelve times its size.

Both upstream and downstream dam proposals have different impacts on the River's hydrology, ecology, morphology and human security. I will begin by discussing China's

hydropower development program in Yunnan Province, in the far southwest of the country.

China's Yunnan Cascade

The character and impact of the eight or more large to mega dams that China is building on the upper half of the river, which China calls the *Lancang Jiang* ("Turbulent River") and the dams proposed for the lower half of the river in Southeast Asia are different in important respects.

The main environmental impact of China's dams will be to capture much of the silt that flows down from the Tibetan Plateau with the spring snowmelt and late summer monsoon rains, thereby depriving downstream farmers of the annual nutrient renewal of their fields and denying the Mekong Delta that replenishment of silt necessary to keep the South China Sea at bay. China's Yunnan Cascade will also shift the timing of the seasonal monsoon "flood pulse" that triggers the spawning migration of many fish species.

Worst of all, the reservoirs of China's two biggest dams in the Yunnan cascade, the Xiaowan Dam that began filling last fall or winter and the Naozhadu Dam, now under construction, can hold 15 and 22 billion cubic meters of water respectively. This is more than one season's annual flow of the upper half of the river and it will give China the ability to regulate the river from Yunnan to the South China Sea. China plans to use this storage to put as much as 40 percent or more water into the river during the dry season in order to keep the smaller (but still quite large) dams running year-round and support navigation for large cargo boats between southern Yunnan and Luang Prabang, Laos, and for yet unrevealed plans for irrigation and possibly other water diversion schemes.

These plans to regulate the river to support navigation and changing power demands are extremely destructive environmentally and ecologically. Ever since construction was begun on the first dam at Manwan, which came on line in 2003, very erratic river flows have scoured river banks and destroyed dry season vegetable gardens, and even drowned villagers on river banks in northern Laos who were caught unawares by fast rising water from dam operations. Manwan, it should be pointed out, has only $1/15^{th}$ the storage capacity of the Xiaowan Dam upstream. To be clear no more water can come down the river than can pass through the Manwan Dam's flood gates at a given time, but the whole point of building Xiaowan as a giant cistern is to keep Manwan and two other smaller dams operating year round.

Even more troubling, are the potential political and geopolitical ramifications of China's Yunnan cascade. Many citizens and even officials in the downstream countries blamed China for the last dry season extreme drought, the worst in fifty years. The drought was only broken when the monsoon rains returned this summer. China protested that it was also suffering from the same drought, but because it provided no data about the operation of its dam it was never certain whether the Chinese dams were spilling, filling, or passing along as much water as entered the reservoirs upstream.

Troubling Dependency

Even in "normal" years the dry-season flow of the Lower Mekong is too meager to generate hydropower. In many places you could walk most of the way from Vientiane, Laos to the Thai side of the river. If Laos and Cambodia in particular go ahead with their plans for damming the middle and lower reaches of the river they will make themselves dependent on China to release water from the Xiaowan Dam in the right quantity and at the right time to keep the turbines running for several months of the year.

Some officials from those countries have expressed confidence that China would never withhold water for any prolonged period for the practical reason that it needs to keep enough water flowing to keep its own southernmost dams generating power during the dry season. There are at least a couple of flaws with this theory. First, at times of prolonged drought China may not have enough water in the reservoir to keep its own dams operating. This appears to have been what happened in the recent dry season, though in this case China had only begun to fill the Xiaowan Dam during the preceding rainy season.

In addition, in view of predictions that climate change will continue to cause the retreat of glaciers and the shrinking of the winter snow cap in Tibet, China may give higher priority in the future to storing water than producing power. Moreover, China is already considering the diversion of some Mekong water to the Yangtze River to make up for water it plans to redistribute from that river to the Yellow River in the bone dry North. The risk that China will engage in "water nationalism" is a real one, and a strong reason for not building Lower Mekong dams.

The challenges of proposed dam construction along the Lower Mekong River, and the impact on the region's environment, food security, sovereignty, and economic development

The Lower Mekong is very different than most other important rivers of the world in that some 60 million people depend directly on or indirectly on its almost unparalleled bounty of fish and annual load of silt that replenishes otherwise nutrient-deficient soil. This food resource is not only of vital importance to local livelihoods, but the rice produced with the Mekong's waters in Thailand, Cambodia and Vietnam's Mekong Delta is important to the global rice market. The people who depend on the river badly need to improve their standards of living and nutrition, but destroying the natural functions of the River is not the way to do this. Rather, the river and its bounty of fish and agricultural production have to remain the base of the Mekong counties' economic pyramid. Already hundreds of dams are operating, under construction or planned for tributaries in the mountains of Laos, Vietnam's Central Highlands, and the higher elevations of Thailand and Cambodia.

The true cost-benefit ratio of many of these projects have been questionable, but they are of a different order altogether than dams on the mainstream that, if carried out as planned, would turn ninety percent of the lower half of the river into a series of nine or more slow

moving lakes, connected by stretches of fast moving but highly variable channels and cascades that cannot support life.

The effectiveness of existing regional mechanisms for managing water resources in Southeast Asia and options for improving regional water resources management.

The current incarnation of the Mekong River Commission (MRC) was created in 1995 when four of the lower Mekong countries signed *The Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin*. This agreement established norms for water use, flow maintenance, environmental protection, and areas of cooperation, to name a few. It eventually led to the establishment of four institutional goals for the MRC: To promote and support coordinated, sustainable, and pro-poor development; to enhance effective regional cooperation; to strengthen basin-wide environmental monitoring and impact assessment; to strengthen the Integrated Water Resources Management capacity and knowledge base of the MRC bodies, National Mekong Committees, Line Agencies, and other stakeholders.

The Mekong River Commission provides a valuable scientific research resource and an institutional structure for cooperative water management for the four Lower Mekong countries. Unfortunately, the MRC mechanism has made little real progress towards the goal of fostering cooperation. There still are no enforceable rules and MRC countries seem unlikely to adopt them under current circumstances. Moreover, the MRC is ultimately an advisory body, with no independent legal authority to coordinate, plan, or oversee projects – under the current situation, these remain sovereign prerogatives.

Because of a long term lack of trust among the Lower Mekong countries, concerns about sovereignty and the high priority given to the exploitation of "national" resources for development, one country's interests often are almost inevitably in conflict with those of its neighbors or the region as a whole. Moreover, the goal of truly cooperative, equitable, and sustainable use of the Mekong is largely moot as long as China, along with Burma/Myanmar, has declined to join the MRC. Beijing refuses to share either significant information about its dams or the data that it used in or derived from its own environmental and hydrological studies. Even more troubling, China thus has refused to countenance making cooperative water management of the ADB-led Greater Mekong Subregion (GMS) cooperative development program. Instead the GMS has focused on crisscrossing the Mekong Basin with roads, bridges, and even a regional electric power grid, without including the river that gives the region its name.

The United States' policy toward water resources management in Southeast Asia, particularly along the Mekong river, existing U.S. Government efforts to promote improved water resources management; and options for the United States to play a more constructive role in addressing these challenges.

Mr. Chairman, the Obama Administration has made the Mekong Basin the focal point of its professed reengagement with Southeast Asia and ASEAN, and not a moment too soon. Of course the United States never really left the region, especially in regard to our

military capabilities and engagement in East Asia and the Pacific, but it has been widely accepted that especially after 9/11 the United States was distracted, and tended to make anti-terrorism cooperation the focal point of its regional engagement. An effort to rebalance U.S. engagement was begun late in the second George W. Bush administration, but the Obama Administration has greatly expanded the policy qualitatively, and has begun to mobilize additional budget resources to expand our involvement more substantively. We have a long way to go and need to mobilize the resources, expertise and capabilities of a wide variety of departments and agencies as well as leverage our important positions on the boards of the ADB and World Bank.

Lower Mekong Initiative (LMI)

With the approval of the four MRC countries Secretary of State signaled U.S. reengagement with the region by signing a Letter of Intent (LOI) for cooperation with the CEO of the Mekong River Commission, Jeremy Bird, at the annual ASEAN foreign ministers meeting which was hosted by Thailand at Phuket in July 2009. Initially the concept involved a sister river partnership between the MRC and the U.S. Mississippi River Commission. What the State Department now calls the Lower Mekong Initiative (LMI) has great potential but some important ongoing limitations.

All of the Lower Mekong countries understand the geopolitical nature of the U.S. initiative, most especially China, and to varying degrees and the exception of China, they all welcome it in varying degrees. Because of the wider context of enhanced U.S. engagement with ASEAN, the LMI has also been welcomed by most Southeast Asian countries, all of whom worry about China's hegemonic potential both in mainland Southeast Asia and the South China Sea.

For the same reasons the Administration's decision to approve the ASEAN Treaty of Amity and Cooperation (TAC) and apply for membership in the East Asian Summit (EAS) have also been widely applauded, as has Secretary of State Clinton's declaration at this years ASEAN foreign ministers' meeting in Hanoi that we have important interests in the South China Sea and that our position on the maritime territorial disputes is that boundaries of 200 mile Exclusive Economic Zones (EEZ's) should be anchored on the shore. Effectively, the Obama Administration has aligned itself with the principles of the UN Convention on the Law of the Sea, and against China's claim to most of the South China Sea on the basis of a historical presence.

One important limitation of the LMI at present is that the initiative originated in the Bureau of East Asian and Pacific Affairs. This was a foreign policy initiative not backed by much in the way of programs or funding. Though it was intended to cover the areas of health, education, climate change and infrastructure, the main agency involved besides the State Department was the U.S. Geological Survey, which had already initiated the Mississippi-Mekong Partnership with Vietnam's Can Tho University.

The substance of the LMI shows the strengths and weaknesses of the American governmental structure. On the one hand, many departments and agencies have already

been involved in activities that support the LMI objectives, especially much needed human capacity building and education. On the other hand, these activities still are not coordinated in any meaningful way. Moreover, in the absence of strong coordination, too much depends on the individual enthusiasm and leadership of government officials to generate ad hoc cooperation. Officials come and go, and senior bureaucrats have strong influence over department and agency priorities and often legislative mandates for much of their budgets.

Mainly by rebranding existing USG efforts the State Department identified by the latest count about $200 million for FY 2010, mainly in the form of environment-climate change, health, and education and training. Some other activities already underway show the wide array of support the Administration and Congress could generate through a concerted approach. For instance, the Corps of Engineers, presumably under its own international agenda, has brought senior officials from the Lower Mekong countries and possibly China to visit Columbia River dams, where they had the opportunity to learn first hand about the high cost and limited success of fish ladders and other means to move Salmon around dams that block their spawning runs. Corps representatives have even participated in MRC "stakeholder consultation" meetings to explain that fish ladders and "fish ways" are not practical on the Mekong River.

U.S.A.I.D. has ongoing programs on climate change adaptation. The Education Department and the Center for Disease Control have long had programs in the LMI countries.

Recently a colleague and I have even participated in programs on mainstream hydropower issues for Mekong country officials and NGOs under the State Department's International Visitor Program.

Infrastructure remains a blank space in the four LMI pillars, probably because there were no existing programs that could be rebranded. This is an area where the United States could be providing technology and capacity building, especially in the modeling, river monitoring and full scope cost-benefit analysis of proposed dam and other infrastructure programs. Nonetheless, Secretary of State Clinton has repeatedly emphasized her concern about Mekong fisheries, food and human security and the future of the Mekong Delta.

On the technology side, the Commercial Service of the U.S. Commerce Department and the EX-IM Bank can help promote relevant U.S. technology, including sensing technology for river flows, changes in silt loads, and pollutants, as well as alternative energy like efficient gas-fired thermal power plants.

Both Thailand and Vietnam are already exploring the possibility of acquiring U.S.-designed third generation nuclear power plants, namely Westinghouse's Passive Core Cooling Systems (PCCS) which are not dependent on large amounts of river water. The technology is licensed to a South Korean company but Westinghouse still supplies important reactor and control components. Obviously there are a host of issues about

nuclear power, starting with proliferation risks and safe spent fuel disposal, but increasingly even environmentalists are coming around to the view that modern nuclear power could be preferable to coal and other thermal power. Solar and wind power also have considerable potential in Southeast Asia but China is likely to emerge more competitive than the United States in these areas of applied technology.

Urgent Need for Planning and Coordination

The most urgent need is planning and coordination, especially for getting adequate funding in place for FY 2012. I'm not sure where these functions should be located, whether in the State Department or elsewhere. At present the EAP Bureau has neither the staff nor the funding to accomplish this task. USAID would be a possibility, but only with a designated program and adequate staff and funding. Putting the coordination responsibility might – and I emphasize might – also make sense because USAID operates under the general policy direction of the State Department.

Many departments and agencies could give more substance to the LMI, and in fact many of them are already involved in some way with the Mekong River Commission and individual governments. An inclusive list could include, in alphabetical order: The U.S. Agency for International Development (USAID), Army Corps of Engineers, Centers for Disease Control and Prevention (CDC), the USDA and its National Institute of Food and Agriculture and Foreign Agricultural Service (FAS), Departments of Commerce, Education, and Energy, Export-Import Bank (EX-IM), U.S. Geological Survey, Health and Human Services (HHS), and the National Oceanic and Atmospheric Administration (NOAA).

The United States should also be leveraging its influence and voting power on the boards of directors of the ADB and World Bank to jointly support specific LMI programs or program objectives. Both banks have been putting the mantle of poverty reduction over projects that may ultimately impoverish more people than they help. In my view and that of many other observers, it's past time for the United States to push harder for projects that aim to raise the incomes and improve the lives and health of the poorest and the most natural resource-dependent populations *where they live*.

At the same time, the United States Executive Directors to the Banks should be instructed to oppose egregious hydropower projects, especially mainstream dams which do not meet World Bank and World Commission on Dams criteria. Neither the ADB nor the World Bank can get directly involved in constructing mainstream dams on the Mekong because their extremely environmental and socioeconomic impacts are too severe to pass muster with the Banks' own criteria.

"Keep China Honest"

Finally, Mr. Chairman, the United States should not, cannot and does not seek to compete with China for infrastructure assistance or obstruct the growing economic integration of the ASEAN countries into China's production chain. We haven't been involved in

infrastructure development assistance for decades and are not likely to become so in the future. For better or worse -- mainly for the worse -- most of these dam projects are being carried out by commercial developers and commercial or state-owned banks. That said, however, provided that infrastructure projects and activities are not exploitative or environmentally destructive, the expansion of trade and investment ties between China and its Mekong and ASEAN neighbors can be a "win-win" situation for all. Unfortunately, at present this is far from the case.

What we can do – and have already accomplished to a surprising extent – is to use our expanded engagement with the region to "keep China honest." U.S. naval and other military power combined with our still potent "soft power" – political, economic and cultural – still counts for enough to influence our friends and worry China.

Interestingly, while a few observers from Southeast Asia have worried that the region could be caught in the middle of a growing U.S.-China rivalry, most regional leaders and observers welcome the asymmetrical balancing role that the U.S. provides. While American reengagement with Southeast Asia and our firmer stance regarding China's growing assertiveness in the South China Sea have predictably been criticized by Beijing, some times in angry language, the main observable effect to date has not been an increase in regional tension. Rather, the most important effect has been to cause Beijing to pay noticeably more attention to the concerns, fears and interests of its neighbors. This is a major achievement and one that needs a strong and constructive follow-up by the Administration and Congress.

In conclusion, rather than creating regional nervousness, the initial impact of American reengagement in the Mekong and the wider Southeast Asia region has been working to the benefit of peace and stability, as intended. Now is not the time to rest on these still tentative laurels.

Thank you, Mr. Chairman for giving me this opportunity to share my views with the Committee. I will be glad to answer as best I can any questions you may have, either orally now or in writing later.