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"CHALLENGES TO WATER AND SECURITY IN SOUTHEAST ASIA"

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Chairman Webb and Members of the Subcommittee, thank you for inviting me here today to discuss the importance of the Mekong River to the sustainable development and security of the Mekong Basin and key aspects of our engagement strategy on these issues with the Southeast Asia region.

The Global Water and Sanitation Challenge

In her March 22, 2010 World Water Day Speech, Secretary Clinton stated that "water represents one of the great diplomatic and development opportunities of our time." She noted that, "It's not every day you find an issue where effective diplomacy and development will allow you to save millions of lives, feed the hungry, empower women, advance our national security interests, protect the environment, and demonstrate to billions of people that the United States cares, cares about you and your welfare. Water is that issue."

By 2025, nearly two-thirds of the world's population will be living under water-stressed conditions, including roughly 1.8 billion people who will face absolute water scarcity (a level that threatens economic development as well as human health and well-being). Water scarcity and poor water quality will increase disease risks, undermine economic growth, limit food production, and become an increasing threat to peace and security.

More than 260 watersheds worldwide are shared by two or more countries. As water becomes scarce, tensions over shared resources are likely to rise – both within countries and among countries. Promoting joint management and using

water to build trust and cooperation in conflict-prone regions are important tools in reducing the risks of future conflicts.

The effects of climate change will only exacerbate these challenges. Perhaps the most profound effects of climate change will be the shrinking of glaciers and rivers. Water availability will change as will the likelihood of extreme floods and droughts. These extreme events can affect more people than all other natural disasters combined.

The Greater Mekong sub-region is one of Asia's areas most vulnerable to the impacts of climate change because of the large numbers of people living in floodplains and low-lying coastal areas and because the people and economies of the region depend strongly on agriculture and ecosystem services. The region's extraordinary biodiversity is also at risk from both the direct and indirect impacts of climate change.

As we know from our own experiences with the wetlands and marshes of large river systems such as the Mississippi, the management of these systems can have far-ranging societal and ecological impacts. Sustainable river management in the face of climate change is of great concern to us, as well as for those living in large watersheds around the world.

To help strengthen U.S. engagement in Southeast Asia, Secretary Clinton announced the Lower Mekong Initiative (LMI) in July, 2009 on the margins of the ASEAN Post-Ministerial Meeting. The LMI aims to engage Cambodia, Laos, Thailand, and Vietnam by helping build regional capacity in the areas of environment, health, education, and infrastructure in order to facilitate multilateral cooperation among the four countries on issues of mutual concern, such as the common challenge of effective water resource management

Also in response to this challenge, Secretary Clinton has asked Under Secretary for Global Affairs Maria Otero and U.S. Agency for International Development Administrator Rajiv Shah to identify specific steps we can take to strengthen the United States' capacity to respond to watershed management and climate change. We are also establishing a joint steering group under the leadership of Bureau of Oceans, Environment, and Science Assistant Secretary Kerri-Ann Jones.

The Complexity of the Mekong System

Hydrologically, the Mekong River is one of the most complex river systems in the world. It is the longest river in Southeast Asia, stretching 2,703 miles through six countries, nearly twice the length of the Colorado River. Its watershed supports

between 65 and 80 million people, providing over $2 billion dollars in revenue from wild fisheries alone.

The large flows of the Mekong -- nearly as large as those of the Mississippi -- vary widely according to available precipitation. The basin has a wet season and a dry season. During the wet season, only about 16 percent of the flows come from China. During the dry season months, this share rises to 40 percent. Due to the complexity and extent of the Mekong system, drought and flood events rarely affect the entire reach equally.

Within the Lower Basin are ecologically unique features that play crucial roles in regulating the flows of the Mekong: the Tonle Sap Lake, Cambodia's most important fishery, and, below that, the wide reach of the Delta, which produces about 52 percent of Vietnam's rice and most of its aquaculture fish and shrimp exports.

Located in the Cambodian floodplain, the Tonle Sap Lake is filled by the monsoon rains. When it overflows, it can temporarily reverse the flow of the Mekong. The surge in water storage in the lake is enormous, increasing from 1-2 million acre-feet in the dry season, to 40 - 60 million acre-feet in the wet season, enough to cover the state of New Jersey in 10 feet of water.

The injection of nutrient-rich sediments also creates one of the world's most productive ecosystems and the world's largest freshwater fishery. Through this natural action of seasonal storage, the Tonle Sap Lake regulates the flows of the Mekong, moderates flood events, provides crucial flows during dry months, and prevents the incursion of sea water within the Delta.

The Mekong Delta supports about half of Vietnam's total production of rice and provides food security for its population. Vietnam is one of the world's richest agricultural regions, the second-largest exporter of rice worldwide, and the world's seventh-largest consumer of rice. The Mekong River and its tributaries are crucial to rice production in Vietnam. A total of 12 provinces constitute the Mekong Delta, containing 17 million people, 80 percent of whom are engaged in rice cultivation. According to the United Nations Development Program in Vietnam and Vietnam's Ministry of Agriculture and Rural Development, the rice industry is under serious threat due to the 2010 heat wave, climate change, and upstream Mekong River development.

Strong Riparian Dependence on the Mekong

The inhabitants of the Mekong River Basin depend heavily on the river. Irrigated agriculture and fishing engage 85 percent of the workforce within the Basin, and for most farmers the river is critical to their survival. Many farmers rely on fishing to supplement their incomes and provide nourishment. In every Mekong country fish are the most important source of animal protein; for many, the principal source of protein in their diet. Poverty still challenges the region, and those who are heavily dependent on the natural resource of the Mekong are the first to suffer from any environmental changes.

It is important to note that, while the region is still home to over 20 million people living in poverty, it also holds great capacity for growth and economic opportunity. For example, U.S. exports to Vietnam have tripled in the last three years, with two-way trade reaching nearly $16 billion in 2009. Regional economic growth in 2009 was 6 percent; proving the region's economy to be very resilient during the recent economic downturn.

Hydropower Plans

One result of increased development is that the countries of the Mekong Basin are increasingly turning to hydropower as a solution to their growing energy needs. Construction of dams on the Mekong River may pose immediate and long-term threats to the food security and livelihoods of tens of millions of people in the Lower Mekong Basin. However, awareness of these threats is rising rapidly due to the confluence of an extended drought this year and a concerted push by interested parties, including the United States through the Lower Mekong Initiative, to highlight the possible adverse affects of dam construction.

The impetus behind the Mekong dam projects is the creation of a regional electrical grid that will facilitate the development of the Mekong Basin. In the future, the Mekong and its tributaries could support an elaborate, interlocking electric power generation grid supplying Laos, northern Thailand, parts of Cambodia, and much of Yunnan Province in China. The economic stakes for dam construction are high, and the states of the Mekong Basin are eager for the developmental benefits they can obtain.

All dams have an impact on the flow and natural ecology of rivers and streams, but in certain cases the developmental and environmental tradeoffs in terms of electric power and navigation can be justified. In the case of the 11 mainstream dams planned by Cambodia, Laos, and Thailand on the lower half of the river, disruption

of the food security of 60 million people who depend on the river could be among the serious consequences resulting from damming the Mekong River. A single misplaced dam on the lower Mekong could block the path of migratory fish species that supply up to 80 percent of animal protein in the local diet. A reduction in freshwater flows caused by poorly designed dams could also increase the salinity of the river water, thus adversely affecting the rice crop.

The ambitious plans for investment in infrastructure should be grounded in a comprehensive analysis of where these investments would provide the highest return and what their hydrological impact would be. In the Lower Mekong region there is generally little analysis of soil and water quality, or other constraints to food production, when river modification is being considered. Often hydropower development plans have been plagued by weak oversight of required environmental and social impact assessments.

On the upper stem of the Mekong, China's eight-dam cascade in Yunnan Province, four of which are completed, will certainly disrupt some of the river's natural functions as well as give China some degree of control over the timing and amount of river flows. But the greatest downstream ecological impact may be caused by downstream infrastructure development and would be felt in Cambodia's Tonle Sap Great Lake and Vietnam's Mekong River Delta. Mainstem dams, including two planned by Cambodia itself, may degrade the Tonle Sap, and the Delta may also suffer major consequences due to the loss of vital silt replenishment.

Hydropower remains a valuable energy resource, so long as the cost-benefit tradeoffs are fully understood and responsibly addressed. Many development projects must weigh the tradeoffs between the opportunities presented by new economic infrastructure -- such as roads, bridges, and dams -- and the full impacts to ecology and local livelihoods. The sale of electricity generated by dams provides a source of foreign revenue for countries with few existing alternative options for economic growth, but this may be unsustainable and comes with potentially significant environmental and social costs.

System under Stress

The Mekong River system is already beginning to show signs of strain brought about by multiple competing uses. Although much attention has focused on the impact of future dams, more immediate environmental threats exist through overuse and pollution from industry, wastewater, and agriculture.

Maintaining water quality in the Mekong is key to sustaining the health and productivity of the populations dependent on it. High salinity levels are prevalent in the Delta, mostly during the dry months as diminished flows of the Mekong are unable to push back against sea water incursions. Moreover, agricultural runoff, municipal wastewater, industrial effluent, and sulphate-rich soils have resulted in elevated levels of acidity and eutrophication of the Lower Mekong watershed.

The Lower Mekong countries have recently started to address the issue of water pollution, but the region is plagued by lagging enforcement and monitoring. Upstream sources of water pollution, as well as domestic wastewater continue to degrade the health of the river. Certain municipalities, for example, discharge the majority of their untreated sewage directly into the river.

While the state of the Mekong environmental system is threatened by existing pollution and future development, the few completed monitoring studies have found that the effect of pollution on Mekong fisheries has been limited thus far. While the current impact of development along the Mekong is also limited, future threats to fisheries, water quality, and human health are most likely to come from human interference in the form of dams, increased transportation, additional habitat destruction from land-use changes, and continued water pollution.

The State Department has provided some small grants to a network of universities in the region to study the levels of pollution in the river. This effort has enhanced collaboration among research institutions within the four nations in the Mekong Basin. More studies are needed to fully understand development's effects on the Mekong's fragile biodiversity and to strengthen nascent research partnerships.

Beyond the impact of human activities in the watershed affecting the Mekong River Basin, climate change will undoubtedly add to the list of challenges. Changing rainfall patterns, glacial melting, and greater hydrological variability may increase the likelihood of floods and droughts. Given an average elevation of around five feet, sea-level rise poses a grave threat to the Vietnam Delta.

Local Politics and Water Politics

Shared water issues among the Mekong countries are managed through a series of overlapping legal and institutional arrangements, such as navigation agreements. Effectively managing transboundary water is a significant challenge, particularly for riparian nations with different levels of economic development and past animosities. Facing these difficulties, the Mekong River Commission has steered regional watershed development since 1995, emphasizing avenues for cooperation, strategic planning, and continued dialogue.

Under the 1995 Mekong Agreement signed by the Governments of Cambodia, Laos, Thailand and Vietnam, the Mekong River Commission (MRC) has provided a framework for addressing transboundary water resources in the region. Its structure has allowed for needed flexibility and resiliency as hydrologic and economic realities shift. Major foreign donors to the MRC include Germany, Australia, Sweden, and Denmark.

Since 1995, the MRC has widened its scope. While remaining a forum for cooperative discussions, it has moved from large-scale basin planning to include small-scale resource development and the establishment of a knowledge base in lower-basin hydrology. Although not a regulatory agency, the Mekong River Commission builds knowledge and technical capacity for member states through providing assistance and recommendations.

In the future, the MRC will be forced to address difficult issues of water allocation and basin management. Hydropower development and analysis of water flows during the dry season must be discussed to craft adequate cooperative solutions. Responses to floods or droughts require strengthened communication between riparian countries. These problems are not easy, but cooperative solutions are possible.

In response to these challenges, Secretary Clinton launched the Lower Mekong Initiative (LMI) in 2009 to help address regional issues, with a particular focus on the environment, health, education, and infrastructure. The LMI seeks to facilitate effective, coordinated responses to challenges that are inherently regional in nature through working level visits, training workshops, conferences, and scientific and technological exchanges.

U.S. leadership and increased attention on the LMI has had an impact on how other regional players view these issues. Recently, China agreed to share more of its operational data with the Mekong River Commission and has allowed a visit by Mekong River Commission officials to China's Yunnan province to look at two of the four dams. Japan has also increased its involvement in the region, pledging $5 billion in assistance at the Japan-Mekong Summit last October.

U.S. Policy Regarding Transboundary Water Security Issues

The unfortunate reality is that there will always be disputes over water. Our involvement includes emphasis on building solutions that consider the environment and climate change, health, education, infrastructure, and economic growth. Through our support of multinational solutions, we hope to foster an environment that will preempt instability and minimize the potential for violent conflict. In

analyzing the potential for conflict, we look at factors that are driving tensions, as well as factors that can defuse tensions.

In the Mekong region we see only a few factors with the potential to contribute to conflict. Those factors are unilateral development of upstream infrastructure, bilateral development of downstream infrastructure, changing environmental conditions, and historical tensions in relations between Mekong countries. These instigating factors are to a large extent countered by some important mitigating factors. First, the Mekong countries recognize that they need to act in concert in the stewardship of the Basin. The Asian Development Bank (ADB) and other donors are helping to foster this collaboration. In addition, the MRC is a regional institution which has recently made significant strides and includes representation and support from each of the Basin countries. While much needs to be done to ensure the institution can effectively advance sound water resources management across the Basin, it provides a solid foundation for regional assessment, planning, and discussion. In our view, the MRC's existence greatly minimizes the likelihood of violent conflict among the Mekong states.

While the United States has a long history of engagement with the countries of Southeast Asia on a bilateral basis, there is an increasing awareness of the growing number of issues that transcend national boundaries. The countries of the Lower Mekong region share a variety of common concerns, including transboundary water management, infectious diseases, and vulnerability to climate change. Our Lower Mekong Initiative seeks to support a common regional understanding of these issues and to facilitate an effective, coordinated response.

In order to build regional capacity and cooperation, the State Department is working with other U.S. government partners to develop innovative programs under the auspices of the LMI. "Forecast Mekong," a computerized decision-making tool the U.S. Geological Survey is developing with State Department support, will provide policy makers in the Mekong countries with the information they need to make good decisions on managing the Mekong waterways, including predicted effects of hydropower dams on water flow. This information will be made available on the Internet so that scientists and researchers, based in the region and around the world, can also access the data and the analysis capability. Also created under the auspices of the LMI is a "sister-river partnership" between the Mekong River Commission and the Mississippi River Commission that will help to build the capacity of the Mekong River Commission and to support its efforts to incorporate water-related concerns into regional decision making.

USAID is also working to strengthen the capacity of the Lower Mekong countries to assess the environmental impacts of hydropower development at both the project and basin levels. Through the Asia Development Bank (ADB) and Greater Mekong Sub-region Initiative, USAID will support partnerships between the countries to conduct Strategic Environmental Assessments for hydropower projects. In addition, USAID, in partnership with ADB, MRC and the Worldwide Fund for Nature, has developed a sustainable hydropower development assessment tool, which will soon be piloted in various sub-basins within the watershed.

The United States has an important role to play here. We can inform regional policy and decision making, build local capacity, and promote sustainable development by sharing advanced science and technology capabilities. Our goal in this area is not to determine the outcome of these discussions, but to give policymakers the tools they need to make informed decisions about development of the river.

Finally, in concert with other technical agencies of the U.S. government, USAID and the State Department are making significant investments in the health, environment, and education sectors. In addition to existing bilateral activities, we are further developing our regional programming as well. I would like to highlight the Secretary's announcement of $3 million from USAID for the study of climate change impacts on the Mekong Basin. Let me share a rough sketch of what we hope to accomplish with this money.

USAID will support the development of a regional adaptation strategy across the Lower Mekong. It will engage local institutions and conduct studies to assess vulnerabilities of the ecosystem as well as hold dialogues with a variety of stakeholders to gain support for a regional approach. Further into the program, we look to implement pilot projects and build platforms for sharing of information. Through an integrated and regional approach we will be able to build local and national government capacity for long-term planning founded on sound science and advanced technology.

These programs incorporate U.S. expertise into a regional plan to address some of the key water and development challenges these countries face. They also foster cooperation among the countries in the region to work together for a common purpose.

Conclusion

The Administration recognizes the critical need to work closely with the countries in Southeast Asia to foster the rational use and sustainable development of Mekong River resources before irreparable environmental harm has been done and before the security of the region is jeopardized by improper planning and exploitation of this important waterway. Mekong countries, including to some extent China, have realized the importance of united action by establishing the Mekong River Commission. We hope to advance cooperation and expertise by creating the Lower Mekong Initiative and developing technical assistance programs.

Building upon existing programs, we have mobilized a whole-of-government approach to our engagement in the Lower Mekong Initiative. We are sensitive to the needs and priorities of our Mekong partners and are pursuing activities that can bring the greatest gains for the region. We are encouraged by the progress that has been achieved in such a short time and look forward to planning the Third Lower Mekong Ministerial Meeting to continue the discussion to protect the Mekong River.

Thank you for extending this opportunity to me to testify today on this pressing and vitally important issue. I am happy to respond to any questions you may have.