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Amit Pandya Ellen Laipson
Editors

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The Henry L. Stimson Center
1111 19th Street, NW, 12th Floor
Washington, DC 20036
Telephone: 202-223-5956
Fax: 202-238-9604
www.stimson.org



THE SECURITY DIMENSION OF TRANSBOUNDARY NATURAL RESOURCES MANAGEMENT IN SOUTHEAST ASIA

Richard P. Cronin

The pressures of globalization, regional economic integration, and the quantum increase in energy demand in Southeast Asia have created serious transboundary impacts on the environment and natural resources that thus far have exceeded the political will and capacity of governments and regional institutions to manage. The resources-rich but economically less developed countries of the region, in particular, are pursuing economic growth at the expense of the environment and the human security of the majority of their populations, who still carry on traditional, village-centered subsistence livelihoods.

The political economy of diverse Southeast Asia derives from at least four underlying components. Geographically, the region can be divided between mainland Southeast Asia and island or maritime Southeast Asia. The former is composed of the five countries of the Mekong River Basin: Myanmar (Burma), Cambodia, Laos, Thailand, and Vietnam. It is bounded by China to the north and east, and India and Bangladesh to the west.

Maritime Southeast Asia includes the countries of the Malay Archipelago—Brunei, East Timor (Timor Lest), Indonesia, Malaysia (peninsular and the states of Sabah and Sarawak on the island of Borneo), and the Philippines. The East-West border between Indonesia's West Papua province (formerly Irian Jaya), on the island of Borneo, and the independent state of Papua New Guinea (PNG) is generally accepted as the dividing line between Southeast Asia and Oceania.

Culturally, the Southeast Asia region is generally divided between the predominantly Islamic countries of Indonesia, Malaysia, and Brunei; the Philippines, with its admixture of indigenous culture, Catholicism, and Islam in the South; the countries and territories influenced by Hinduism and Buddhism, including Burma (Myanmar), Cambodia, Laos, Thailand, and Indonesia's island of Bali; predominantly Chinese Singapore; and Vietnam, which has been influenced predominantly by Chinese Confucian culture, indigenous animist beliefs, and to a lesser extent, Christianity.

Strong traditional patterns of social relationships underlie competing modern political ideologies. This applies even to Islam, arguably the most important contemporary ideological phenomenon. Traditions of kingship and local autonomy have

strongly influenced politics and governance in both the Malay and the Hindu-Buddhist worlds, while Confucianism and social conformity still play a strong role in Communist Vietnam, as in China.

Finally, while all countries of the region have adapted or are in the process of adapting to the globalization of world markets and the free flow of international capital, Southeast Asia remains divided between the generally poorer economies based on natural resources extraction and those that have grown relatively rich by opening to investment in manufacturing by multinational companies and continually upgrading their human capital and economic infrastructure.

One unfortunate common thread has been the prevalence of relatively risk-free “crony capitalism” based on state-granted monopolies or quasi-monopolistic licenses for a range of activities, from importing foreign goods to cutting and exporting timber. To one degree or another, most countries of both Southeast and East Asia operate under state-led or state-centered, export-oriented development models that are highly susceptible to political favoritism and corruption.

Most of these underlying cultural-ideological and even economic factors strongly influence patterns of politics and governance. Whether democratically elected or ruled by a sovereign (Brunei), a military junta (Myanmar [Burma]), or a Communist party, the political culture of all of the ten Southeast Asian countries contains some degree of authoritarianism and ideological and social pressures for conformity.

Among other consequences, these different cultural and historical influences tend to undercut efforts to promote greater regional economic and political cooperation on transboundary and nontraditional security issues. On the more positive side, this regional “unity in diversity” and the persistence of pre-modern traditions tend to militate against the regional spread of nontraditional security threats to peace and security, such as pan-Islamic terrorist movements.

Almost every Southeast Asian country has significant problems of natural resources governance. In both mainland and maritime Southeast Asia, ill-considered development projects, weak laws and enforcement, and corruption have decimated forests, polluted the air and water, and greatly reduced biodiversity. Overfishing, pollution, and hydropower dams have brought some of the most important food fish species to the brink of extinction, including the giant Mekong catfish, the world’s largest freshwater fish, and a number of smaller catfish species and other food fish. Destructive factory fishing by Japanese, Chinese, Taiwanese, and Korean fleets have pushed ocean fisheries to the point of collapse. The unsustainable exploitation of natural resources in the less developed countries has led to unprecedented urban-rural income inequality and created major transboundary and nontraditional security (NTS) threats to national well-being and regional stability.

The more developed Southeast Asian countries—Singapore, Malaysia, and Thailand—are better able to take advantage of the positive aspects of globalization, but cannot avoid the effects of environmental degradation from neighboring countries

that often constitute their economic hinterlands. Haze from the annual dry season burning of forests and coastal peat lands in Sumatra and other parts of Indonesia have created serious air pollution problems in Singapore and Malaysia. Narcotics and human trafficking from Myanmar (Burma) and China are growing problems for Thailand and, increasingly, Vietnam. Pandemic diseases such as SARS and avian flu have been spread by increasing cross-border trade and travel. Uneven development and the destruction of traditional livelihoods have led to the uncontrolled movement of millions of illegal workers throughout the region.

Ironically, the more developed Southeast Asian countries themselves are major drivers of environmental destruction. They consume more energy and produce more carbon dioxide (CO₂). They have created strict legal regimes to maintain what is left of their forests, but some of their industrial and trading conglomerates are involved in illegal logging, often for the purpose of clearing land for environmentally destructive palm and rubber plantations. Their electric utilities and construction companies play a major role in the uncoordinated and environmentally unsustainable construction of hydroelectric power dams in the Mekong Basin.

GENERAL STATE OF DISCOURSE IN SOUTHEAST ASIA

Awareness of transboundary issues and the concept of NTS are widely accepted in Southeast Asia. In fact, Southeast Asian intellectuals at universities and think tanks have been among the most prominent promoters of the concept. The growing importance of transboundary and NTS issues has been formally recognized in a number of regional academic frameworks and fora. These include

- The 14-member Consortium of Non-Traditional Security Studies in Asia (NTS-ASIA), whose secretariat is situated in the S. Rajaratnam School of International Studies at Singapore's Nanyang Technological University;
- The ASEAN Institute of Strategic and International Studies (ASEAN-ISIS) network, which includes some of the same regional institutions and whose secretariat is situated at the Indonesian Center for Strategic and International Studies (CSIS) in Jakarta; and
- The NTS-oriented Network of East Asian Think-Tanks (NEAT), which is composed of government-designated institutions in the ten ASEAN countries as well as Japan, China, and South Korea. NEAT was launched in Beijing in 2003 under the auspices of the ASEAN Plus Three Summit. It includes some of the same institutions as the NTS-ASIA and the ASEAN-ISIS network, including the RSIS in Singapore and a number of other academic and government-affiliated research institutes.

Some Southeast Asian scholars argue that post-Cold War concepts of NTS should be at the core of the proposed ASEAN Security Community.¹ It remains to be seen whether and in what form the proposed community will develop.

Despite the general acceptance of the NTS concept, the definitions and implications of these new kinds of security threats are highly contested. Broadly speaking, the advocates of differing perspectives can be divided into a number of sometimes overlapping groups:

- Academic and think tank analysts in the more economically and politically developed countries have played a leading role in calling the attention of the state to new kinds of existential threats which are not susceptible to military force. In Singapore and Malaysia, whose political systems combine “soft authoritarianism” with procedural democracy, the responsibility of the state for protecting the health and welfare of the population is well accepted by the NTS community, and these centers have ready access to government officials. These think tanks and some other government-affiliated institutes of strategic and international studies tend to view transboundary and other NTS threats as appropriate matters for “securitization,” albeit with the state “as a means, not an end to various issues, ranging from the individual security to international terrorism.”²
- In many less developed Southeast Asian countries, environmental non-governmental organizations (NGOs) and civil society organizations critical of unconstrained globalization accept the NTS concept but tend to put most emphasis on the human security aspect. These groups generally view the state itself as a major cause of the problem because of its preemption, and often unsustainable exploitation and mismanagement, of the natural resources of the “commons” for the benefit of urbanites and other politically important constituencies. This is particularly the case in the Philippines, Indonesia, and Thailand, where NGOs operate with comparative freedom. In these countries, NGOs and other advocacy groups seek to change government policy through political action, publicity, and partnerships with regional and global counterpart organizations.
- Think tanks in the countries in transition to market economies—Vietnam, Cambodia, and Laos—tend to focus on the more “hard” security aspects of transboundary issues and are especially wary of treading too deeply into politically sensitive issues such as human rights, transparency, corruption, and other issues that pose implicit challenges to the state.
- NGOs, academics, and journalists in both authoritarian and more democratically ruled countries with natural resources-based developmental policies tend to view the state as the main threat to the environment and human security as a result of its continued focus on large-scale infrastructure projects, lack of transparency in governance, and corruption. Because of continued authoritarian rule by communist parties, these stakeholders seek to work within the system and the limitations imposed on the press and free speech.

Despite these important differences of perspective, most Southeast Asian intellectual elites and members of civil society tend to agree on a number of basic issues. Interlocutors from most groups acknowledge the broader and more generic causes

of NTS threats. These include the impact of globalization, poor or inadequate governance, inadequate human capacity, endemic corruption, and a low and possibly declining level of scientific knowledge.

Southeast Asians also widely accept the need for regional solutions to transboundary and NTS issues, but many, if not most, Southeast Asian interlocutors express skepticism about the possibility of addressing issues involving high-stakes national economic interests in regional frameworks such as ASEAN and subregional mechanisms such as the four-country Mekong River Commission (MRC) and the Greater Mekong Subregion (GMS) cooperative infrastructure development program led by the Asian Development Bank (ADB). Major obstacles include concern for national sovereignty, the lack of political will and capacity, and the lack of enforcement mechanisms.

More fundamental are the high priority regional states attach to national sovereignty, no little amount of mutual suspicion and rivalry, and the limitations of ASEAN and other regional frameworks in resolving transboundary problems. Some are more optimistic about so-called Track 3 “people-to-people”-type meetings such as the ASEAN People’s Assembly, an association of civil society organizations initiated under the ASEAN-ISIS network. These meetings feature parallel communities of academics, think tank scholars, and activists who share certain assumptions and focus on NTS issues including haze, the underlying causes of terrorism, governance, corruption, human rights, and human security. Some participants at the Regional Voices: Transnational Challenges Bangkok workshop in September 2007 argued that Track 2 meetings were too influenced by the presence of bureaucrats and diplomats in their personal capacity, whose excessive adherence to “the ASEAN way” made them reluctant to speak frankly to their counterparts from other countries.

Civil society representatives criticize ASEAN for failing to deal with the severe problem of haze and acrid smoke caused by the deliberate setting of forest fires on Indonesia’s islands of Kalimantan and Sumatra. Long an annual dry season phenomenon, the problem reached record levels in 1997–98 as a consequence of an extended El Niño and the rapidly increasing burning of forests and peat for the creation of palm oil plantations, often by Malaysian-Chinese companies. The 1997–98 fires caused an estimated US\$9 billion in suspended airline flights, business closures, health problems, and natural resources impacts. Fires in Kalimantan and Sumatra were almost as severe in 2005 and 2006, with smoke and haze in the latter year affecting visibility and health 2,500 miles downwind in Marianas and Guam in the South Pacific.³ Some Southeast Asian academics and civil society representatives argue that Track 2-type meetings, where officials participate only in their personal capacity, have been more productive than any of five ASEAN agreements, none of which has any provision for specific actions, enforcement, or consequences for noncompliance.⁴

Governmental Attitudes

Government attitudes toward the NTS concept in Southeast Asia vary widely. The governments with the highest capacity and the greatest sense of vulnerability, especially Singapore and Malaysia, have generally embraced the concept and are open to the suggestions of research institutes and universities. These governments generally have accepted the concepts and ideas suggested by the NTS communities, including institutions which they support and which serve as sources of research, analysis, and policy advice.

Generally speaking, the less developed the country and the more authoritarian the government, the less the NTS concept is appreciated and viewed as a matter of urgency. There is also a hierarchy of governmental concerns. Depending on their capacity, most governments take seriously threats such as pandemic disease, uncontrolled labor migration, and cross-border crime. Environmental concerns are strongest in the most developed countries, which also tend to have the most extensive civil society. The idea of securitizing food or other aspects of human security remains a hard sell.

The governments of the more authoritarian countries tend to be firmly wedded to the desire to achieve rapid economic growth regardless of the cost to the environment and marginalized groups, which puts them at odds with NGOs and civil society. In addition, national leaders usually do not have a good understanding of environmental science and the sociological and socioeconomic impacts of the infrastructure projects they support.

Among the poorest countries with weak governance, low capacity, and corruption, concern about issues like human trafficking tends to be less about the human impact and suffering than fear that transborder criminal groups will become rival power centers in remote areas. These governments are also the least concerned about the rights and welfare of isolated and politically marginalized ethnic minorities.

Some NGOs and other civil society representatives argue that the leaders and bureaucratic decision makers in these countries could be open to more environmentally friendly and human security-oriented development approaches if they had a better understanding of the longer-term consequences of their policies. Unfortunately, this is not yet the case, even among leaders and decision makers who publicly have evinced concern about the consequences of unsustainable development and the threat posed by global warming. For instance, Cambodian Prime Minister Hun Sen has expressed great concern about the threat from hydropower dams in China, Laos, and Vietnam, yet Cambodia is reported to be negotiating with China for the construction of a series of dams on the main stream of the Mekong River. The Vietnamese government is alarmed about the impact of upstream dams on the Mekong Delta but continues to carry out an ambitious dam-building program upstream in the Central Highlands.

Relationship to Global Warming

The depletion of fisheries, decimation of forests, and environmentally unsustainable development of hydropower already have become sources not only of transboundary impact but also of tensions both within and among Southeast Asian countries.

Rapid deforestation in Southeast Asia, often for the purpose of creating palm oil and rubber plantations, is having a global impact. The United Nations calculated in its annual Human Development Report for 2007 that because of rapid deforestation and the dry season burning of trees and peat bogs, Indonesia had become the largest net emitter of CO₂ after the United States and China.

Large hydropower dams may generate as much CO₂ as oil- and coal-burning thermal power stations because of the loss of tree cover, the methane generated by the rotting of trees and vegetation that have been inundated by the reservoirs, and the creation of microclimates over large reservoirs. Large dams also hold back silt (which seriously reduces their useful life) and affect the basic hydrology of the river system, which is the source of its productivity and biodiversity. Already dams and navigational enhancements have accelerated coastal flooding and the intrusion of saltwater into low-lying agricultural regions in lower Cambodia and Vietnam's Mekong Delta, its "rice basket." Jakarta in Indonesia faces a similar crisis as the result of the unsustainable depletion of the water table to support the needs of a fast-growing urban population.

PRINCIPAL DRIVERS OF NTS THREATS: COMPETITION FOR SCARCE ENERGY, FOOD RESOURCES, AND OTHER SEA-BASED NATURAL RESOURCES

Conflicting claims to marine fisheries and undersea oil and gas reserves are increasing as the fish catches decline and the price of energy increases. China and its Southeast Asian neighbors have fundamentally incompatible methods for defining the boundaries of exclusive economic zones (EEZs). China's assertion of a historical claim to nearly the whole of the South China Sea is at variance with established international rules. Yet even Southeast Asian countries that base their claims on established principles have disputes over boundaries.

South China Sea disputes have already generated harsh rhetoric and some non-violent confrontations involving China, Vietnam, and the Philippines, most notably the 1995 occupation of Mischief Reef in the Spratly Islands by China, less than 80 miles off the Philippines coast. China and its ASEAN neighbors have agreed to a stand-still agreement and, in principle, the sharing of the fisheries and sea-based resources, but no concrete action has taken place to date. China and Vietnam have agreed to share the resources in contested parts of the Gulf of Tonkin, but to no visible result. In general, Vietnam and other littoral countries of the South China Sea feel at a great disadvantage in seeking a share of these resources because of China's size and military power.

Southeast Asian fisheries experts also complain about the damage caused by the violation of EEZs by foreign factory fleets in the so-called Coral Triangle, an area of 5.2 million square kilometers ringed by Malaysia (Sabah and Sarawak, on Borneo), Indonesia, the Philippines, Papua New Guinea, the Solomon Islands, Fiji, and Northern Australia. Coral reefs, which play a key role in nurturing fish populations and supporting biodiversity, are already under stress because of the warming of the world's oceans, which interferes with chemical processes that are necessary for the reefs' survival. The factory-scale international fishing fleets of Japan, China, Taiwan, and South Korea are said to be the prime offenders in the destruction of deep-sea coral and decimation of fish stocks in the Coral Triangle, but local fishers also have wreaked havoc on in-shore coral.

Improved Regional Transportation Networks

The rapid improvement in air, sea, road, and rail transportation, along with regional agreements to reduce trade barriers and promote tourism, have contributed to regional economic growth but also created new or greatly expanded vectors for diseases, uncontrolled transborder labor movement, and narcotics and human trafficking. As one unintended result of new road networks in Indonesia, often financed by the Asian Development Bank (ADB) and the World Bank, Indonesian ports are clogged with illegally cut logs awaiting shipment to China, Malaysia, and global destinations.

The same process is occurring in the Mekong Basin as a consequence of the upgrading and expansion of regional road networks under the ADB-led Greater Mekong Subregion (GMS) cooperative infrastructure development program. The GMS is one of the most ambitious programs of regional economic integration being promoted around the world by the World Bank and regional multilateral development banks (MDBs), including the ADB in the Mekong, the African Development Bank (ADB or AfDB) in sub-Saharan Africa, and the Inter-American Development Bank in the Amazon.

The vast bulk of the estimated US\$31 billion final cost of the GMS involves three major transportation corridors and several spurs that link the five Mekong countries of Southeast Asia—Myanmar (Burma), Cambodia, Laos, Thailand, and Vietnam—to each other and to Kunming, the capital of China's Yunnan Province, and the Quangxi Autonomous Region, which shares a long border with Vietnam. While promoting trade and economic integration, the same roads also have unintentionally opened up the lower Mekong Basin to increased illegal logging and polluting mining operations.

Deforestation and Haze

Apart from its contribution to global warming, deforestation is one of the biggest threats to human security in Southeast Asia. Especially in the poorest Southeast Asian countries, large numbers of people depend on the forests for food, fuel, and the raw material for tradable handmade goods.

The Greater Mekong Subregion

The Greater Mekong Subregion (GMS) is a cooperative development project led and substantially financed by the Asian Development Bank (ADB). It is arguably the single most important infrastructure project in mainland Southeast Asia and has a substantial impact on nontraditional security. The GMS comprises Myanmar (Burma), Cambodia, Laos, Thailand, Vietnam, and China (Yunnan Province and Guangxi Autonomous Region).

Launched in 1992, the GMS is one of the world's largest regional economic infrastructure projects, with an estimated total cost of US\$27.6 billion, about half of which will be financed or cofinanced by the ADB and the rest provided by Japan and other donors. The project has made great strides in its main objective of promoting basin-wide economic integration, but it has also been the object of criticism for failing to fulfill its principles of cooperative, environmentally sustainable, and equitable development.

The GMS involves nine sectors: transportation, energy, telecommunications, environment, human resource development, tourism, trade, private-sector investment, and agriculture. The lion's share of GMS funding has been devoted to roads, bridges, railroads, and a regional power grid and telecommunications backbone in three transportation "corridors":

North-South: From Kunming, Yunnan's capital, to Bangkok, with a multilane spur linking Kunming to Hanoi and Haiphong on the Tonkin Gulf

East-West: From Da Nang on Vietnam's South China Sea to Moulmein, Myanmar (Burma), on the Andaman Sea/Indian Ocean

Southern: From Vung Tau on Vietnam's southeastern coast to Bangkok, via Ho Chi Minh City and Phnom Penh

The road network will greatly boost trade and reduce shipping costs, times, and distances, but it will also facilitate illegal logging and unsustainable plantation cultivation, seriously diminish biodiversity, and facilitate movement of disease vectors, narcotics and human trafficking, and uncontrolled labor migration. International and Southeast Asian nongovernmental organizations (NGOs) also argue that the road network will benefit urban areas more than the countryside, creating a widening income gap. Environmentalists note that planners ignored the multiple ecosystems through which the transportation corridors run.

Indonesia lost 30 percent of its primary forest between 1990 and 2005, while Cambodia lost 58 percent and Vietnam an astounding 77 percent during the same time period. Total deforestation, which takes into account degraded second- and third-growth forest, is less, but still in the range of 19–38 percent in the same countries.⁵

Most forest cutting in Indonesia and northern Laos currently is being carried out by commercial contractors to both harvest the logs and create palm oil and rubber plantations. Malaysian companies are prominently involved in cutting forests and creating these plantations in Indonesia, while Chinese companies predominate in northern Laos. In Laos, these plantations also are growing sources of water pollution.

Environmentalists and fisheries experts have also expressed dismay about what they see as Cambodia's record of lawlessness and corruption in the seizure of

A number of European countries, principally France, have also contributed financing to the GMS, but mainly in sectors in which their companies are competitive, like telecommunications and hydropower. China is cofinancing, with Thailand, a bridge over the Mekong that will be the final link in the North-South Kunming-Bangkok highway; China is also constructing a section of highway in northern Laos. It is, however, a net recipient of GMS grants and loans for road and other development projects and, in economic and geopolitical terms, may prove to be the largest beneficiary of the GMS projects.

**Financing of the GMS Cooperative Development Program
as of December 31, 2006 (US\$ in millions)**

	ADB	ADB Cofinancing (1)	Japan	France	Nordic Countries	Others (2)	TOTALS
Hydropower & Transmission	6.8	176.8	38.5	3.2	12.8	1452.5	1690.6
Environment	1.8	5.9	0.3	—	2.0	3.5	13.5
Human Health	0.1	33.8	8.0	—	2.2	3.6	47.7
Transportation	679.8	1020.2	413.0	198.9	—	566.7	2878.6
Misc. (3)	60.0	8.8	1.0	2.7	0.8	8.5	81.8
TOTALS	748.5	1245.5	460.8	204.8	17.8	2034.8	4712.2

(1) ADB loans and grants with supplemental third-party financing

(2) UN agencies, World Bank, European Investment Bank, OPEC Fund, various commercial banks, bilateral donors including Singapore, Thailand, and China Development Bank (only projects in China)

(3) Includes projects aimed at general development, subregional cooperation, telecommunications, and tourism

Japan—largest GMS contributor; US contributes to ADB generally, but not GMS specifically; China—beneficiary and contributor—US\$30 million contributed, received US\$17.95 billion in ADB loans

Source: Asian Development Bank.

major tracts of forest land from the poorest of the poor, whose subsistence livelihoods depend on traditional access to forest resources. The Phnom Penh government likewise has failed to prevent the wholesale destruction of wetlands and coastal mangrove forests. The replacement of forests with plantations and the expansion of food production from irrigated fields is of little benefit to the dispossessed forest dwellers and fishing communities who have no alternative sources of income and livelihood.

Even political leaders in the most exploited parts of Southeast Asia are concerned about deforestation, but efforts thus far, such as bans on cutting in forest reserves and bans on the export of logs, have failed to have any significant impact because of an inadequate legal and enforcement regime and widespread corruption.

Unsustainable Hydropower Development

The rush to exploit the hydroelectric potential of the 2,880-kilometer long Mekong River and its tributaries also looms as a future source of conflict as well as a major threat to the human security of tens of millions of people who depend on the river and its tributaries for their livelihoods. In the longer term, there just isn't enough water to meet every country's development aspirations. Compared to other major river systems of the world, the Mekong remains relatively unspoiled, but this is changing fast. As many as 260 dams of various sizes are currently being planned or are under consideration. The effects of global warming, including the shrinkage of snow cover and the retreat of glaciers on the Tibetan Plateau, where the Mekong rises, is likely to exacerbate this problem. The potential for a future conflict over water resources cannot be ruled out.

All of the six Mekong Basin countries, including China, which controls the upper half of the river, view the Mekong's waters as a "free" source of energy that can be used for both domestic consumption and export. Thailand, which already has tapped most of its hydropower capacity, now plays a leading role in the construction of dams in neighboring countries.

The five lower Mekong countries of Southeast Asia feel threatened by China's construction of a massive eight-dam cascade of hydropower dams upstream in Yunnan Province and its blasting of rapids and shoals to facilitate navigation by ships carrying oil and other cargoes. These dams, including the world's highest concrete arch dam nearing completion in the middle reaches of the river in Yunnan, raise and lower water levels without warning, erode river banks, and threaten to create on the Mekong River the kind of catastrophic ecological damage that the Three Gorges Dam has caused to the Yangtze. China (and Myanmar [Burma]) has thus far accepted only observer status in the four-country Mekong River Commission, which was created to promote cooperative and sustainable development of the river's hydropower and irrigation potential.

The downstream countries have been unwilling to challenge China over the downstream environmental, economic, and human security costs of its projects because of the disparities of national power, dependency on Chinese economic assistance, and/or the prospect of greater access to the Chinese market. The lower Mekong countries have not shrunk from criticizing each other, however, and transboundary damage caused by upstream dams has begun to raise regional tensions. Cambodia has for some years complained to Laos and Vietnam over the construction of hydroelectric dams that have damaged downstream villages and threatened the critical "flood pulse" hydrology of the Tonle Sap River and Great Lake of Cambodia. The interaction of this unique hydrological phenomenon, with its seasonal extremes of flood and drought has made the lower Mekong the most biologically diverse and productive freshwater river after the Amazon. Its fisheries provide more than 70 percent of the animal protein consumed by more than 60 million people in southern Laos, Cambodia, and Vietnam's Mekong Delta.

Hydropower and Mekong Fisheries

The dry[ing up] of the Tonle Sap, believe me, will not just affect Cambodia but the whole region. A study to look at the downstream impacts is urgently needed for the sustainability of resources management in the Mekong.

—Cambodian Prime Minister Hun Sen, 2003

The 800,000-square-kilometer Mekong Basin, roughly the size of the Lower Mississippi Basin of North America, rivals the Amazon as the world's most productive and biologically diverse freshwater basin. The basin has at least 1,200 species of river fish and approximately three times the fish diversity of the Amazon per unit of catchment, considerably more than most coral reefs.

The 4,880-kilometer-long Mekong River (estimates vary), the tenth or eleventh longest in the world, rises in the Tibetan Plateau, tumbles through the high gorges of China's Yunnan Province, and then borders or passes through five Southeast Asian countries before debouching into the South China Sea in Vietnam's Mekong Delta. The Mekong and its Southeast Asian tributaries provide as much as 80 percent of the animal protein consumed by 70 or so million people, mainly in Laos, Cambodia, and Vietnam's Mekong Delta. The river's unique hydrology, which depends on extremes of wet and dry, and its annual monsoon "flood pulse" are keys to its immense productivity. Farming on river beds and banks during the dry season also plays a critical role in supplying vegetables and other crops at a time when other rural employment is scarce.

Scores of large dams are now under construction in China's Yunnan Province, in Laos (which aspires to become the "battery" of Southeast Asia), and in Vietnam's Central Highlands, seriously threatening the livelihoods and food security of millions of people, many of them indigenous minorities who are forced off their riverine homesteads. Thailand, with the biggest economy and highest energy demand in Southeast Asia, has already dammed most of its own rivers, but the state-owned Electrical Generating Authority of Thailand (EGAT) builds dams in Laos, Vietnam, and Myanmar (Burma) and imports their electrical output under long-term purchase contracts. The severe ecological and environmental damage caused by these dams is being magnified by the absence of any transboundary cooperation or coordination.

China's Yunnan cascade and its dredging of the river in northern Laos to facilitate navigation already pose an existential threat to thousands who live near the river because of rapid and unpredictable changes in the water level. Vietnam and Laos are building major dam cascades on three tributary rivers that are critical to fish reproduction in the middle reaches of the lower Mekong. Laos plans to build a dam at Khone Falls that will block the only one of the river's 18 channels that is navigable year round by many species of fish on their way to their spawning grounds. The area below the falls currently is the last sanctuary of the endangered giant Mekong catfish and numerous other food species, as well as the freshwater Mekong dolphin. The loss of hundreds of millions of dollars worth of fish is just a small fraction of the total socioeconomic cost of poorly conceived hydropower projects, a fact that is causing increasing opposition by those most affected and their civil society advocates.

Source: Address to the Second International Symposium on the Management of Large Fisheries, "Sustaining Livelihoods and Biodiversity in the New Millennium," February 11, 2003.

In its boldest move to date, Cambodia took Laos to task at a November 2007 meeting of the MRC over the Lao government's plan to construct up to four hydropower dams on the lower Mekong near the Laos-Cambodia border. Cambodia is concerned that these dams, especially a proposed water diversion project at the Don Sahong (channel) in the Khone Falls area, will decimate fisheries. The Don Sahong is the only one of 18 such channels through the Khone Falls rapids that can be transited year round by migrating fish. Reportedly, Cambodia's senior representative to the MRC declared, "At the moment this is just an initiative by Laos. When they begin to build [dams] we will stop them."⁶

This boast has less credibility because of Cambodia's own ambitious hydropower development and irrigation projects that also reduce wetlands and fish populations. Environmentalists and some unnamed hydrology and fisheries experts at the MRC Secretariat have deplored Cambodia's decision in late 2006 to sign a memorandum of understanding (MOU) with the China Southern Power Grid Company to explore the feasibility of a dam on the Mekong's main stream at Sambor, downstream from Laos's proposed Don Sahong dam. Laos, for its part, has signed MOUs with Chinese engineering and power companies to conduct feasibility studies on three other mainstream dams.⁷

In one of history's more remarkable ironies, the mainstream dam projects that are the subject of separate bilateral negotiations between Chinese state-owned hydropower engineering and transmission companies were once part of a vast lower Mekong Basin development plan promoted by the United States during the early Cold War era, when concern for the environment was hardly in the hydropower engineering lexicon.⁸ Long moribund, the resurrection of these projects by Chinese companies not only poses the most serious threat yet to the environment and human security in the lower Mekong Basin, but also has troubling geopolitical implications.

Details regarding the proposed dams have not been publicly released, but the original scheme envisioned locks that would facilitate navigation from northern Laos to the South China Sea. The Chinese themselves have long dreamed of a water highway from Yunnan to the Sea.

THE STATE AS A THREAT TO HUMAN SECURITY

One of the most important common threads in discourse with Southeast Asian NGOs and social scientists is the role of the state itself as a threat to human security because of its preemption of land and natural resources and the traditional rights of ethnic minorities for development projects, and its poor stewardship of those resources. Especially in Laos, Vietnam, Indonesia, and the Philippines, the unscientific and unconstrained exploitation of natural resources has become a primary threat to human security. In many if not most cases, the exploitation has been carried out by foreign private contractors in league with corrupt officials. Illegal or inadequately regulated companies have ravaged forests and mineral-bearing lands,

created serious transboundary environmental pollution, and displaced tens of thousands of people from their lands and traditional sources of livelihood. Increasingly, the taking of traditional lands by the state and politically connected timber, mining, and hydropower interests has become a source of political instability.

Conflicting Roles of the Multilateral Development Banks and Aid Donor Countries

Although many of the development projects with environmentally unsustainable impacts are the result of governmental action or inaction, environmental and human security activists in Southeast Asia tend to have a highly jaundiced view of the MDBs and some donor countries. Most major economic infrastructure development projects involve a wide variety of actors, including the MDBs and donor countries that provide financing and the engineering and construction companies that carry out the projects. In the case of hydropower projects, the companies that supply key components such as pumps, turbines, and control systems often are promoted by their national governments, both through ODA grants and loans and through lobbying on the MDB boards on which they sit, and by state-owned utilities such the Electric Generating Authority of Thailand (EGAT), which finances projects in neighboring countries and buys the power for domestic use.

Japan and the Scandinavian countries provide large loans and grants to gain business for their companies. Ironically, these same countries are also among the largest providers of funding for environmental protection, though mainly for research and technical studies.

The banks are increasingly in an awkward position because of their embrace in the past two decades of public-private partnerships. In the case of the ADB and the World Bank, their mandate to promote environmentally sustainable development has been compromised by the resistance of governments to conducting credible environmental impact assessments (EIAs) and the banks' desire to remain relevant. This has become more difficult as a result of the growing willingness of China to finance these projects and the internal politics of these organizations, in which borrowers are also shareholders.

The Limited but Growing Role and Influence of NGOs

NGOs and civil society organizations that promote environmental protection and human security are thriving in most Southeast Asian countries, with the exception of the most authoritarian countries, Laos and Myanmar (Burma). The impact of these organizations varies from country to country, but NGO representatives and members of research organizations say that governments pay little heed to them.

NGOs and other civil society organizations in Thailand are the most influential, partly because they (along with those in Singapore) are the most developed and democratic, and because the destruction of natural resources reached a point of equilibrium. Indonesian NGOs are increasingly active because of post-Suharto

democratization, but their impact is limited by widespread corruption and the ongoing devolution of government resources and functions to the provincial level.

Because of the strong role of the United Nations and the international community in bringing peace to Cambodia in the 1990s, the perspectives of NGOs, research institutes, and many senior government officials have been significantly influenced by global environmental and human security values. NGOs and research centers such as the Cambodian Development Research Institute, which receive support from major foundations, have had some success in working with the government.

Even in Vietnam, which still maintains a rigid system of Communist Party control, environmental and human security NGOs have had some success in working within the system in at least two ways. First, some organizations gain modest impact by serving as intermediaries between the public and the next higher echelon of government above corrupt local authorities. Second, they produce data and materials that can be used to influence government policy. Also, on issues such as large-scale hydropower development, the Vietnamese government's alarm about the damage being done to the Mekong Delta has caused it to at least acknowledge that it is both an upstream and a downstream country.

The China Factor in Transnational Issues in Southeast Asia

China's seemingly insatiable demand for natural resources and semi-processed industrial inputs has had a major negative influence on the unsustainable exploitation of national resources and development of energy resources in Southeast Asia. Especially because of its fast-growing energy needs, China has sought to expand its influence and involvement in the oil and gas sectors in Myanmar (Burma) and areas of the South China Sea, where Beijing has sought to advance territorial claims that are not in keeping with established international law.

China's growing regional influence has been aided by the completion of all-weather roads and bridges connecting all parts of the Mekong region to each other and to China's dynamic Yunnan Province, under the multi-billion-dollar GMS cooperative development program led and largely financed by the Manila-based ADB. The GMS project also includes the construction of a regional electric power grid, largely to facilitate the export of power by the least developed countries, such as Laos and Cambodia, to Thailand and Vietnam. Some unintended negative consequences of expanded transportation infrastructure and economic dislocations have included the rise of illegal labor migration, human trafficking, and the spread of HIV/AIDS and diseases with pandemic potential such as SARS and avian flu.

China is hardly the main cause of transboundary issues in Southeast Asia, but problems such as deforestation, overfishing, and the environmental damage caused by China's search for energy and national resources cannot be solved without Beijing's cooperation. Chinese companies engaged in extractive industries in Myanmar (Burma), Laos, and Cambodia are widely viewed as enjoying the sup-

port and encouragement of Beijing and Kunming. Changing its current approach would be a major element of China's emergence as a "responsible stakeholder."

UNDERLYING OBSTACLES TO ENVIRONMENTALLY SUSTAINABLE EXPLOITATION OF NATURAL RESOURCES AND ENERGY

Southeast Asian interlocutors generally cite three underlying factors as the main causes of the environmentally unsustainable development of natural resources and energy in Southeast Asia, and the resulting impact on human security. These are problems of governance, corruption, and human capacity. All of them interact with one another.

Governance

Especially in the less developed countries of Southeast Asia, governance is regularly cited as a major underlying problem. Many Southeast Asian observers and analysts cite the inability of regional countries to formulate and carry out sound development policies. Laos and, to a lesser extent, Cambodia do not have adequate governance capacity and the technical knowledge to properly manage major projects. Even in the most authoritarian of the less developed Southeast Asian countries, the central governments have remarkably limited control over lower levels of administration and weak mechanisms for financial management. In Cambodia, Laos, and Vietnam, for instance, many poorly conceived and environmentally damaging hydropower projects are carried out locally, sometimes even without the awareness of the central government.

One problem for the CLV countries (Cambodia, Laos, and Vietnam) is their adoption of the Chinese model of economic liberalization, coupled with the continued dominance of the Communist Party. As in China, the efforts of senior officials to defuse potentially destabilizing abuses by local authorities, such as the expropriation of land, are undercut by low-level party officials and politically connected bureaucrats. The improvement of governance has long been an area of emphasis by the MDBs and bilateral aid donors, but the results thus far have been modest at best.

Corruption

Rampant corruption, which is the single most mentioned complaint by Southeast Asians, undermines governance as well as the legitimacy of governance and creates great harm to human security. Corruption is a complex problem that defies easy solution. Among Southeast Asians, corruption is the most frequently cited obstacle to sustainable development. For instance, Laos, Indonesia, Cambodia, Vietnam, and other countries ban the cutting and export of logs. Yet long lines of log-laden trucks are common at crossing points on Laos's borders with China, Vietnam, and Thailand. Indonesian ports handle millions of tons of logs, almost

all of them cut illegally by Chinese and Malaysian-Chinese companies. NGOs in Southeast Asia complain that big commercial contractors operate with impunity, while local villagers, who traditionally depend on the forests for food, firewood, and energy, are arrested for minor infractions. The lack of an adequate legal system and fragmented law enforcement responsibility, coupled with corruption, makes it impossible for governments to enforce their edicts.

Corruption also undermines already inadequate programs to relocate and provide compensation to thousands of Southeast Asians—most often, ethnic and tribal minority groups—who are displaced by the construction of hydropower dams, highways, and other economic infrastructure. Many NGOs in Southeast Asia organize protests and petition the government and the multilateral banks which help design and finance the projects. Yet efforts by the MDBs in particular to promote the adoption of credible plans for relocation and compensation are undermined by corruption, leaving those displaced from their villages and homes more impoverished than ever.

Human Capacity, Including Insufficient Technical and Scientific Understanding

A number of Southeast Asian interlocutors at the Bangkok workshop decried what they described as a broad decline in the scientific and technological capacities of many Southeast Asian nations.

While all of the countries have the legitimate right to develop their national forest, mineral, fishery, and water resources to promote economic development, poorly conceived projects are producing environmental and ecological damage that is worse by several magnitudes than is necessary.

Most Southeast Asian political leaders and bureaucratic decision makers lack sufficient scientific and technical understanding to make good decisions. Some NGOs in the least developed Southeast Asian countries express cautious optimism that governments and leaders might be prepared to adopt more environmentally friendly development policies if they were better informed about the adverse long-term consequences of environmentally unsustainable development projects. The rationale for these hopes is a belief that most authoritarian governments do not consciously make decisions about infrastructure projects that will eventually backfire and undermine their legitimacy.

The more optimistic regional interlocutors assume that leaders and bureaucratic decision makers of the Mekong Basin countries generally understand that dams do environmental damage and that some unique species such as the giant Mekong catfish and freshwater dolphin have already been pushed to the edge of extinction. They may generally understand this basis of opposition to controversial projects such as large hydropower dams, but they appear to not grasp or not be willing to consider the full environmental and socioeconomic costs of these projects. In

many cases, they also lack the ability to control smaller but highly damaging projects in provinces and districts that are dominated by local oligarchs or party bosses who may be outside their effective control.

Urban Bias

NGO and other civil society representatives and social scientists also decry the inherent urban bias in governmental decision making and development projects. In Southeast Asia, as in most developing regions, economic, social, and political elites tend to be urban based, and policies are formulated largely with urban constituencies in mind. NGOs and civil society groups give low credibility to the “anti-poverty” rationales for major infrastructure projects supported by the ADB, the World Bank, and bilateral donors. They point out that Laos’s hydroelectric power is almost entirely exported for hard currency earnings, leaving displaced villagers themselves without electric power. Most of the output of China’s dams in Yunnan Province is used to meet the growing energy needs of Guangdong and other coastal provinces, as well as Kunming, the provincial capital. Because of corruption and poor project design, some environmental and human security-oriented NGOs claim that the 70 or more percent of the people in developing countries who live in rural areas seldom see any benefit from development projects, and many end up in the slums of cities as day laborers and prostitutes.

Energy Issues

Governments in Southeast Asia are very concerned about meeting their growing energy needs or producing energy for export. The less developed countries look primarily to their own natural resources, especially oil and gas deposits and hydropower. Rising energy prices are a burden, even for energy-rich countries like Indonesia, Malaysia, and Thailand, because they have developed to the point where they consume more energy than they produce. The region still has a number of energy bottlenecks, such as the scarcity of oil-refining capacity, which is mainly centered in Singapore.

Most Southeast Asian governments simply cannot afford to invest in energy security. To the extent that they cooperate on energy security, it is only tangential—for instance, the cooperation of Singapore, Malaysia, and Indonesia on anti-piracy and anti-terrorism patrols in the Strait of Malacca and adjacent waters.

The Inadequacy of Current Institutions for Regional Cooperation

To date, frameworks for regional cooperation such as ASEAN, the MRC, and the GMS cooperative development program have largely failed to deal with environmental and human security threats. Southeast Asian interlocutors express dismay over ASEAN’s continued commitment to the “ASEAN way” of consensus decision making and polite discourse. Indonesia, the main source of haze from forest

and peat burning, has not even acceded to the 2002 ASEAN Agreement on Transboundary Haze Pollution.

With regard to the rush to build hydroelectric power dams, the member countries of the MRC have refused even to provide transparency regarding their dam projects, let alone cooperate for the environmentally sustainable and equitable development of hydropower. Myanmar (Burma), with extensive hardwood forests and large reserves of fossil fuels and hydroelectric power potential, effectively remains outside any regional cooperation framework.

Interlocutors from the Philippines and Indonesia expressed serious concern about the rapid depletion of marine life and the destruction of coral from offshore drag nets used in commercial-scale fishing, the use of dynamite and cyanide for in-shore fishing, and pollution. The Coral Triangle includes the 200-mile EEZs of six countries—Indonesia, East Timor, the Philippines, Malaysia (the states of Sabah and Sarawak on Borneo), Papua New Guinea, and the Solomon Islands. Some call the area the “epicenter” of global marine life productivity and biodiversity. Under the Coral Triangle Initiative (CTI), proposed by Indonesia and launched at the 2007 APEC meeting in Sydney, the six countries committed to cooperate to preserve the coral reefs. However, while the CTI calls for a number of specific actions, it has no mechanism for cooperation or holding countries accountable for their commitments.

PROSPECTS

The prospects for near-term improvement in the unsustainable consumption of natural resources and the attendant socioeconomic and sociopolitical impacts are not at all promising. To date, efforts to promote cooperation on the environment and sustainable development have been largely undermined by the litany of limitations—inadequate governance and human capacity, corruption, nationalism, and a single-minded focus on resources-based economic development. Most trend lines are going in the wrong direction.

Because of the major share of both carbon sources and carbon-absorbing forests and seas in mainland Southeast Asia and the Malay Archipelago, the region will continue to be a major contributor to global warming. By one calculation, 30 percent of the world’s sequestered carbon is locked up in Indonesia’s widespread peat bogs. The dry-season burning of these bogs not only eliminates their absorptive role, but releases the most concentrated sources of carbon into the atmosphere.

Understanding of transboundary and NTS issues remains narrowly located among regional intellectual elites. Some of them remain more focused on securitizing the issues than on the human security dimension, but in general there has been considerable growth in parallel regional intellectual communities with expertise in specific NTS issues. NGOs have growing visibility, but in the less developed countries especially, they still receive little positive attention from governmental policy makers.

The prospect for positive action in the medium term could be more promising if only because the impacts of unsustainable development practices and global warming are becoming increasingly apparent. In time, the warnings of environmentalists and advocates of human security may be based on demonstrable evidence. By that time, however, Southeast Asian societies may have undergone wrenching and possibly destabilizing adjustments. The Mekong Delta, for instance, may shrink drastically and no longer serve as Vietnam's "rice basket" and export earner.

Some trends cause knowledgeable Southeast Asians great anxiety. These include the still rapid growth of fish farming on every feasible bit of coastline. Similarly, deforestation and environmentally and socioeconomically unsustainable dam construction seem unstoppable, at least until—as in Thailand—only small stands of forest are left for national parks and nature preserves and all of their rivers have been dammed.

One especially troubling aspect of this gloomy scenario is that most of the countries that depend on the exploitation of natural resources for development simply do not have the necessary other-factor endowments or a sufficiently educated workforce to reach Thailand's level of prosperity—especially since Thailand itself has prospered to a significant degree because of its exploitation of its economic hinterland, in the territory of its less developed neighbors.

In both the medium and the long term, the question is whether political leaders and bureaucratic decision makers will be able to understand the science and other practical aspects of the problem and take action. Another major question is whether there are sufficient time and resources to make major course corrections before tipping points are reached, beyond which new paradigms for societies and economies will evolve of necessity.

It would be helpful if the multilateral development banks could play a stronger role in promoting sustainable development. Unfortunately, the MDBs worldwide continue to put most of their resources into infrastructure development, and their environmental and human capacity-building efforts are playing a losing game of catch-up.

Apart from the environmental and global warming threats, there is also a distinct possibility that what are currently viewed as nontraditional security issues could become sources of traditional conflict. For instance, with the melting of the snow and ice cap in the Tibetan Plateau, coupled with the uncoordinated development of hydropower dams on major Mekong tributaries in Laos and Vietnam, there simply may not be enough water to go around. Likewise, future conflict in the South China Sea over fisheries and seabed resources is well within the realm of possibility. Moreover, if the deterioration of human security and resources scarcity should exceed the capacity of some countries' "social contracts," the resulting political upheaval could generate nationalistic impulses that might be difficult to manage within the existing regional framework.

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