

# Environmental Impact Assessments in Developing Countries: An Opportunity for Greater Environmental Security?

*Jennifer C. Li*

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## Introduction

The Environmental Impact Assessment (EIA) process, which originated in the United States in the late 1960s and early 1970s, has been adopted extensively in the rest of the world. The U.S. model and that of other developed countries share basic principles and reflects commonly agreed-upon approaches to similar problems.

While EIAs in developing countries are based on the same set of principles, their implementation often falls considerably short of international standards. They frequently suffer from insufficient consideration of impacts, alternatives, and public participation. In the worst case, they are not conducted at all.

This is particularly troubling given that environmental impact assessments often are the chief and most comprehensive means for assessing the potential environmental and social impacts of large-scale development projects in countries where environmental safeguards are weak due to deficiencies in regulation, enforcement, or both. Moreover, these inadequacies may have serious implications in many areas of the developing world, where an ambitious line-up of major projects is being developed.

The first half of this *Working Paper* will give a background of the origins and development of environmental impact assessments. The second half of the paper will focus on environmental impact assessments in Southeast Asia, specifically the Mekong River Basin countries (China, Laos, Cambodia, Thailand, and Vietnam), a region where many new projects will be located in the near future, and which suffers from notable inadequacies in its EIA processes and practices. The goal is to help identify gaps between EIA practices in the five countries listed above and internationally recognized best practices.

Ample evidence suggests that in the Mekong region the environmental and socioeconomic impacts of many projects have not been assessed adequately despite the use of EIAs. The paper presents the characteristics and flaws of EIAs in each country, and argues that if such deficiencies are allowed to continue, the region is likely to see more frequent and serious environmentally induced conflicts. Improving EIAs and increasing transnational collaboration in implementing them not only will help to prevent or mitigate conflict but also may enhance transnational environmental management.

## The EIA Process

The EIA process has several important purposes. It is first and foremost a decision-making aid to prevent projects with strongly negative environmental impacts from going forward. The emphasis in EIAs, in contrast with other mechanisms for environmental protection such as a cost-effectiveness analysis, is on a systematic, holistic, and multidisciplinary assessment of the potential impacts of specific projects on the environment. EIAs also are meant to help inform development decisions by mandating a consideration of alternatives (including alternative project locations, scales, processes, layouts, operating conditions, or in some cases, the option of desisting from implementing a project) and ways to prevent, mitigate, and control potential negative environmental and social impacts. The process generally involves a number of steps, including project screening, scoping, an EIA report (consideration of alternatives,

identification of major impacts, and mitigation measures), public participation, review, decision, and monitoring. See Appendix 1 for more details.

In most countries, developing countries included, there are laws to facilitate public involvement and expert consultation in the EIA process. In the best cases, input is sought during both the initial stage of reviewing core issues and the later stages involving consideration of alternatives, impacts, and initial EIA findings. Moreover, beyond evaluating specific projects, more comprehensive environmental assessment increasingly is considered a necessary part of a nation's pursuit of sustainable development at all levels of decision making.

The kinds of projects covered by EIAs have been widening. In general, an EIA has been applied to undertakings defined as "major projects" based on the level of investment, type of activity, scale of activity, land area covered, potential environmental impacts, or a combination of these factors. See Table 1.

**Table 1.** Characteristics of Major Projects

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| <ul style="list-style-type: none"> <li>• Require substantial capital investment.</li> <li>• Cover large areas.</li> <li>• Employ many people, either in project construction or operation.</li> <li>• Involve a complex array of organizational links.</li> <li>• Have wide-ranging impacts, in terms of size of area affected and type of impact.</li> <li>• Cause significant environmental impacts.</li> <li>• Require special procedures such as public inquiries and special bills approved through the legislative process.</li> <li>• Involve certain types of activity, including manufacturing and extractive projects, such as petrochemical plants, steelworks, mines, and quarries; service projects, such as leisure developments, and out-of-town shopping centers; and utilities and infrastructure, such as power stations, roads, reservoirs, pipelines, and barrages.</li> <li>• Anticipate high production levels.</li> </ul> |
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*Source:* Glasson et al. 2005; CEC 1982.

The country with the longest experience with EIAs is the United States, where EIA legislation was passed in 1970. Elsewhere, EIA procedures are considered the strongest in Canada, Australia, New Zealand, and the Netherlands, where there is a robust track record of public participation, meaningful consideration of alternatives, and the consideration of cumulative impacts.

Taking a broader view that includes the relationships of EIAs to "a larger set of impact assessments and planning-related tools" (Sadler 1999), Table 2 lays out a summary of international best and worst-case environmental assessment (EA) performances.

**Table 2.** Summary of International Best and Worst-Case EA Performances

<p><b>Best-case performance</b></p> <p>The EA process:</p> <ul style="list-style-type: none"> <li>• Facilitates informed decision making by providing clear, well-structured, dispassionate analysis of the effects and consequences of proposed actions.</li> <li>• Assists the selection of alternatives, including the selection of the best practicable or most environmentally friendly option.</li> <li>• Influences both project selection and policy design by screening out environmentally unsound proposals, as well as modifying feasible action.</li> <li>• Facilitates meaningful public engagement and review in at least two stages of the process: once when scoping the impacts and issues to be considered, and again during the presentation of initial findings of the EIA, including a non-technical summary.</li> <li>• Encompasses all relevant issues and factors, including cumulative effects, social impacts, and health risks.</li> <li>• Directs (not dictates) formal approvals, including the establishment of terms and conditions of implementation and follow-up.</li> <li>• Results in the satisfactory prediction of the adverse effects of proposed actions and their mitigation using conventional and customized techniques.</li> <li>• Serves as an adaptive, organizational learning process in which the lessons experienced are fed back into policy, institutions, and project designs.</li> </ul> <p><b>Worst-case performance</b></p> <p>The EA process:</p> <ul style="list-style-type: none"> <li>• Is inconsistently applied to development proposals with many sectors and classes of activity omitted.</li> <li>• Operates as a “stand alone” process, poorly related to the project cycle and approval process and consequently is of marginal influence.</li> <li>• Has a non-existent or weak follow-up process, lacking surveillance and enforcement of terms and conditions, effects monitoring, etc.</li> <li>• Does not consider cumulative effects or social, health, and risk factors.</li> <li>• Makes little or no reference to the public or public consultation is perfunctory, substandard, and takes no account of the specific requirements of affected groups.</li> <li>• Results in EA reports that are voluminous, poorly organized, descriptive, and overly technical.</li> <li>• Provides information that is unhelpful or irrelevant to decision making.</li> <li>• Is inefficient, time consuming, and costly in relation to the benefits delivered.</li> <li>• Understates and insufficiently mitigates environmental impacts and loses credibility.</li> </ul>
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*Source:* Sadler 1996; Glasson et al. 2005.

One of the most important challenges for EIAs is the assessment of cumulative impacts. Cumulative impacts and changes to the environment are those that are “caused by an action in combination with other past, present, and future human actions” (Odum 1982). Cumulative impacts are important because many projects might pose minor risks to the environment in and of themselves but pose a significant risk to the environment in combination with other

activities (Odum 1982). New Zealand and Canada both mandate a cumulative impact assessment as part of the EIA. Canada and the United States have produced a manual for conducting cumulative effects assessments based on what are considered to be the best prior assessments. The consideration of cumulative effects is mostly absent in the developing world (Glasson et al. 2005).

Countries with longer experience and more advanced EIA practices tend to include a standard set of components in their EIAs, while EIAs in developing countries often fail to include certain elements. Comparing and contrasting EIA processes in selected advanced and developing countries brings out this fact and highlights the deficiencies in the latter. In developing countries, EIAs most often lack a public announcement or “notice of intent” advising about the imminent preparation of an EIA, a well-designed process for involving the public, and post-EIA monitoring. Appendices 2, 3, 4, and 5 provide flowcharts reflecting these differences in the United States, the Netherlands, China, and Thailand, respectively.

It is necessary to note, however, that even those countries implementing EIA best practices still have a long way to go with regard to the incorporation of indirect impacts, the interaction of impacts, and the uncertainty of predicted impacts (Glasson et al. 2005). However, both developed and developing countries have continued to improve, harmonize, and increase the coherence of EIA practices. The European Union member states, for instance, have completed two five-year reviews of the 1985 EU Directive for EIAs; a third review commenced in 2003. The objective of the reviews is both better environmental protection and greater harmonization.

There also have been international efforts to encourage the adoption of EIAs in developing countries, including numerous cross-country training and capacity-building activities. Such efforts include the EIA Capacity Building Program of United Nations Environment Program; the EIA training component of the Support to Human Resources Development for Sustainable Agriculture and Rural Development Project of the UN Food and Agriculture Organization; the Environmental Training program of the U.S. Environmental Protection Agency (Luecht 2007); and environmental assessment training organized by the World Bank (World Bank 2006).

Issues still debated worldwide with respect to EIAs involve scope, quality, methods (e.g., how to capture and integrate complex interactions), public participation, and actions after the decision stage (e.g., monitoring of impacts, thus far required only in California and Western Australia) (Glasson et al. 2005). Much of the debate is driven by political factors, although in the case of developing countries, capacity issues also have limited greatly the scope and application of EIAs. In general, however, there is a worldwide trend toward undertaking EIAs earlier in the development process, making them mandatory in a greater number of cases, applying them to a wider range of projects, increasing their comprehensiveness, and making them more integrative and open (Gibson 2002).

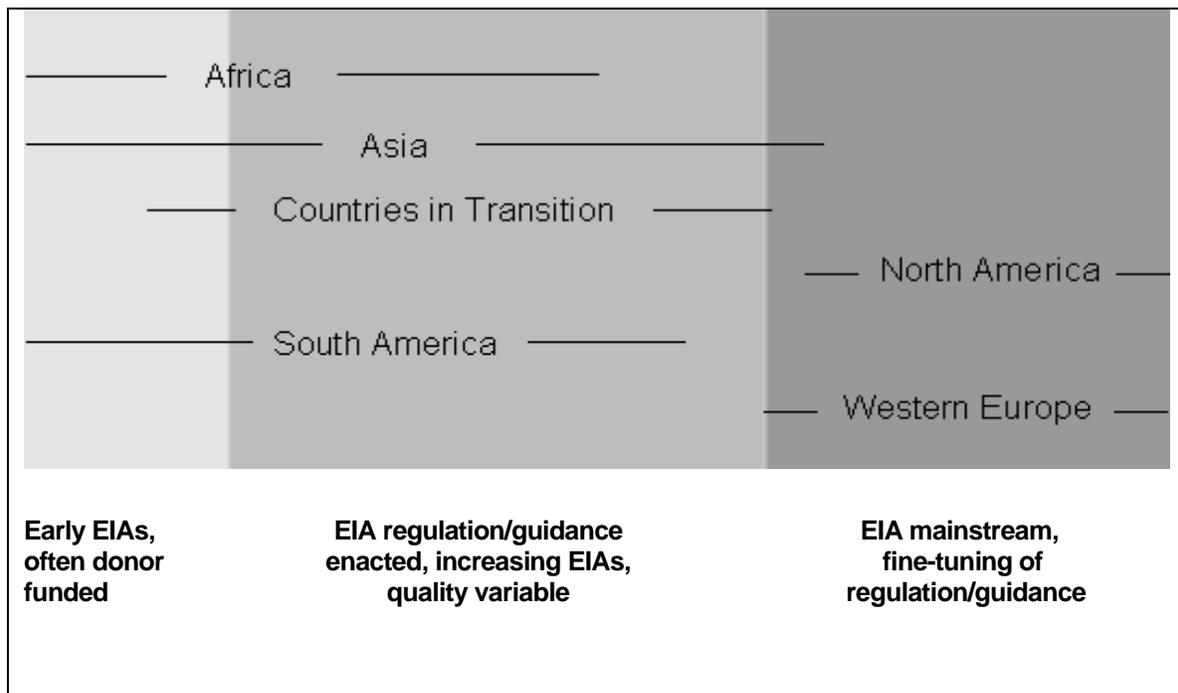
### **Summary of EIA Status Worldwide**

The field of environmental impact assessment has been evolving rapidly worldwide. Figure 1 compares the relative status of EIA by continent (Glasson et al. 2005). By the end of 2005,

more than 100 countries had some form of EIA regulation, although EIA practices vary widely across countries.

In Africa, many countries have instituted EIA regulations, albeit relatively recently. The adoption of EIAs in Africa is the result of a number of recent initiatives, including the 1995 African Ministerial Conference on Environment that committed African environment ministers to formalize the use of EIAs, an EIA stakeholders meeting in Nairobi in 1998, and the work of the Pan-African Initiative for Capacity Development and Linkages for EIA in Africa (CLEIAA).<sup>1</sup>

**Figure 1.** Current Status of EIA Systems Worldwide



*Source:* Glasson et al. 2005.

In general, however, EIAs in Africa still appear plagued by a lack of trained personnel, inadequate budgets, and the concern that EIAs might hold back economic development (Kakonge 1999).

All countries in South and Central America have environmental protection legislation that includes requirements for at least some aspects of EIAs. Specifically, in South America the development of EIAs has been hampered by political instability, inefficient bureaucracy, economic stagnation, and external debt (Brito and Verocai 1999). According to Glasson and Salvador (2000), EIA in South America often is carried out after a project has been authorized and with little or no public participation.

The former communist states in central, eastern, and southeastern Europe and the republics of the Former Soviet Union (FSU) have been through 15 years of enormous changes, including the move from centrally planned to market-based economies. Many also experienced an

economic crisis in the 1990s as part of this process. Environmental protection was not the highest priority for these countries at a time of radical transformation and crisis. However, as the central and eastern European countries move toward EU accession, they are working to harmonize their EIA legislation with the European Directives of 1985 and 1997. The countries of Southeastern Europe—Albania, Bosnia and Herzegovina, Croatia, Kosovo (UN administered territory), Macedonia, Montenegro, and Serbia—have relatively less developed EIA systems, but they also are starting to harmonize their EIA legislation with that of the EU (Dalal-Clayton and Sadler 2004; Glasson et al. 2005).

The FSU republics all inherited similar systems, based on the “state ecological expertise/review system” (SER), in which the environmental review process is undertaken either directly by the responsible environmental authority or through an appointed committee of experts (Cherp and Lee 1997; Rzeszot 1999; World Bank 2002). More recently, the FSU countries established EIA requirements (called OVOS or assessment of environmental impacts) alongside the SER system. Based on an extensive review of the evidence, Dalal-Clayton and Sadler (2004) concluded that although some of the FSU republics have improved their SER/OVOS systems compared to Soviet-era procedures, the environmental assessment systems of the majority of the Newly Independent States (NISs) suffer from lack of implementation and outdated residual legislation (Dalal-Clayton and Sadler 2004).

EIA regulations were established in most Asian countries in the 1980s and 1990s. The Asian countries vary in terms of legislation, ranging from none (Myanmar), to very recent and not widely applied legislation (Laos and Cambodia), to extensive and robust EIA regulation set within a broader planning framework (Japan, Hong Kong, South Korea).

Clive Briffett (1999) asserts that many EIAs in the poorer Asian countries are of inadequate quality, with poor scoping, poor impact prediction, and limited public participation. This is largely attributed to the fact that most of these countries are preoccupied with economic growth, and EIAs are considered potential brakes on economic growth. Additionally, EIAs are believed to discourage large infrastructure projects that are symbols of economic wealth (Briffett 1999).

### **Diffusion of EIAs**

The spread of EIAs into less developed countries primarily is the result of external pressure by international conventions, international environmental organizations, the international donor community, and the international science community.

Ann Hironaka (2002) measures the distinct impact of such factors through a multiple regression analysis and finds that each of these influences is highly significant in explaining the adoption of EIA legislation in developing countries. Hironaka argues that, by comparison, domestic drivers for the adoption of better environmental protection have been relatively weak. That is due mainly to impoverished and uninformed citizenries and, in some cases, political repression. She concludes that because EIAs have been introduced into developing countries largely as a result of an internationally driven and mostly top-down process, they have been adopted more as a standardized, bureaucratized, procedural formality than as a real solution for intertwined environmental and socio-economic problems.

Hironaka's study explains the adoption of EIAs in the Mekong River Basin countries well. There, multilateral and bilateral aid organizations (specifically the World Bank and the Asian Development Bank) have played a key role in bringing in EIA practices (Komatsu 1998). To some extent, this is to be expected as these organizations fund or implement many large-scale projects that pose considerable risk to the environment. In recent years, partly in response to continuous criticism from environmental NGOs, international lender organizations like the World Bank and the ADB have developed and harmonized their EIA procedures and guidelines to reduce impacts on the environment. They also have been involved in capacity-building for the implementation of EIAs in this region and elsewhere.

### **EIA and Mekong River Basin Countries**

The Mekong River Basin countries are China, Myanmar, Laos, Thailand, Cambodia, and Vietnam. As in other parts of the world, EIA systems and laws have been developed and implemented gradually across the region. EIA systems date from the early 1980s for China and Hong Kong, the 1990s for Thailand, Vietnam, and Cambodia, and 2000s for Laos. Little information is available for Myanmar; however, it is believed that no EIA legislation exists in the country.

Since their inception, most of the region's EIA regulations have been amended to expand coverage, enhance administration and public participation, and improve enforcement. The main features of these systems, including legislation, coverage, consideration of alternatives, public consultation, disclosure, and timing are summarized in Table 3. China, and to some extent Vietnam, have incorporated environmental assessment into higher levels of decision making, including policy and planning.

Implementation of EIAs in the Mekong region is very often too late, commencing when the major project decisions (including site, design, and construction preparation) already have been made, thereby rendering the EIA a mere formality. EIAs in the region also have been depicted as an exercise in rationalizing predetermined outcomes, rather than a means for providing independent and rigorous analysis upon which sound decisions are based (Manorom 2007).

Many observers have attributed these problems to a lack of political will reflected in asymmetries in institutional power (Tan 2004; Bruch et al. 2007). The environmental authority overseeing the EIAs frequently is under or politically inferior to and/or financially dependent upon another government institution or private proponent of the project. Furthermore, EIAs are often regarded by key decision makers at various levels of government as a disincentive to potential investors. A general preoccupation with economic performance in the Mekong countries frequently leads to trading longer-term environmental benefits for short-term economic gains.

When EIAs are implemented in time, an underestimation of social and environmental costs has been the norm, which in turn has led many local communities, NGOs, and academics to mistrust and question the validity of EIAs in the region (Manorom 2007). This underestimation is at least in part the outcome of insufficient incorporation of local perspectives on anticipated costs and benefits of projects. Public consultation and information

**Table 3. Summaries of Criteria of the EIA Systems in the Region**

Country	Law/ Regulation	Issued date	Oversight institution	Scope/ coverage	Alternatives study	Public participation	Information disclosure	Clearance timing	Certification of consultants	Follow-up monitoring
Cambodia	Sub-decree on EIA	1999	Ministry of Environment	Project	N/A	General statement in the regulation	N/A	60 days	N/A	N/A
China	EIA Law	2002	National Environmental Protection Administration (NEPA)	Plan and project	Stipulated in technology guidance	General statement in the regulation	N/A	60 days	In place	Required
Lao PDR	EIA Decree No. 1770	2000	Science, Technology and Environment Agency (STEA)	Project	Stipulated in regulation	Strict and concrete requirements in the regulation	Stipulated in regulation	100 days	N/A	Required
Thailand	NEQA, B.E.	1992	Ministry of Natural Resources & Environment (MONRE)	Project	Stipulated in technical guidance	General statement	No provision in current regulation	75 days (for privately funded projects)	N/A	N/A
Vietnam	Decree 175/CP	1994	Ministry of Science, Technology & Environment	Plan and project	Stipulated in the regulation	General statement	No provision in current regulation	60 days	N/A	N/A

Source: World Bank 2006.

disclosure aspects of the EIA process are particularly weak in the Mekong region despite the fact that the principles behind them are well expressed in the legal stipulations of almost all of the countries, Myanmar being the exception. Some observers (Glasson et al. 2005; Williams and Weale 2006) have attributed this to a tradition of top-down decision making. Others have cited citizenries that lack information and understanding about the process and the disincentive for participation when no actions are taken in response to issues raised by the public (Hironaka 2002; Buckley 2006).

Some observers also have noted that community or public representation by NGOs without direct involvement of affected communities often does not fully articulate or represent the interests of those communities. This has led to the “People’s EIA” approach, which aims to facilitate greater local and public participation in the EIA process by “creating a space where local people can frame and articulate their needs, values, and priorities” (Stærdahl et al. 2004; Thongchai and Pantumsinchai 2004; Manorom 2007).

Thus far, this framework has been applied only in the Hua Na irrigation project in Thailand, but its potential seems great. For the irrigation project, the process began with the establishment of a grassroots committee comprising local villagers and local academics to gather information from and provide information to the local villages. The framework or mechanism proved able to incorporate both local and scientific knowledge. For example, by overlaying community natural resource maps with project study maps, it was possible to determine the extent of impact from inundation if the dam were built. As a result of such deliberations, the local community and public were well informed about the potential impacts of the project and could voice their objections, leading to the project being put on hold (Manorom 2007).

Lack of coordination among governmental agencies for EIA implementation occurs at the central government level and between central and local government levels in the Mekong region. In the cases of Cambodia, Thailand, Vietnam and, to a slightly lesser extent, China, the authority bestowed upon the environment ministry as the responsible body for formulating and implementing the EIA often is trumped by more powerful, often sectoral, ministries such as the Ministry of Agriculture, Forestry, and Fisheries in Cambodia; the Ministry of Agriculture and Cooperatives in Thailand; the Ministry of Planning and Investment in Vietnam; and the National Development and Reform Commission in China (Zhang 2007). As many projects involve multiagency supervision, effective coordination for implementing EIAs is rare. In addition, a lack of coherence between the practices advocated by the EIA appraisal body at the central government level and the actual practices at the local level seems to plague China and Vietnam (Wang et al. 2003; Tan 2004).

Resource limitation also plays a significant role in explaining the lack of EIA implementation, particularly in the poorer countries where the concerned government agencies lack funds to regularly collect baseline data and information about the current state of their environment and natural resources. A lack of qualified staff in government agencies also hinders EIA implementation in the Mekong region (Tan 2004).

## Country Case Studies

What follows is a more detailed, country-by-country look at the EIA systems in the Mekong basin countries.

### *China*

In China, EIAs are part of the Environmental Protection Law that was adopted provisionally in 1979 and finalized in 1989 (Wenger et al. 1990). In 2002, the stand-alone Environmental Impact Assessment Law was passed and became effective as of September 1, 2003. Accordingly, an EIA is required for any project that can have negative environmental impacts, regardless of which sector the project may fall under (e.g., agriculture, industry, forestry, energy, water, transportation, urban development, tourism, or natural resources). Projects with foreign capital face the same environmental management requirements as those undertaken using domestic funds.

An EIA in China must contain the following information:

- Project summary,
- Environmental status of the project site,
- Impacts of the project on the surrounding environment,
- A cost-benefit analysis of the environmental impacts,
- Recommendation of responding environmental protection measures,
- Technical and economic comments on the feasibility of environmental protection measures, and
- Measures to maintain water and soil quality when applicable (Zhong 1999; XinhuaNet 2002).

Ensuring consistency and quality in the EIAs is complicated by the trend toward greater decentralization, allowing local governments more discretion in interpreting national legislation and regulations to suit local situations and meet local needs. However, local governments face two major economic disincentives in implementing EIAs: lack of funding to oversee EIAs and a need to compete for investments.

The quality of EIAs at the local level also suffers from a lack of qualified, licensed EIA assessors. Unlike large-scale projects, there is usually no competition among qualified EIA assessors in the bidding process for smaller projects. A limited number of licensed EIA assessors creates an inherent conflict-of-interest problem in which the few licensed EIA assessors or contractors favor the position of the developer in their assessment in order to win business on the developer's future projects (Wang et al. 2003).

The EIA Law passed in 2002 has specific requirements for public participation under Articles 11 and 21. Public hearings or other forms of public consultation are required to get community and expert feedback on a project or construction that is likely to have environmental impacts, with the exception of "projects of confidentiality according to national code." Despite the explicit requirements of Articles 11 and 21, scholars observed that public participation in EIA processes was still very limited (Wang and Dien 2005). This was attributed to three main factors: the Chinese institutional context, lack of funds, and the large population.

The institutional context refers to a lack of legal infrastructure for civil participation despite recent laws, policies, and talks to encourage such participation. For instance, even though there are policies that protect the rights of local farmers to voice concerns and defend their rights, the Chinese legal system does not provide channels for exercising these rights. Villagers in most communities in China lack formal education and are unfamiliar with concepts such as due process. Many villagers do not even know what a lawyer is, according to Li Bo, who is the head of the Center for Biodiversity and Indigenous Knowledge, one of the few influential environmental NGOs in China (Buckley 2006).

To date, public participation is inadequate or nonexistent in spite of the fact that the Chinese government passed two new laws concerning public participation (one in 2004 and another in 2006) to supplement the 2002 EIA law. In the “Interim Measures on Administration Permission Hearings for Environmental Protection,” promulgated by the State Environmental Protection Administration (SEPA) in 2004, the procedure for public involvement in the EIA was laid out in greater detail than what was specified in the 2002 law. The new regulation specifies who can appoint the chair of EIA hearings, eligibility requirements for organizing a hearing, and procedures on how to organize a hearing. The 2004 law also provides an official channel for the public, especially those who are directly affected, to voice their concerns (Wang and Dien 2005). In addition, the new “Interim Measures on Public Participation for Environmental Impact Assessment,” passed in 2006, extends the scope of public participation to cover projects that were delayed for more than five years and projects that have undergone a major change in terms of scale, location, process, and/or environmental safeguards.

Both the 2004 and 2006 supplementary laws were precipitated by the large and growing number of environmental disputes; severe pollution prompted some 51,000 public disputes in 2005, which “caused a great threat to social stability,” according to SEPA (Xinhua News Agency 2006; Beech 2006; Agence France-Presse 2006). It is perhaps relatively early to judge whether these laws have benefited local community interests, but thus far most scholars agree that no significant change in public participation in the EIA process has occurred (Wang and Dien 2005; Zhu and Sun 2007).

Recently, there have been a few positive signs with regard to EIAs in China. First, two environmentally and socially controversial projects were suspended pending improved EIAs, including a paraxylene chemical project in Xiamen and a high-speed magnetic levitation train project linking Shanghai and Hangzhou (Xinhua News Agency 2007a; 2007b). Soon after the suspensions, the vice-minister of the SEPA, Pan Yue, speaking at an urban management symposium in Beijing, emphasized the importance of having a formalized mechanism for involving the public in the EIA process. Pan recognized that a systematic process for involving the public in environmental assessments is still missing in China. He cited an environmental governance project by the World Bank as a good model for China to follow. This World Bank project, which began in 2000 and has been applied to Jiangsu and Hebei Provinces, is said to have encouraged multistakeholder involvement and improved the transparency of local policymaking (Zhu and Sun 2007).

Since 2005, SEPA also has sought to enforce EIA laws through an administrative measure called regional permit restrictions. In China, cities and national power-generating groups are authorized

to approve EIAs. The regional permit restrictions have led to a number of suspensions of such rights. To restore such rights, the cities had to bring their new construction projects into compliance, while the national power-generating groups had to bring their existing facilities into compliance. Thus far, the regional permit restrictions seem to have been effective (Zhang 2007).

### *Cambodia*

The legal requirements for EIAs in Cambodia are set out in the 1996 Law on Environmental Protection and Natural Resource Management (Chapter III) and the 1999 Sub-Decree on Environmental Impact Assessment.

As illegal logging is the most important environmental issue in Cambodia, the EIA laws were established in large part to help improve forestry management. Additionally, several laws were enacted in the early 2000s pursuant to conditions relating to land use and forest reform laid down by the World Bank for the release of Structural Adjustment Credit loans. These include a moratorium against logging announced in January 2002, the 2002 Forestry Law, and the Community Forestry Sub-Decree in 2003. The 2002 Forestry Law prescribed new EIA requirements and provisions for private sector and community participation in forestry. The 2003 Sub-Decree granted local communities the legal right to manage traditional forests and set terms for community-based forestry management.

In reality, however, the implementation of these laws has been ineffective, as evidenced by the continued and massive illegal logging occurring in protected forest areas. It is rumored that illegal logging by companies persists because of the backing of some powerful politicians. While the Forestry Law requires concessionaires to produce Strategic Forest Management Plans and Environmental and Social Impact Assessments, the government has reportedly been willing to accept assessments of extremely low quality by allowing, in some instances, recycled assessments. The lack of EIAs in the forestry area despite the string of new laws also is attributed to inherent weaknesses in the new Forestry Law and a flawed institutional framework. The new Forestry Law contains a major weakness by making no distinction between “natural” and “planted” forests (Tan 2004). This leads to a loophole through which logging companies can simply claim to be engaging in reforestation when they first destroy villagers’ community forests, grazing land, commons, and fallows and then replace them with fast-growing trees that are often of alien species.

The Ministry of Environment (MoE), which is in charge of environmental assessments, has remained a relatively powerless agency in natural resource matters, especially when compared to the Ministry of Agriculture, Forestry, and Fisheries. This is not helped by the fact that the 1999 Sub-Decree on EIA lists “other government agencies” as stakeholders in the EIA process (along with community representatives and NGOs) who can openly challenge an EIA. The role of the MoE is especially minimal in the forestry sector, where environmental assessments are most needed (World Bank 2006). The agency that is authorized to oversee the implementation of the Forestry Law and the 2003 Sub-Decree on EIA is the Ministry of Agriculture, Forestry, and Fisheries, a ministry with a track record of pro-development policies in the forestry sector (Tan 2004).

With respect to public participation, public involvement is “encouraged” in the EIA decree (Article 1) but no concrete requirements are stipulated. Additionally, the decree contains no requirements for consideration of alternatives or information disclosure (World Bank 2006).

### *Laos*

Environmental legislation, regulations, and guidelines were developed relatively recently in Laos, although the Lao Constitution of 1991 already acknowledged the need for environmental protection, requiring that “environmental assessments give particular attention to the assessment of potential positive and negative socio-economic impacts of project development” (World Bank 2006). The Law on Environmental Protection, passed by the National Assembly in 1999, was elaborated in 2002 by an implementation decree. The resultant provisions require that all projects and activities with potential environmental impacts (including social impacts) go through an assessment process prior to approval and implementation. Article 8 of the provisions, however, allows the relevant ministries to develop their own EIA guidelines and standards, thus allowing the assessment process to vary by ministry.

The most significant EIA guidelines thus far were developed in late 1999 when the Science and Technology Environment Agency (STEA), established directly under the prime minister's office after the Earth Summit in 1992, advised the Ministry of Industry and Handicraft (MIH) to develop and implement EIA regulations for hydropower projects. The MIH followed up with the Regulation on Implementing Environmental Assessments for Electricity Projects, the Environmental Management Standard on EIA for Electricity Projects, and the Draft Social Impact Assessment for Electricity Projects in Laos. According to a recent World Bank survey of EIA practices in Southeast Asia, EIAs can be considered the centerpiece of environmental management in Laos (World Bank 2006).

Laos requires EIA documentation and protocols similar to other developing countries, including the requirement for public involvement. Specifically, the EIA report must include a description of the existing socio-economic and natural environment in the potential area(s) affected by the project. The report also has to identify and describe the environmental, social, and economic impacts of the project, and compare them to the impacts of one or more feasible alternative scenarios. The following language, however, seems to contradict the general intent of assessing potential social impacts of projects: “Impacts concerning culture, landscape, gender and climate are not explicitly included in what needs to be identified and described in the EIA” (World Bank 2006).

With regard to public involvement in the EIA process, three parties are jointly responsible; the STEA, the agency directly responsible for the project, and the project developer.<sup>2</sup> The fact that public involvement is the joint responsibility of three entities could be potentially problematic, as the coordination alone could be daunting. Meaningful public involvement also might be hampered by the difficulty in assigning accountability.

In Laos, there are stipulations for continuous project monitoring and evaluation by the overseeing environmental unit, a practice unparalleled in the region. Monthly reports are produced and shared with STEA at the national level as well as with its regional and local

offices and the environment management and monitoring units of other relevant ministries (World Bank 2006).

While the legal stipulations for EIAs in Laos compare well with those of countries that engage in best practices in this area, the real test is their actual implementation in relation to an ambitious series of hydropower projects. In general, the consensus seems to be that the actual implementation of EIAs has been weak.

The EIAs conducted for a series of hydro projects prior to 1999 were considered highly inadequate by international environmental NGOs, especially the International Rivers Network (International Rivers Network 1999). These included the EIAs for the Nam Theun-Hinboun hydropower project, the Nam Leuk hydropower project, the Nam Theun 2 hydropower project, the Houay Ho hydropower project, the Xie Pain-Xe Namnoi hydropower project, and the Xe Kaman 1 hydropower project. The more recent EIAs do not appear to have blazed a new trail. There are a huge number of hydropower and transmission projects being planned that either have not been accompanied by an EIA or have had some sort of assessment with no public input or community involvement (Lao National Committee for Energy n.d.; Hubbel 2007).

#### *Thailand*

In Thailand, the environmental protection effort was bolstered in 2002 by the creation of the new Ministry of Natural Resources and Environment (MNRE). Previously, environmental functions were exercised by the Ministry of Science, Technology and the Environment. In October 2003, one of the main government agencies in charge of the environment, the Office of Environmental Policy and Planning, was formally reconstituted under the MNRE as the Office of Natural Resources and Environmental Policy and Planning (ONREPP). One of ONREPP's most important tasks is to review EIAs required under the law.

As in the case of Cambodia, the Thai ministry in charge of environmental protection and EIA implementation is weaker than other ministries. The MNRE has sought to establish its credentials and influence within the government vis-à-vis powerful sectoral ministries more predisposed toward natural resource exploitation. An example is the conflict between the Ministry of Agriculture and Cooperatives (MAC) and the MNRE over issues of logging and forest protection (Tan 2004).<sup>3</sup>

The recent controversy over how to deal with abandoned teak wood from illegal logging attests to this. MAC's position was that these logs should be auctioned, while MNRE objected to auctioning as this would only encourage illegal loggers to engage in more depredations. Since the logs were illegally felled in national parks and wildlife sanctuaries that are within MNRE's purview, MNRE would seem to have the authority to determine the outcome of the logs. However, that did not prove to be the case.

The EIA process overseen by ONREPP is subject to the institutional power struggle highlighted above. The EIA process in Thailand also suffers from other weaknesses. For example, only state-funded projects are required to go through the more rigorous process (Stærdahl 2004). Moreover, the scope of projects covered by the EIA process is considered

too narrow in regard to both the scale and the type of projects to which it is applied (Stærdahl 2004; World Bank 2006). Additionally, the process is extremely time-consuming, with some attributing it to the limited resources of ONREPP. MNRE also is widely perceived as weak in monitoring the environmental mitigation plans, facilitating public involvement, and hiring qualified consultants (Tan 2004). The lack of public involvement has been attributed to the tight government-controlled process where the review of EIA studies remains the prerogative of government agencies and government appointed-committees, with extremely limited avenues for genuine public participation. This is true with respect to both public and private sector projects (Manorom 2004; World Bank 2006).

EIAs for high-profile projects such as the Thai-Malaysian gas pipeline, the coal-fired power plants in Prachuap Khiri Khan, and the potash mining activity in Udon Thani are reportedly of poor quality. In light of such complaints, a blacklist of questionable consultants was created. MNRE also has been trying to overhaul the EIA process by requiring greater accountability of consultants, more public participation, and adopting measures to prevent companies from resubmitting applications for projects already turned down (Tan 2004; Pantumsinchai and Panswad n.d.).

### *Vietnam*

The EIA process in Vietnam was first formulated by the Law on Environmental Protection in 1993 and later supplemented by various decrees. The main problem with the EIA process in Vietnam is that government officials and project proponents are involved only in the initial approval phase. The same level of official interest is not present in the implementation phase or when remedial measures are needed after a project gains approval.

This is, in part, due to the lack of capacity by the Ministry of Natural Resources and Environment (MNRE), established in 2002, and its local offices, to ensure compliance (Severinsson 2004; Tan 2004). At the same time, the procedures for enforcing compliance are vague, and incentives, whether of the carrot or stick variety, are largely absent. The country's criminal law, for instance, includes environmental provisions but has not been integrated into the enforcement of EIAs.

As in the case of Cambodia and Thailand, there also is a power struggle over EIAs within the government, particularly between the MNRE and the authority approving the project's budget (typically the Ministry of Planning and Investment, or MPI). Furthermore, a 1997 amendment weakened environmental consideration in relation to development projects by moving the requirement for an EIA from the earlier stage of determining project feasibility to the later stage of technical design. This allows a project to be approved *before* an EIA is conducted.

This incongruity has been attributed to the inconsistencies in two overlapping decrees governing the EIA process, with one allowing project approval before an EIA, and the other requiring an EIA before project approval. The two approaches were championed by MPI and MNRE, respectively, reflecting the competing interests of the two agencies. The resulting confusion is said to have benefited pro-development interests (Tan 2004).

This is not helped by a lack of coordination among different levels of government. The MNRE departments in charge of EIA approvals, chiefly the Department of EIA Appraisal, have poor

coordination with their provincial counterparts. The existing jurisdictional framework allows provincial authorities to approve certain projects, despite inconsistency with regulations at the national level. There also are limited opportunities for public participation and consultation in Vietnam, a problem endemic in the region as a whole.

## **The Relationship Between EIAs and Environmental Security**

### *Consequences of Poorly Executed EIAs*

As a result of the problems delineated above, examples abound of EIAs that were poorly executed or never took place in the Mekong River Basin region. In the case of the Pak Mun and Rasi Salai dams on the Mun River in northeast Thailand, entire communities lost their sources of livelihood to costly yet flawed projects (Manorom 2007). Mega projects in Laos like Nam Theun 2 and Nam Theun 3, and the 3S projects (Sekong, Sesan, and Srepok) in Laos, Vietnam, and Cambodia have involved EIAs with very limited public involvement (Hubbel 2007; Hirsch 2007).

Yet, environmental assessments at the project level are by far the principal means for assessing the potential environmental and social impacts of projects in the Mekong River Basin region.<sup>4</sup> Indeed, few countries in the region (China, and to a lesser extent, Vietnam) apply strategic environmental assessments (SEAs)—assessments that go beyond the project level—and they have begun applying them only recently.<sup>5</sup>

Given that the Mekong basin countries share the longest river in Southeast Asia, the Mekong, which begins in Tibet and flows through southwest China, Myanmar, Laos, Cambodia, Thailand, and Vietnam, there also needs to be a regional EIA process that considers the transboundary environmental, social, and economic impacts of important water-related projects. This need is particularly urgent in view of the ambitious agenda of water projects in the region and the fact that 80 to 90 percent of the basin's population relies directly on the Mekong for water and livelihoods. As an example of what already is taking place in the region in the absence of adequate transboundary environmental impact assessments, the Yunnan provincial government in China has begun building a cascade of eight dams on the Mekong river (known as the Lancang River in China). There also are multi-country efforts (China, Laos, and Myanmar in the north; Cambodia, Thailand, and Vietnam in the south) to enable larger commercial fleets to navigate the river through the removal of shoals, rapids, and reefs. Some of these developments already have caused serious ecological, economic, and even health problems in various communities, creating concerns about further deterioration of living conditions.

To date, a few transboundary EIAs, known as transboundary impact assessments (TIAs), have been generated for Mekong related projects. In general, however, these studies not only have reflected the same weaknesses of the EIAs in the region but also highlighted the complexity of intraregional political dynamics.<sup>6</sup> One example of this is the TIA conducted for the Navigation Channel Improvement Project of the Lancang-Mekong River. The EIA was prepared in 2001 by a joint group of EIA specialists from China (six representatives), Laos (three representatives), Myanmar (one representative), and Thailand (four representatives). As in the case with EIAs, the quality of a TIA can be gauged by comparing the impacts predicted by the TIA and the actual impacts of the project.

In this instance, the TIA significantly underestimated all major impacts, from water quantity, water velocity, and soil loss and erosion to socioeconomic effects. With regard to the socioeconomic impacts, the study had predicted a “positive” change for the communities when in fact there was a negative impact. The inconsistencies between the predicted and observed effects can be attributed to two factors endemic to TIAs in the region: 1) selective coverage of impact area not reflecting the actual potential impact area; and 2) a general underestimation of impacts, both environmental and, especially, socioeconomic. The TIA examined only 3 rapids for associated water velocity and flow changes, although the project involved the removal of more than 60 rapids and about a dozen scattered reefs. Even more astonishing was that based on an assessment of these three sites alone, the study concluded that “it is very clear that waterway improvement produces very small impact” (Mirumachi and Nakayama 2007). The TIA made no mention of specific social impacts on the different communities. Instead, broad predictions regarding the impacts on the quality of life of all of the communities were made by citing the advantages of increased opportunities for improving living conditions. In reality, the socioeconomic impacts included large vessels swamping anglers and hindering fishing in a major port of Thailand; illegal trade of wildlife, timber, and drugs on the Lancang-Mekong boundaries; loss of arable riverbed; and a dwindling number of fishermen in Thailand (Mirumachi and Nakayama 2007; Bruch et al. 2007).

The two TIAs for the Yali Falls Dam project on the Sesan River in Vietnam reflect a similar pattern. The Sesan River is one of the largest tributaries of the Mekong River and one of the top three rivers in Vietnam for hydropower potential. The two assessments covered only a tiny eight-by-one kilometer area downstream from the dam, thus failing to address any impacts in most of the affected area. In actuality, the dam’s environmental and socioeconomic effects extended to much more distant areas both within Vietnam and further south in Cambodia, including a province in Cambodia some 250 kilometers downstream from the dam. The assessments grossly underestimated impacts from material losses (livestock and fishing), damage to water quality, negative effects on aquatic ecology, and adverse consequences for human health.

The case of the Yali Falls Dam illustrates additional factors posing challenges in relation to the quality of TIAs in the region: the lack of information sharing among the basin countries and the generally low priority placed on long-term environmental and socioeconomic effects. With respect to problems of information sharing, Vietnam did not provide detailed data to Cambodia about water releases from the Yali Falls Dam. This increased the vulnerability and flood damage experienced in downstream Cambodian villages, with some villages now experiencing intensified flooding as many as three times per year during the rainy season.

The current situation in the region is characterized by policymaking that allows short-term economic benefits to trump other considerations, and is at the root of the low priority afforded environmental and social implications. This is especially true when the consequences are borne predominantly by rural or less powerful groups. Economic growth through hydropower exports and imports has led Laos, Cambodia, and to a lesser extent China, to play down the importance of the environmental and socio-economic well-being of the more remote regions within and outside their borders.

Cambodia is said to “not want to know” what the real assessment of environmental and socio-economic impacts of the Yali Falls Dam in Cambodia and Vietnam might be so as not to have to deal with them (Wyatt and Baird 2007; Bruch et al. 2007). The fact that the downstream countries (Laos, Thailand, and Vietnam) are slated to be the beneficiaries of power from dams that Laos continues to build partly explains why these countries have not spoken up loudly against China’s own plans for building numerous dams. China also has offered to assist the downstream countries in developing power transmission lines, an additional reason for these countries to refrain from resisting Chinese development projects. Laos already relies on hydropower as its main source of export revenues. Thailand is the main recipient of hydropower from Laos, and Vietnam is another beneficiary of what will be an extensive hydropower transmission network.<sup>7</sup> China has joined in the effort by promising assistance for a power transmission network involving Laos, Vietnam, and Thailand.

However, without information sharing and without a genuine commitment to preventing negative environmental and socioeconomic impacts, the prospects for improved EIAs and TIAs are likely to remain poor. This is regrettable given the opportunity that TIAs can provide for greater regional cooperation. As evidenced by the case of Lake Victoria TIA in eastern Africa, EIAs can lead to institution-building for long-term collaboration and cooperation on transboundary resource(s) management between or among neighboring countries (Sikoyo and Goldman 2007; Bruch et al. 2007). The United Nations Economic Commission for Europe (UNECE) has highlighted TIAs as a tool for regional and international cooperation (UNECE 2007).

#### *Implications for Environmental Security in the Mekong River Basin*

The current trends regarding water-related development projects in the Mekong Basin region carry multiple security implications. In essence, environmental degradation from the ambitious lineup of large-scale projects poses significant threats to national security by undermining human security that, in turn, can trigger social and economic instability.

The decision to pursue such projects has both external and internal origins in relation to the affected countries. The former is a manifestation of the power asymmetry in the region. The ecologically, economically, and politically weaker states (Cambodia, Vietnam, and Laos) have a great need for economic investment and development opportunities, which the richer countries (China and Thailand) can supply but at potentially large costs to the long-term interests of their weaker neighbors. The negative long-term implications, in turn, can perpetuate, if not aggravate, the power asymmetry.

In terms of conflict potential, while the governments of Laos, Cambodia, and Vietnam may not oppose the multiple water development projects involving China and Thailand, their populations already are suffering, and will continue to suffer, from the negative environmental, social, and economic consequences of badly conceived development projects. Discontent also may arise from the failure of community benefits to materialize as promised. Such grievances, exacerbated by additional projects coming on line, will continue to infuse resentment against the upstream states that ultimately can lead to serious conflict.

The preoccupation of Cambodia, Vietnam, and Laos with economic development has driven these countries to not only be less critical toward projects initiated in the upstream countries (China and

Thailand), but also to engage in environmentally and socioeconomically questionable projects themselves. Although these countries are at an embryonic stage with respect to civil society development, the risk of environmental conflicts in general may be heightened by the growing awareness among communities of linkages among environmental quality, human well-being, and basic human rights. Such awareness is aided by the emergence of a powerful international network of anti-dam and community rights advocacy groups ready to lend support and resources to local communities in developing countries (Conca 2006).

In Laos, the risk of water conflicts is rising as a result of the increasing development of hydropower projects that have unanticipated (in terms of the EIAs used in the region) and unaddressed adverse environmental and socioeconomic impacts. The likely future competition from China for power exports may reduce Laos's capacity to use the earnings from such exports to improve human security. China's Yunnan province is planning to build 14 hydropower projects by 2020, and, like Cambodia, also is eyeing Thailand as its export destination (PhonNgern 2007).

On the other hand, the richer states in this equation, China and Thailand, are not free of risk for environmental conflicts. With more developed civil societies in the region, both the Chinese and Thai governments have seen large-scale protests, some even violent, by their own citizens against the building of dams on the tributaries of the Mekong River (Imhof 2000).<sup>8</sup>

### Conclusion

Environmental assessments should lead to development decisions informed by knowledge of the range of potential environmental and social impacts—direct, indirect, interactive, and cumulative. Projects that move forward with little or no consideration of such impacts are leading to an increasing number of protests, in some cases violent. There is a growing awareness among communities all over the developing world regarding the connection between the environment and livelihoods as well as the implications of this nexus for human rights. The likelihood of conflict is particularly high when environmental assessment practices are weak and there is a surge of projects with significant potential environmental and social impacts. Such is the case in many regions in the world today, notably, but not exclusively, the Mekong River Basin.

In the Mekong region, environmental insecurity is likely to worsen if environmental assessment practices do not move closer to the standards set by international best practices. If current trends continue, ambitious hydropower and other water-related projects (navigation, irrigation, etc.) will escalate the risk of potential conflicts due to power asymmetries among the Mekong states and growing environmental and human insecurities that will be borne by the millions of people dependent on the Mekong.

### Recommendations

*International donors, regional bodies, and international financial institutions should:*

- Continue to provide technical assistance in developing and/or improving the regulatory frameworks governing EIA/TIAs and assist countries in elaborating or improving technical guidelines for EIA/TIA.
- Help build capacity to conduct effective EIAs/TIAs by focusing research on additional case studies, particularly concerning the management of international watercourses.

*Civil society organizations, including NGOs, should:*

- Recognize their crucial role in involving the public, especially potentially affected communities, in the EIA/TIA process. Such involvement has been proven to lead to higher quality EIAs/TIAs.

*Academic institutions should:*

- Recognize that they play a crucial role in providing external, independent review. Such a review can be important, especially in controversial projects, adding objectivity and rigor to the EIA/TIA process.

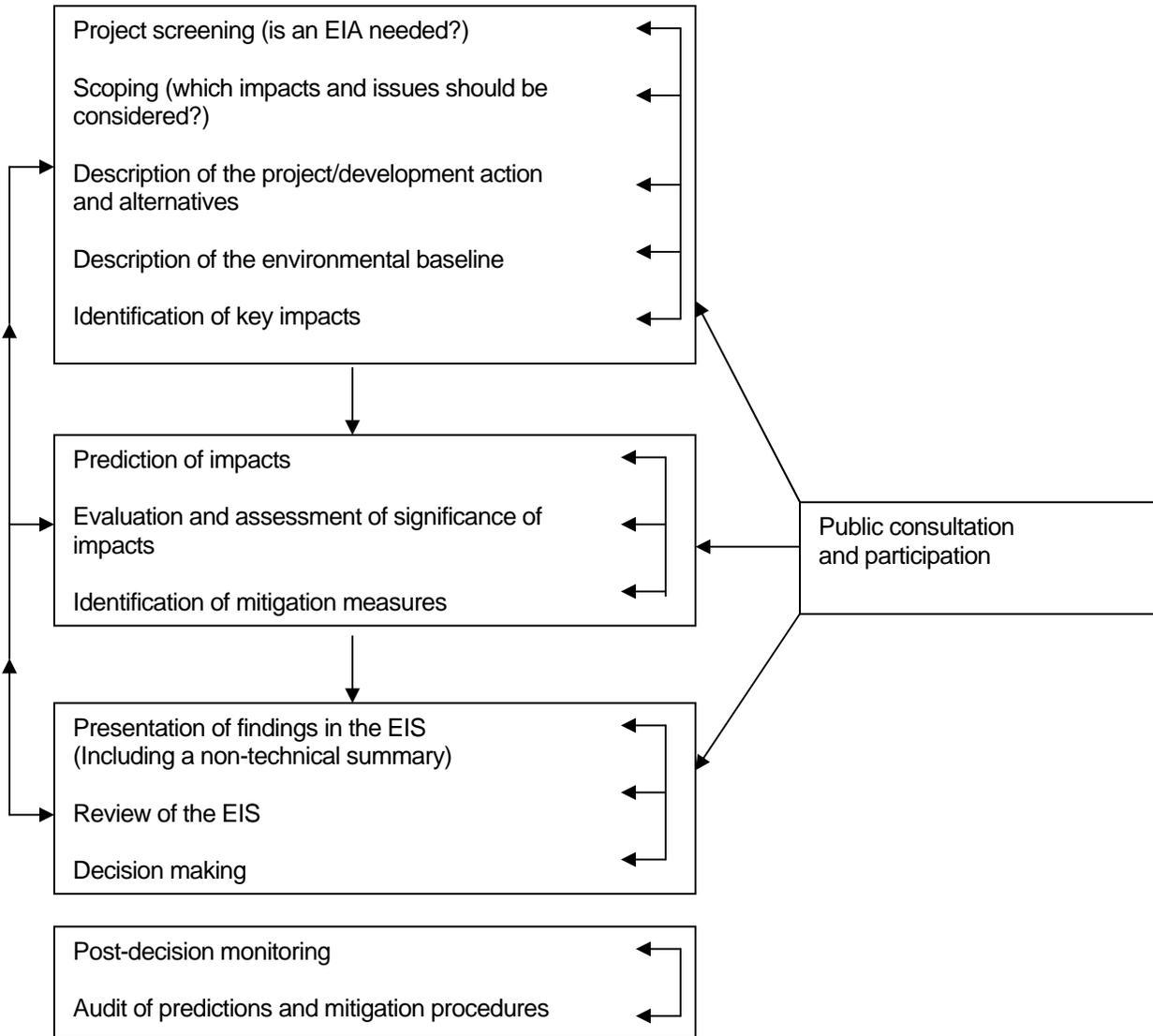
*National governments in the Mekong River Basin should:*

- Officially recognize throughout their bureaucracies that environmental integrity is tied to the nation's long-term economic, political, and human security.
- Close the gaps between current EIA practices and international best practice standards.
- Pursue a diplomacy that recognizes that cooperation, especially among countries downstream from China, offers the best chance of positive outcomes with respect to water projects involving China.<sup>9</sup>

*Jennifer Li* is a research associate at the Foundation for Environmental Security and Sustainability. Please send your comments and feedbacks to [jli@fess-global.org](mailto:jli@fess-global.org).

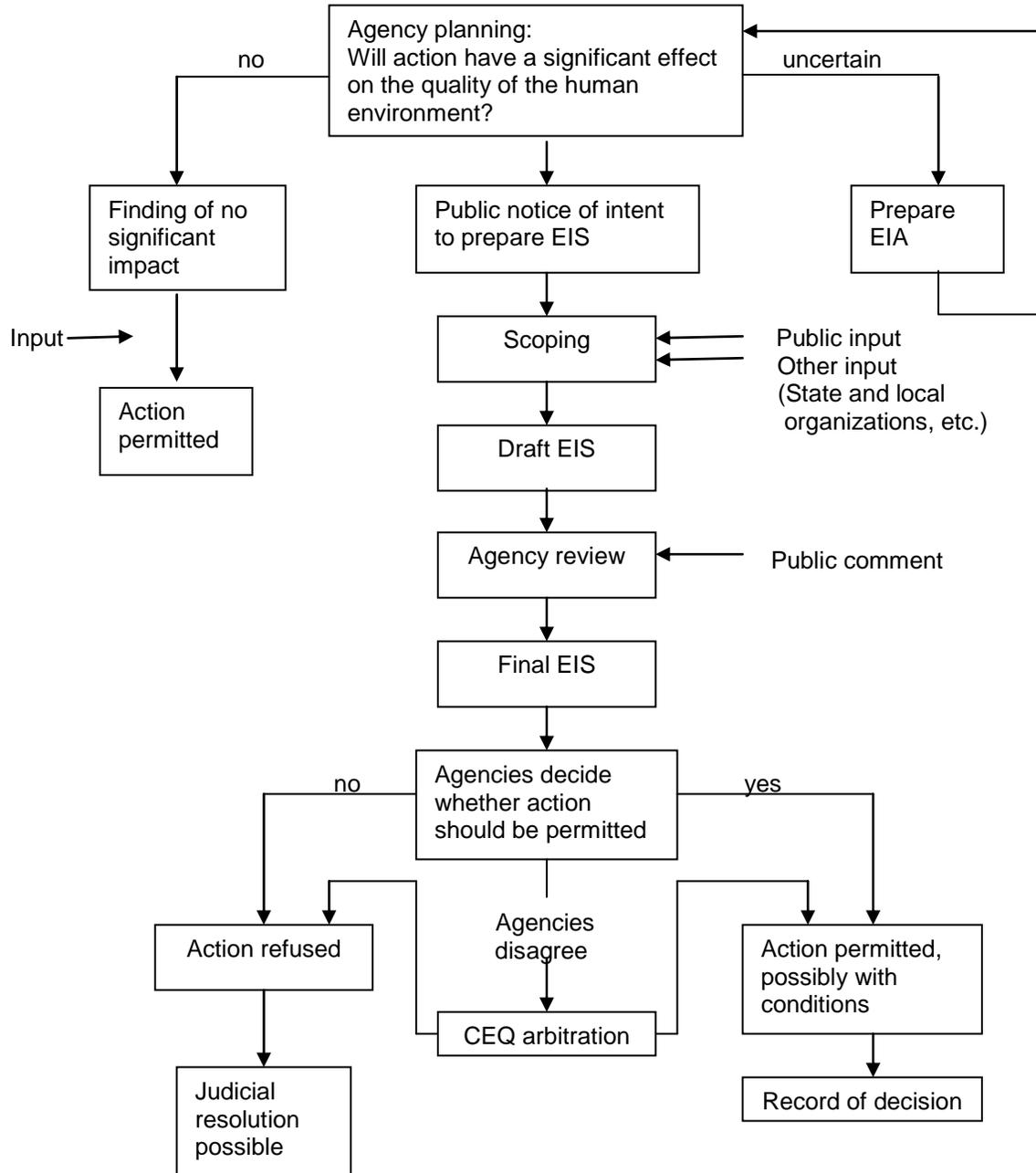
*The author would like to acknowledge the research assistance provided by Chloe Yang, a research intern at FESS, in the preparation of this paper.*

### Appendix 1. Important Steps in the EIA Process



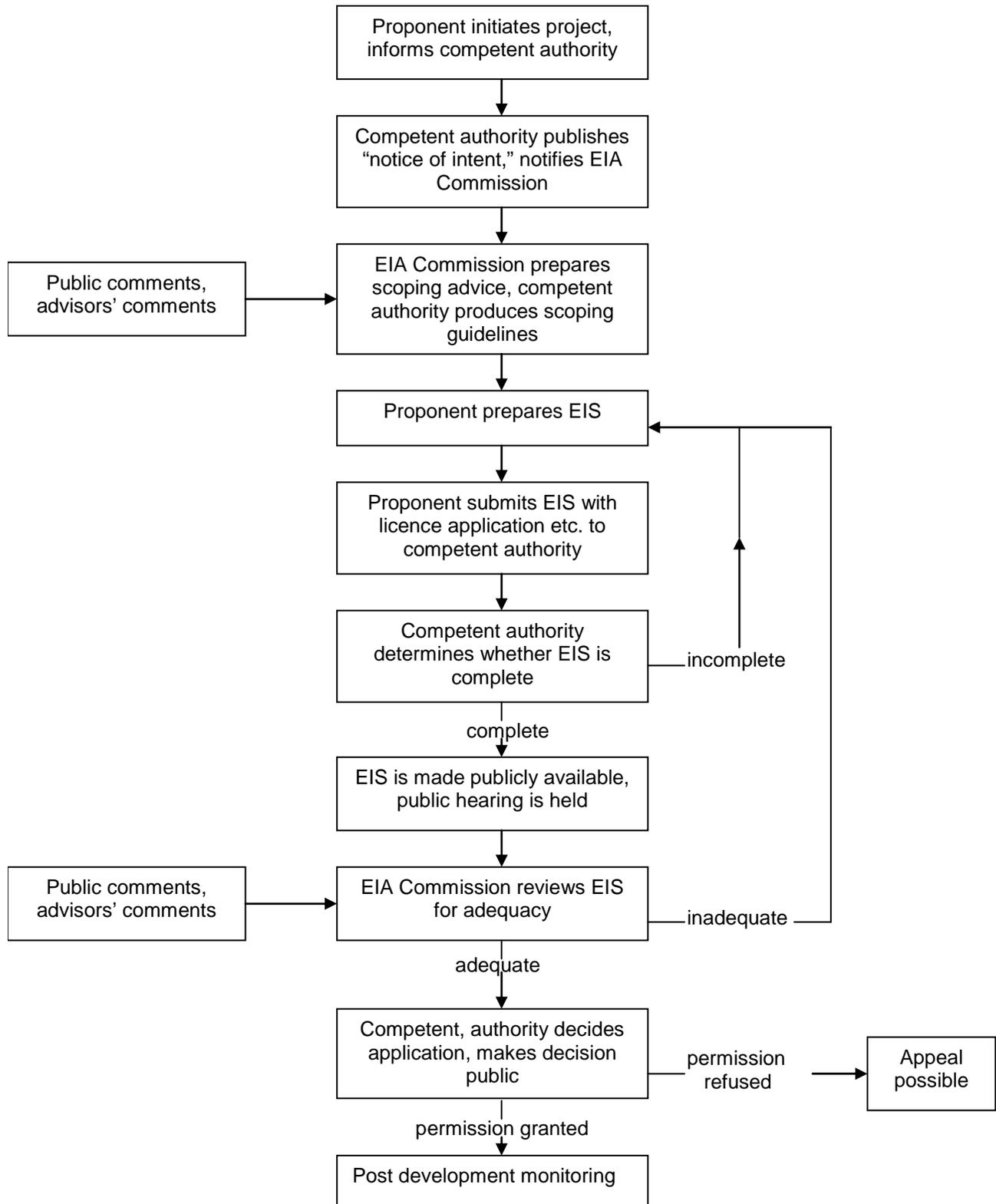
Source: Glasson et al. 2005.

**Appendix 2. EIA Process in the U.S.**



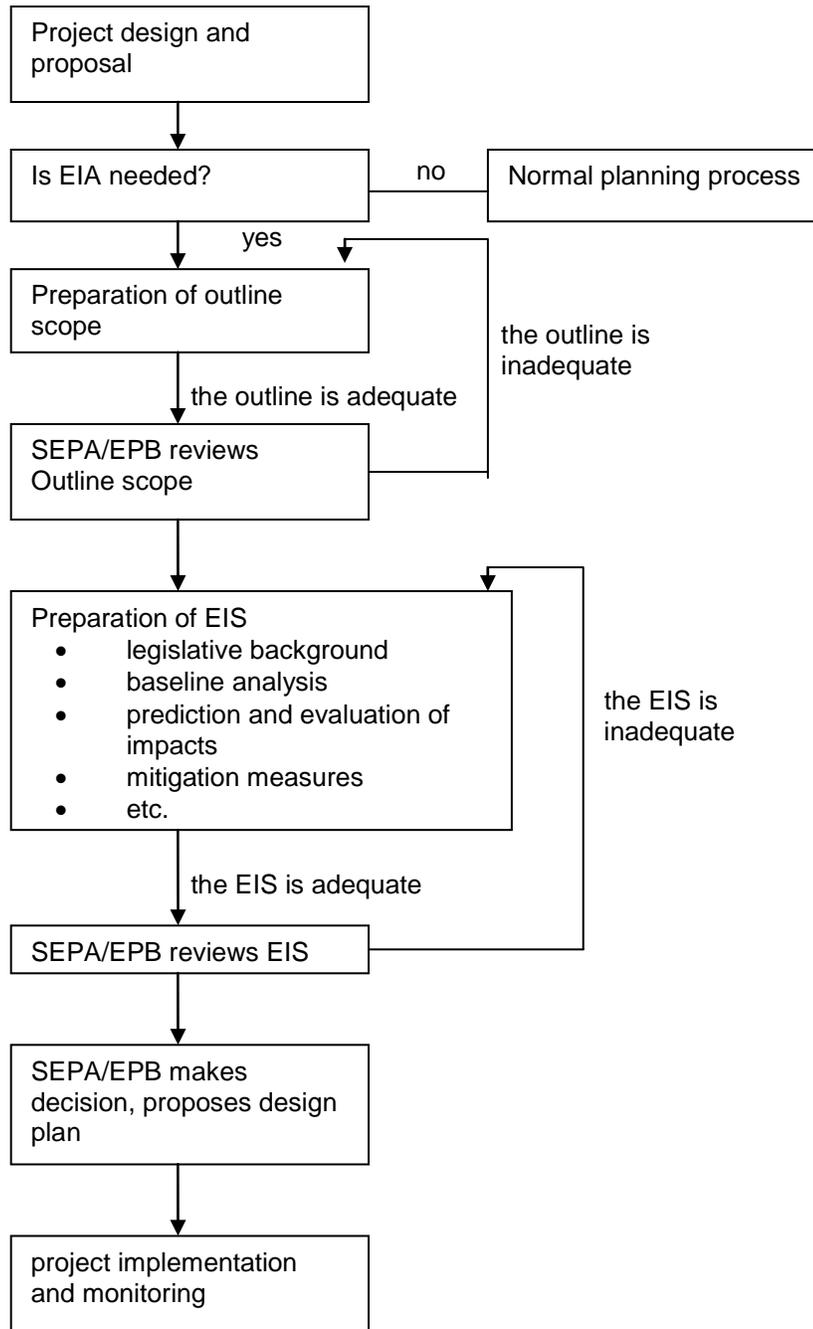
Source: Legore 1984.

### Appendix 3. EIA Process in the Netherlands



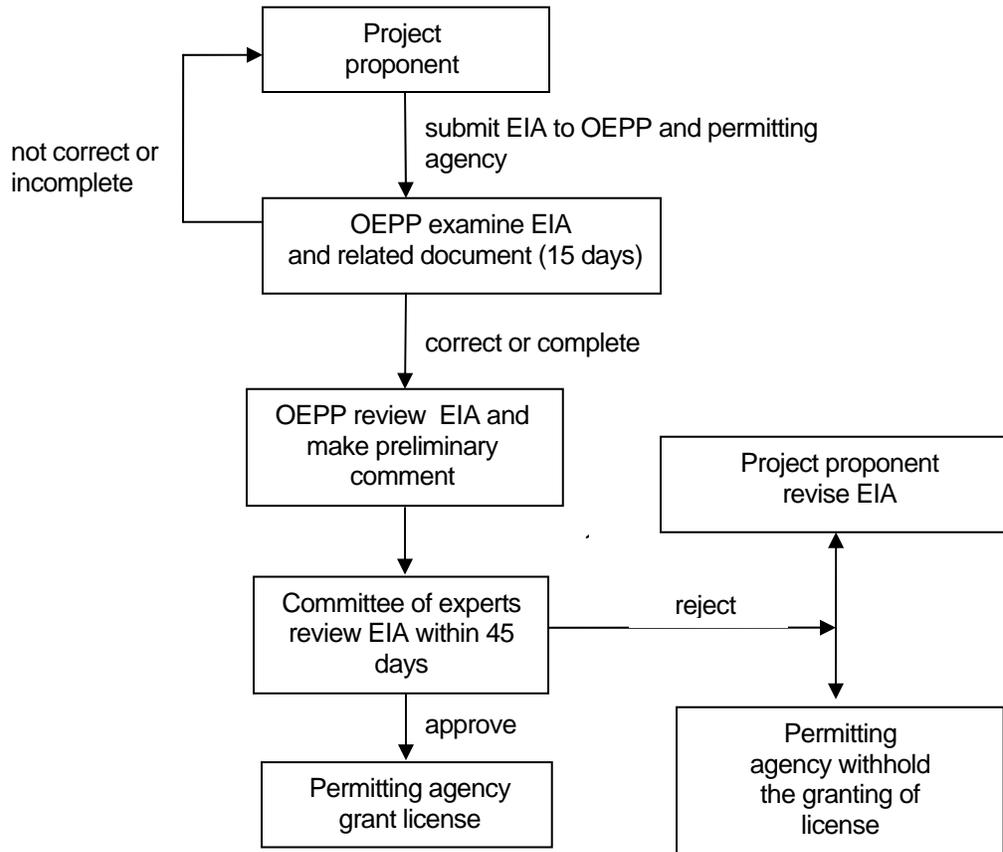
Source: Glasson et al. 2005.

#### Appendix 4. EIA Process in China



Source: Wang et al. 2003.

**Appendix 5.** EIA Process in Thailand for EIA of Private Sector



Source: Stærdah et al. 2004.

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## Endnotes

1. CLEIAA is a pan-African association of EIA associations and institutions, created in Africa in 2000, which has improved collaboration among African countries to build EIA capacity.
2. The agency “directly responsible,” in this case, can be 1) any central or local government agency responsible for government projects; 2) an office for domestic investment management, responsible for development projects proposed by persons, entities, or private organizations from within the country; 3) an office for foreign investment management, responsible for development projects proposed by foreign persons, entities, or organizations; and 4) other agencies mandated to oversee development projects (SIDA 2004).
3. While some units overseeing the management of protected forests were moved to MNRE, logging and forest resource exploitation remain in the Forestry Department within MAC (Tan 2004).
4. It has been suggested that EIAs in developing countries are more important to environmental quality and human health than that in developed countries (McCormick 1993).
5. Worldwide, there is a growing recognition of the need to consider environmental implications of regional and sectoral development plans at the macro level, leading to the development of the strategic environmental assessment (SEA). According to World Bank (2006), the objective of the SEA is to “mainstream environmental and social considerations into higher level decision making so as to more effectively mitigate negative implications and maximize potential positive synergies” (World Bank 2006). The idea for SEA first emerged in 1992 during the EU’s Fifth Community Action Program on the Environment, when the EU delegates stated that: “Given the goal of sustainable development, it seems only logical, if not essential, to apply an assessment of the environmental implications of all relevant policies, plans, and programs” (CEC 1992). Worldwide, SEA systems are the most developed in terms of robust implementation in the United States, the Netherlands, Finland, Australia, Germany and, to a lesser extent, New Zealand, Canada, UK, Sweden, Poland, Japan, Korea, and Hong Kong (Fischer 2007; Che et al. 2002). The development of SEA systems is still at an early stage in most developing countries, where SEA adoption has been driven at least in part by the unsatisfactory implementation of EIAs despite years of efforts. Many believe that it is only within a SEA framework where the consideration of environmental impacts becomes intrinsic to government decision making that the implementation of EIAs can become more effective (Luecht 2007).
6. Internationally, there exists a guideline on the practices of TIAs through the Convention on Environmental Impact Assessment in a Transboundary Context, also known as the “Transboundary EIA Convention” or Espoo (EIA) Convention, of UNECE (UNECE n.d.). The Espoo Convention signed in Espoo, Finland, stipulates the obligations of the party states for assessing the environmental impact of certain activities at an early stage of planning. It also lays down the general obligation of the party states to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries. Thus far, however, the Convention has had little participation from the developing world, including countries in Asia, Latin America, and Africa. Pressure from multilateral and bilateral aid organizations such as the World Bank and the Asian Development Bank (ADB) may be one way to increase the participation from these countries (Thomas B. Fischer, email message to author, September 21, 2007). The September 2007 issue of the *International Journal of Water Resources Management* features TIAs.
7. Vietnam also has been relatively silent over China’s dam building because it expects fewer floods and a more even flow as a result of the dams (Manorom 2007).
8. While there have not been recorded violent conflicts to date within China as a result of dam building activities on the Lancang-Mekong River, the potential for that seems real given that such conflicts over dams have already occurred in other parts of the country. A 2004 protest against the Pubugou dam in Sichuan province turned violent, leading to the death of a policeman and, as a consequence, the execution of the protester held responsible (BBC News 2006). Information regarding environmental assessments for the Pubugou dam is unavailable, but a quote from the March 2006 environmental newsletter of the United Nations Environment Program sheds some light on EIAs for dam projects in China in general: “Construction of most dam projects in the country has not been done in line with the Environmental Impact Assessment [EIA] Law” (Stanway 2006).
9. Presenting a more united front by collectively giving more substantive authority to and working through the Mekong River Commission (MRC), these countries stand a better chance of convincing China to redefine its own interests even if China remains outside the MRC. The MRC has, among its eight programs, the new Basin-wide Development Plan intended to “identify and prioritize development projects that will bring the best, most

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equitable benefits to the people of the Lower Mekong River Basin (LMRB) (i.e., Cambodia, Thailand, and Vietnam) (MRC 2004). The Plan, as in the case of all MRC programs, was based on the approval of the LMRB countries and needs the political backing of these countries.

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8110 Gatehouse Rd, Suite 101W  
Falls Church, VA 22042  
703.560.8290  
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