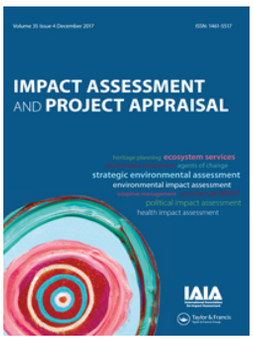

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Comparative analysis of public participation in the EIA process for Thai overseas investment projects: Krabi coal terminal, Hongsa coal power plant, and Dawei special economic zone

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ABSTRACT

While Thai overseas investment projects (TOIPs) have become a key form of development in the region, their environmental impact assessment (EIA) quality has been criticized. This research sought to analyze the differences in EIA practices in terms of public participation (PP) in two TOIPs – the Hongsa coal-fired power plant (Lao PDR) and the Dawei special economic zone (Myanmar) – versus a national-level project, the Krabi coal terminal. For Laos and Myanmar, which did not previously require PP, the Thai consultants did not apply the Thai PP framework, leading to poor public participation index (PPI) scores = 0.02, indicating a negligible PP process. However, the consultant on the Krabi coal terminal claimed to abide by the Thai regulations, yet the PPI scores claimed = 0.81 (substantive rationale), were quite different from those indicated by the affected villagers = 0.39 (instrumental rationale). These villagers' concerns resulted in conflict between the affected villagers and project owners. Our findings have revealed the true necessity of PP regulation and systems to monitor consultant performance to ensure sustainability of TOIPs in neighboring countries.

Abbreviations: DSEZ: Dawei special economic zone; EGAT: Electricity Generating Authority of Thailand; EIA: Environmental impact assessment; EHIA: Environmental Health Impact Assessment; IFAC: Information accessibility; ONEP: Office of Natural Resources and Environmental Policy and Planning; PP: Public participation; PPI: Public participation index; TOIPs: Thai overseas investment projects

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Environmental impact assessment (EIA); Thai overseas investment; public participation; information accessibility; Thailand/Laos PDR/Myanmar comparison

1. Introduction

Environmental impact assessment (EIA) is an important example of a process associated with the remarkable growth of interest in sustainability (Glasson et al. 2005; Arts et al. 2012; Weaver et al. 2012). The EIA law in Thailand was developed over more than 20 years and is considered a leader of its kind along the Mekong (Leonen and Santiago 1993; Boyle 1998; Office of Natural Resources and Environmental Policy and Planning 2012). As an essential component of the EIA process influencing assessment and mitigation measures, public participation (PP) has been integrated into Thai EIA procedures since 1992 (Office of Natural Resources and Environmental Policy and Planning 2012). Nonetheless, as Thailand has undergone rapid industrial development, public involvement, and the technical quality of EIA content are still problematic in practice (Stampe 2009). PP was charged as simply being a formal procedural requirement, and public concerns were not seriously accounted for when making decisions, often rendering EIA reports and mitigation measures unacceptable by affected local communities (The Nation 2013; TPBS 2013; Wipatayotin 2015).

Unfortunately, instead of strengthening PP policies, EIA laws, and mechanisms, the Thai government along with Thai project developers have been shifting their investments to neighboring countries, where EIA law and PP requirements are much less developed, in order to take advantage of the weaker legal protections and more restricted political space (Li 2008; Erdogan 2013; Greenstein 2014; Irrawaddy 2014; Yep 2014a). Despite strong public resistance arising from concerns for the negative impacts to the environment as well as human rights violations, TOIP, especially major infrastructure projects – such as coal-fired power plants, hydropower dams, and mines – are still fanning out in all directions. These projects represent upwards of $100 billion in investment, a value only behind that of Japan and China, in the Asia-Pacific region (The Nation 2012; The Mekong Eye 2016). This regional problem led to discussion among diverse

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groups from civil society and governments across the region. As such, the Regional Technical Working Group on EIA was established to improve regional cooperation for effective EIA policy and practices (Mekong Citizen 2017). After 18 months of preparation, the group produced the guidelines on PP in EIA in the Mekong Region, with the goal of inspiring continued strengthening of EIA policies and practices in each Mekong country and across the area. Nevertheless, these guidelines have not practically been employed yet.

Apart from a project owner and related government agencies, one of the key players directly responsible for PP in EIA is the EIA consultant (Wood 1998; Albrecht 2012; Birley 2012; Duncan 2012; Chanthy and Grünbühel 2015). Unfortunately, the current Thai EIA system cannot hold consultants accountable for their performance on local or TOIP, and PP in EIAs for TOIPs has never been evaluated to reflect their performance against neighboring countries.

This research aimed to investigate the differences in EIA practices regarding PP and information accessibility (IFAC) of TOIPs performed by Thai EIA consultants. By comparing three case studies, namely, the Krabi coal terminal (Thailand), the Hongsa coal-fired power plant (Lao PDR), and the Dawei special economic zone (DSEZ) (Myanmar) (Figure 1), the main objective is to evaluate EIA practices concerning PP and IFAC using the integrated public participation index (PPI) (Brombal et al. 2017) discussed further in Section 2.1. Comparatively, factors potentially responsible for varying performance in PP and IFAC of impact assessment reports among the three cases are discussed. Recommendations to improve the quality of PP and IFAC to make TOIPs sustainable and accepted in neighboring countries are also proposed.

2. Background

2.1. General concepts of meaningful public participation

Public participation (PP) is based on the core idea that those who are affected by a decision regarding a project have a moral right to be involved in the decision-making process (Cuppen et al. 2012). The International Association for Public Participation elaborates the spectrum of PP goals as follows (IAPP 2014):

- To provide the public with balanced and objective information in order to assist them in understanding the problem, alternatives, opportunities, and/or solutions.
- To obtain public feedback on analysis, alternatives and/or decisions.
- To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.
- To collaborate with the public on each aspect of the decision including the development of alternatives and the identification of the preferred solution.
- To place the final decision-making action in the hands of the public.

Similarly, Glucker et al. (2013), in an intensive literature review, categorized PP objectives into three rationales – instrumental, substantive, and normative (Glucker et al. 2013). According to the instrumental rationale, PP is merely meant for achieving a smooth and legitimate implementation of a project and to resolve conflicts among stakeholders. On the other hand, according to the substantive rationale, PP is valued as a tool to enhance decision-making regarding a project by harnessing local information and knowledge, and incorporating experimental and value-based knowledge, as well as testing the robustness of information from other sources again that obtained from the public. Finally, with respect to the normative rationale, PP is meant to influence decisions, to elevate democratic capacity, provide social learning, and empower and emancipate marginalized individuals and groups. Robust PP may provide solid understanding of the impact and mitigation measures partially leading to project support or acceptance by the public. On the contrary, poor PP may negatively impact the project and potentially lead to project rejection or ambivalence (Cuppen et al. 2012).

To be effective in this regard, PP needs to be organized in a structured manner throughout the EIA process and project implementation. Moreover, identification of key stakeholders is crucial for meaningful PP. It begins with identifying the potential environmental and social impact deriving from a proposed project and the connected actions, and then uses a stakeholder analysis matrix to determine different groups and develop suitable PP strategies. The matrix and roles of the key stakeholders in PP are illustrated in Table S1 and S2 in the Supporting Information (SI). Importantly, after identifying all relevant stakeholders, sufficient time must be provided for them to consider the information and prepare questions for the EIA consultant and project proponent (Mekong Partnership for the Environment 2017).

Several groups have developed criteria to evaluate PP in EIA. For example, Palerm (1999) proposed using timing of PP vis-a-vis the EIA process, scope of consultation (including/not including socioeconomic aspects), and presence of project alternatives as the criteria (Palerm 1999). Yang (2008) proposed the use of time, number of participants, information disclosure, scope of participation, techniques of participation, and consideration of the results from PP in decision-making (Yang 2008). Meanwhile, Nadeem and Fischer (2011) put forth employing legal requirements, information, timing and venue of consultation, composition of the

Figure 1. The three Thai investment projects in this study, namely, Krabi coal terminal (Thailand), the Hongsa coal-fired power plant (Lao PDR), and the DSEZ (Myanmar). Source: Image courtesy of Raviwan Rakthinkamnerd).

public, methods of consultation, and consideration of public concerns in the EIA report as the primary criteria(Nadeem and Fischer 2011). Recently, Brombal et al. (2017) described their PPI as a PP evaluative tool that integrates relevant measurements of different variables. PPI was developed using multi-attribute-value theory based on multi-criteria decision analysis. The PPI criteria reflect procedural aspects of EIA public participation, including: (a) timing; (b) information provision; (c) consultation arrangements; (d) public consultation; and (e) incorporation of PP results in the EIA report. Each criterion was further subdivided into attributes as illustrated in Table S3 in SI. Parameters relevant to each attribute were normalized by converting them into a four-point scale, ranging from 0.00 to 1.00. Based on this approach, a final PPI score <0.33 would indicate a negligible process surrounding PP while PPIs ≥0.33 but < 0.66 would suggest that the PP process primarily served an instrumental purpose. PPIs ≥0.66 but <1.00 would adhere to the substantive rationale, and a PPI = 1.00 followed a normative rationale.

2.2. EIA systems in three countries

Prior to evaluating PP and IFAC of the three investment projects, let us first consider the EIA systems of the three countries with a focus on the PP process.

2.2.1. EIA legislation

All countries have enacted EIA laws and regulations. Thailand established the system in 1992, approximately 18 and 20 years earlier than Laos and Myanmar, respectively. Additionally, apart from EIA, Thailand set up the system of Environmental Health Impact Assessment (EHIA) under the 2007 Thai Constitution (Chanchitpricha and Bond 2015) for projects that may have severe effects on the environment, natural resources, or health. The 1992 National Environmental Quality Act describes the broad EIA process and roles of the responsible administrative authorities. The executive regulations specify further details on lists of the projects and activities that are subject to EIA or EHIA.

Comparably, the key Lao legislation related to environmental assessments is the 2010 Environmental Protection Law, which stipulates that each government sector has the duty to determine which projects require an EIA report (ADB 2010; Wayakone and Makoto 2012). This was amended by the Environmental Protection Law 2012. The EIA regulations cover the details surrounding the categories of environmental assessment, EIA process, and duties and power of responsible government agencies.

On the other hand, the Myanmar EIA system was initially introduced in the 2012 Environmental Conservation Law, which established a broad national framework for protecting the environment. The Environmental Conservation Law and its rules provide exclusive authority for overseeing EIA to the Ministry of Natural Resources and Environment Conservation. Moreover, the 2012 Foreign Investment Law and its 2016 subordinated rules require an EIA or social impact assessment report to be attached in an investment proposal for a capital-intensive investment project as specified by the Myanmar Investment Commission. However, the first complete legal framework of the EIA system was only recently instituted by the Environmental Assessment Procedure, Notification No.616/2015, in December 2015. The system, therefore, is in its relative infancy stages. The EIA procedure defines the whole process of the EIA and Environmental Compliance Certification, together with the responsibilities of stakeholders.

Interestingly, our evaluation indicated that although the Thai EIA system claimed to be one of the most progressive systems in the region (Leonen and Santiago 1993; Boyle 1998; Office of Natural Resources and Environmental Policy and Planning 2012), there was no step, such as provisions for appeal by the proponent or the public, against decisions as identified in the 2015 Myanmar EIA Procedure, Chapter 6, and no strategic environmental assessment (SEA) as stated in Lao EIA law.

2.2.2. EIA administration

All three countries have a single national agency legally assigned to oversee the entire EIA process, from reviewing and evaluating to deciding upon the quality of the EIA report. In Thailand, the Office of Natural Resources and Environmental Policy and Planning (ONEP) has direct responsibility for reviewing the completeness of the EIA report, from where it is then passed on to the Environmental Review Committee for quality assessment. The EHIA is more stringent because it requires the Environmental Review Committee to consider comments from the Independent Commission on Environment and Health. Myanmar's EIA procedure also grants specific responsibilities to the EIA Report Review Body to review the EIA of any project as requested by the Ministry of Natural Resources and Environment Conservation.

In contrast to both countries, there is no provision to establish a competent expert body to review EIA reports in Lao PDR. Accordingly, evaluation of EIA quality is finalized by the Environmental and Social Impact Assessment department without review by a separated expert group or appeal body. Nonetheless, under EIA Decree 2010, the concerned agencies and local administrations shall organize consultation meetings at every level.

2.2.3. Qualification of EIA consultant

In the three countries, exclusively registered and approved consultants can conduct and prepare EIA studies. However, only Thailand has a ministerial regulation necessitating the information in the consultant's report to be accurate. Failure to abide by this law results in the cancellation or suspension of an EIA consultant license (Wipatayotin 2015).

2.2.4. EIA process

The flow charts of EIA processes in the three countries are summarized in Figures S1–S3 in the SI. All three EIA systems have screening lists to identify whether an EIA is needed for a project. In case of doubt, the responsible government agency of each country will make a final decision. In Thailand, there are four screening categories, including no assessment required and projects required to undergo EHIA, EIA, or Initial Environmental Examination. Lao PDR and Myanmar have the same categories as Thailand except for EHIA.

The project cycle of the EHIA is similar to the EIA system with one additional review by the Independent Commission on Environment and Health. At the screening step, the EHIA consultant must submit a scoping report to the ONEP, but there is no requirement to gain approval of the report before continuing to the next step. Contrary to Thailand, EIA systems in both Lao PDR and Myanmar need a project developer to prepare a scoping report and detailed terms of reference as well as gain approval of these documents from the authorities prior to conducting an EIA report. The requirement to consider alternatives is legally obligated in the regulations of Thailand and Myanmar, but it is described only as an EIA guideline in Lao PDR.

According to the regulations in the three countries, PP is mandatory at every step of EIA preparation. For example, with respect to the Thai EHIA process, there is a regulation describing the detailed arrangement of a public hearing, such as methods, timing, and information available to the public prior to conducting any public hearings or meetings (Office of Natural Resources and Environmental Policy and Planning 2012). While details of PP are provided in Lao regulations, there is nothing particular surrounding the methods of public consultation in Myanmar regulations. However, activities and the results of the consultations are to be included as a section of the draft EIA report for all countries. Legal mandates for PP in EIA for all three countries are presented in Table S4.

2.3. Case studies

2.3.1. Krabi coal terminal

The proposed coal terminal, initiated by the state-owned Electricity Generating Authority of Thailand (EGAT), is in Klong Rue village, Krabi province, Southern Thailand (Figure 1). It is located at the Krabi estuary, renowned as a Ramsar site (Figures 2(a) and (b)) – an area designated as a significant wetland site at the international level under the Ramsar Convention (Janekarnkij 2010).

The EGAT plans to haul coal from other countries by ship to the terminal and then subsequently ship around 8000 tons of coal per day via a nine-kilometer conveyor belt to support the proposed 870 MW coal-fired power plant. The plant will be built at the location of an existing thermal power plant operated by EGAT. According to the Thailand Power Development Plan for 2015–2036, these projects will be completed by 2019 so as to address the electricity shortage in the South.

Under Thai regulations, the coal terminal and coal-fired power plant are part of the list of projects requiring performance of EIA and EHIA, respectively. Although both coal projects are closely linked, the authority allowed the EGAT to conduct EIA for the coal terminal and EHIA for the power plant separately. However, the EGAT claimed to follow EHIA regulations for both projects. In March 2015, the EGAT submitted the EIA report for the terminal conducted by the TEAM Consulting Engineering and Management Company to the ONEP. Yet, an expert committee rejected the report and sent it back for further study. The EGAT next made the necessary revisions and resubmitted the EIA to the ONEP in July 2015, a time when various locals and anti-coal groups from Southern Thailand were protesting the project.

A number of non-governmental organizations (NGOs) and locals claim that the area is already experiencing negative effects from vessels transporting oil for the existing thermal power plant under the same project developer (Higonnet et al. 2014). Additionally, the EIA allegedly ignored the potentially serious effects on the local fisher folk and tourism entrepreneurs living along the coal transportation route as well as the farmers who reside and subsist of the land in the area of the proposed conveyor belt (Higonnet et al. 2014). Consequently, to find a solution in order for the project to go forward, the Prime Minister established a tripartite committee comprising affected villagers, representatives from the government and the EGAT, and representatives from the National Legislative Assembly. Just recently, the Energy Policy and Planning Committee chaired by the Prime Minister decided to proceed with the policy of building Krabi's coal-fired power plant and the coal terminal, causing widespread protest by local opponents outside government offices in Bangkok (Bangkok Post 2017b). Three protest leaders and a group of the protesters were arrested and detained by the authorities for questioning without allowing lawyers or family members to visit them (Rujivanarom 2017). After facing broad criticisms in the form of accusations of human rights violations, the authorities decided to release the protesters and order the EGAT to restart the projects' EIA and EHIA studies. Under an agreement between the government and the protesters, the new studies had to be conducted with transparency and meaningful PP under the supervision of the tripartite committee (Bangkok Post 2017a).

2.3.2. Hongsa coal-fired power plant

The 1,878 MW Hongsa power plant and lignite mine is in the Ban-Han district, Sayabouri province, Laos (Figure 1). The power plant consists of three power stations with a

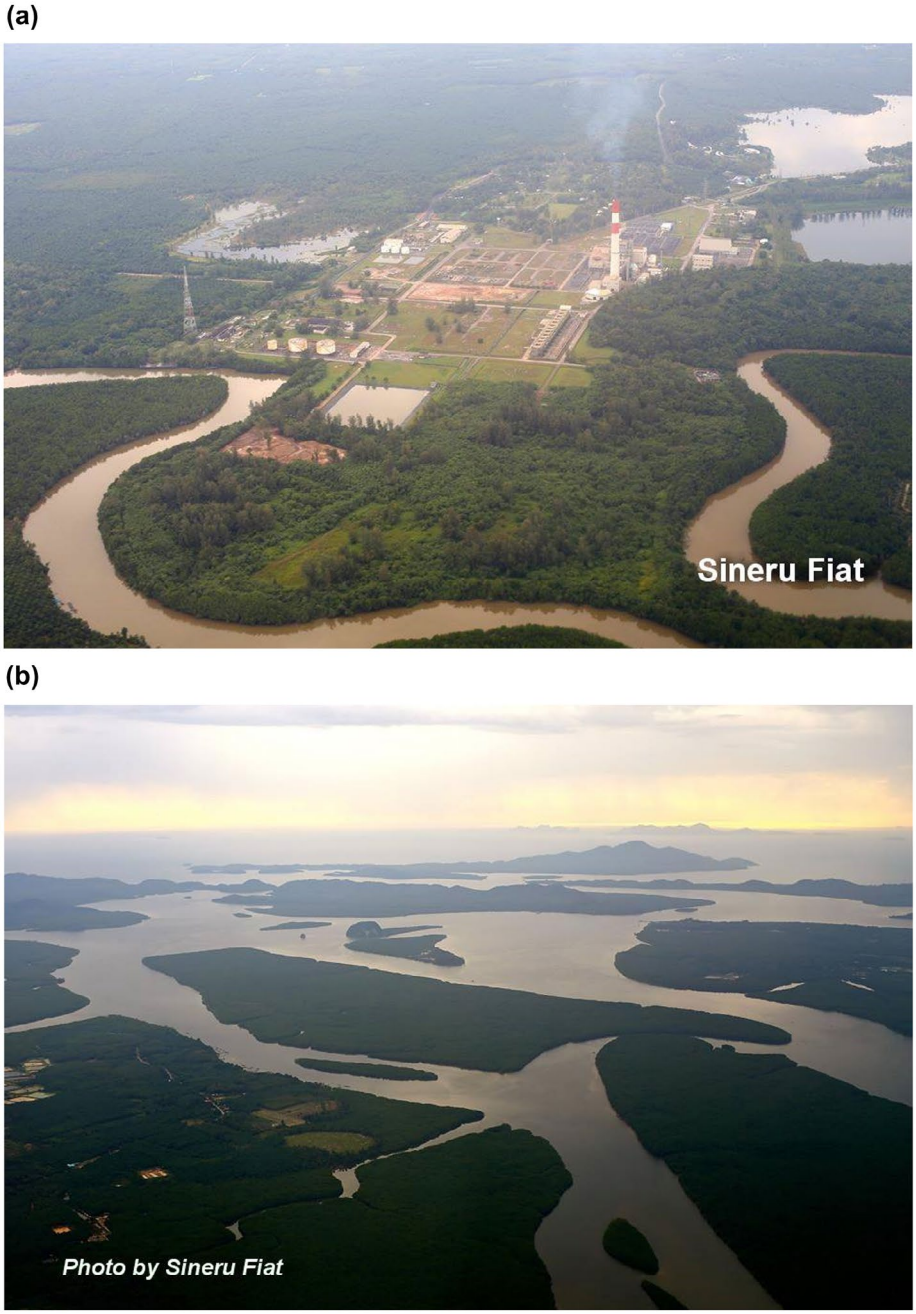

Figure 2. (a) The EGAT's existing thermal power plant near (b) the Krabi estuary, renowned as a Ramsar site and a very popular tourist destination (image courtesy of Chainarong Sretthachau (Sineru Fiat)).

production capacity of 626 MW each. The coal projects are being developed by the Hongsa Power Company, a consortium comprised of the Thai company, Ratchaburi Electricity Generating Holding Public Company, Banpu Power (a subsidiary of the Thai coal-mining company, Banpu), and Lao Holding State Enterprise .

Under the terms of a May 2009 agreement, approximately 80% of the entire capacity (1,473 MW) will be exported to the EGAT, with only 5–10% (100 MW) allocated for domestic Lao consumption (Yep 2014b). The Lao government approved the EIA and environmental management plan for the project conducted by the TEAM Consulting Engineering and Management Company in November 2007. Construction started amid criticism from civil society (despite the significant barriers to civil society expression in Laos) based on the lack of PP, IFAC, and concerns regarding the technical quality of the EIA (Smith 2009; Chernaik and Lu 2012). The last unit of the power plant (Unit 3) recently became commercially operational in March 2016.

2.3.3. Dawei special economic zone

The DSEZ is a bilateral economic cooperation project between the governments of Thailand and Myanmar, initiated in 2008 (Figure 1) (Thabchumpon et al. 2012). In August 2015, the Thai company, Italian-Thai Development Plc., and registered companies in Myanmar signed a concession agreement with the

DSEZ management committee of Myanmar to develop the 27 km^2 initial phase of the industrial estate and its related infrastructure. Moreover, the company has the right to develop an additional 8 km^2 area of the industrial estate should it desire to. The agreement will be valid for a period of 50 years plus an extension period of 25 years (Fernquest 2015).

Based on current data, it is estimated that 20–36 villages would be directly affected by the construction of the DSEZ as well as associated projects, like the industrial estate, ports, road links, reservoirs, and resettlement areas (Dawei Development Association 2015, Irrawaddy 2014). In June 2016, a new Myanmar–Thailand Joint High-Level Committee was about to be set up to handle many issues relevant to Dawei projects, including EIA approval. Recently, the Italian-Thai Development Plc. claimed that they had already completed the EIA for the first phase of the project (Dawei Development Association 2015). Of note is that the EIA reports for all Dawei projects are conducted by Thai EIA consultants.

3. Methodology

This research consisted of four main steps – selection of case studies, literature review, semi-structured face-to-face interviews, and comparative analysis. This combined approach was applied in previous studies in order to understand processes influenced by contextual variables, such as those of a legal, social, or institutional nature (Stake 1995; Gomm et al. 2000; Cashmore et al. 2007).

3.1. Selection of case studies

In terms of case selection, we investigated the background of large projects operating in Lao PDR and Myanmar with Thai investors along with reviewing controversial and active projects in Thailand. The EIA of these projects had to be conducted by Thai consultants so that we could compare their performance across different projects, EIA legal frameworks, and countries. Thus, we selected the Krabi coal terminal (Thailand), the Hongsa coal-fired power plant (Lao PDR), and the DSEZ (Myanmar).

3.2. Literature review

For the literature review, we reviewed the EIA reports of the selected TOIP projects for PP and IFAC evaluation based on the claims of project developers and consultants. For the Krabi coal terminal, the EIA documents we used included: (1) 'Summary Report on Public Hearing for Determining Criteria and Process of EIA (Public Scoping) for Klong Rue Coal Terminal, Krabi Province;' and (2) 'Draft EIA Report for Ban Klong Rue Coal Terminal Project'. Both were published in 2014 by the TEAM Consulting Engineering and Management Company (EGAT 2017) and submitted to the ONEP for official EIA evaluation but were rejected for re-assessment/revision, as mentioned earlier.

For the Hongsa coal-fired power plant, the document we used was the 'Environmental Impact Assessment (EIA) for the Hongsa Power Plant, Mining Development and Transmission Project' published in June 2007 by the TEAM Consulting Engineering and Management Company, which was officially approved by the Lao Government. Unfortunately, in the case of the DSEZ, we could not access any EIA report, although the EIA report was already finished. Similarly, neither the affected people nor Thai National Human Rights Commission could access this EIA report. The Thai consulting team, Chulalongkorn University, claimed that the consulting team had already sent the final report to the project developer, so it should be the company, instead of the consultant, that presents the report to the villagers (Spanton 2014). The Thai National Human Rights Commission recently asked for the report from the project developer; however, the company refused its disclosure.

3.3. Interview

To obtain data claimed by affected villagers for PP and IFAC evaluation, we contacted local NGOs and civil society organizations working closely with these issues for up-to-date information and planned semi-structured face-to-face interviews. For the Krabi case, as suggested by the local people and NGOs, we surveyed the area surrounding the potential project and interviewed potentially affected villagers from seven villages (50 villagers) through focus groups and individual interviews from the 24th to 29th of September 2014 using a set of questionnaires (see Table S5 in the SI). Interview consent forms were signed by the interviewees. We also attended the last public hearing on 28 September 2014 to observe the process.

For the Hongsa case, because of security issues and limited access to the project area, we interviewed three Lao lawyers directly involved in the case in Thailand and derived information from villagers' voice records and a Lao Mekong Alumnus' report (LIWG 2012) based on the same set of questionnaires. Finally, for the Dawei case, we interviewed two local NGOs and two Myanmar lawyers and participated in a strategic meeting and public hearing organized by the Thai National Human Rights Commission (Figure S1) where roughly 30 Dawei villagers and local NGOs were in attendance. Moreover, we collected information from local research (Dawei Development Association 2014) based on the same set of questionnaires. All interviews were recorded as digital files.

Notably, we obtained data from two different sources, including Thai overseas investors as well as the EIA consultants through the EIA reports and from affected

villagers and NGOs through the interviews. To triangulate the sources of data as much as possible, we interviewed university professors, directly familiar with each case, and covered selected issues appearing to be conflicting between the two sources of data. For the Krabi case, we interviewed a professor who also served on the Environmental Review Committee of ONEP. For the Hongsa case, we interviewed two Thai professors that helped develop the EIA system in Lao PDR. Interview questions for these professional experts are provided in the SI.

3.4. Comparative PP and IFAC analysis

We applied PPI consisting of a list of criteria (see summary in Table S3) for comparative PP and IFAC analysis. This approach was utilized in several previous studies (Brombal et al. 2017). Weighting for all attributes was assumed to be equal (Bangkok Post 2017b). We evaluated PPI based on the information claimed by the project developer or EIA consultant written in the EIA reports against the PPI based on the information supplied by the affected villagers obtained from the interviews. Thus, we obtained two PPI values for comparison's sake. As can be seen in Table S5, interview questionnaires covered all PPI attributes. Additionally, as the scores for each attribute given by the affected villagers during the interview varied, we averaged them using Equation (1):

$$S_A = \sum \frac{S_{Ai} \times X_i}{X_T} \quad (1)$$

S_A is the number averaged score for each attribute; S_{Ai} is the score for each attribute given by X_i interviewees; X_T is the total number of interviewees. The total PPI scores for each criterion as well as the final PPI score of all criteria were used to determine if PP and IFAC of EIA process for the three cases supported normative, substantive, or instrumental rationales.

4. Results and discussion

4.1. Comparative evaluation of public participation

Table 1 summarizes the PPI results for each project based on claims by its EIA consultant and project owner versus those voiced by affected villagers during interviews. The scores of the five criteria for the Krabi case are also visualized in Figure 3. Table S6 in the SI summarizes the percentage of scores for each attribute based on the interviews regarding the Krabi case, which were used together with Equation 1 to average the affected villager's scores for each attribute. Several interesting findings can be extracted.

First, although EIAs of all projects were conducted by Thai consultants, the levels of their PPI compliance and scores were substantially different. The Krabi coal terminal complied with every attribute of every criterion except for Attribute T3, presumably because additional consultation after EIA submission is not mandatory under the Ministerial Notification and the ONEP's guidelines. The final PPI score for the Krabi case, as claimed by the EIA consultant and the project owner, was 0.81, suggesting the substantive rationale.

Yet, the PP process of the Hongsa coal-fired power plant and the DSEZ complied with much fewer PPIs, presumably due to the lack of regulatory requirements in Laos and Myanmar at the time when the EIAs of the two projects were conducted. The PPI score of the Hongsa case claimed by the EIA consultant and the project owner was 0.02, indicating a negligible PP process. The EIA report for the Hongsa coal-fired power plant was completed by 2007, but the details of PP have been regulated under the Ministry of Natural Resources and Environment's Environmental and Social Impact Assessment Art. 2.14 and 2.15 since 2013. Similarly, for Myanmar, the EIA report of the DSEZ was completed in 2014, though PP is only mandatory under Myanmar's new EIA regulation issued in 2015. For this reason, even though TOIP owners and consultants knew that robust PP may result in a solid understanding of the impact and mitigation measures partially leading to project support or acceptance by affected villagers, they apparently practiced PP when the law was regulated. Thus, the legal requirement was the key driving force behind implementing PP of TOIPs.

Interestingly, the Thai consultants barely presented evidence of public hearings or meetings of being open to potentially affected villagers surrounding the Hongsa coal-fired power plant or DSEZ. As evident in Table 1, the PPI scores for all attributes for the Hongsa coal-fired power plant were zero except for I1 and I2, which were the minimum, leading to scores of 0.33. However, Chulalongkorn University as the Thai consultant claimed to practice an even higher standard of PP than in Thailand for the case of the DSEZ. The head of the consulting team explained in a public hearing organized by the Thai National Human Rights Commission (Spanton 2014) (Figure S1) that the consultant team would follow the World Bank's EIA standards, a more stringent standard than that present in Thailand, because of the lack of EIA law in Myanmar (in 2014). Noticeably, despite this public claim of a higher PP standard, this Thai consultant only began conducting the EIA after construction began. This could happen in Myanmar, as well, because of the lack of regulated PP protocol or guidelines at that time. This would certainly have violated Thai EIA law if carried out in this manner in Thailand, as the relevant Thai regulation very clearly stipulates that the consultant must conduct the EIA prior to commencing construction (Office of Natural Resources and Environmental Policy and Planning 2012). Consequently, this also resulted in a

Table 1. PPI results for each TOIP.

		Krabi coal terminal		Hongsa coal-fired power plant		Dawei special economic zone	
Criterion	Attribute	1 Claimed by project owner or consultant	2 Claimed by affected villagers during the Interview	3 Claimed by project owner or consultant	4 Claimed by affected villagers during the Interview	5 Claimed by project owner or consultant	6 Claimed by affected villagers during the Interview
Timing	T1 Time of start of the consultation	0.66	0.38	0	0	0	0
	T2 Time-frame of the consultation period	1	0.39	0	0	0	0
	T3 Availability of additional consultation after submission of EIA report	0	0	0	0	0	0
Information provision	I1 Accessibility of information	0.66	0.66	NA	0.33*	NA	0.33
	I2 Completeness of information on project impacts	1	0.66	0.33	0.33	NA	0.33
	I3 Completeness of information on consultation arrangements	1	0.33	0	0	0.66	0
	I4 Understandability of information	1	0.33	0	0	NA	0.33
Incorporation of consultation results in the EIA report	C1 Channels available to submit comments	1	0.38	0	0	NA	0
	C2 Typology of consultation arrangements	0.66	0.28	0	0	NA	0
	C3 Scope of the consultation	0.66	0.66	0	0	NA	0
Public consulted	P1 Inclusion of stakeholders in the consultation	1	0.10	0	0	NA	0.24
	P2 Representativeness of the public opinion survey	1	1	0	0	NA	0.66
	P3 Targeted consultation of vulnerable groups	1	0.46	0	0	NA	0
Incorporation of consultation results in the EIA report	R1 Review of consultation results	1	NA	0	0	NA	NA
	R2 Feedback provided, to consultation results	0.66	0.25	0	0	NA	NA

zero score in the timing criterion for DSEZ in Table 1. This incident also suggested that a minimum requirement of how to apply the voluntary World Bank's EIA standards to effectively yield meaningful PP should be regulated to avoid underqualified application of such PP guidelines.

4.2. Comparative analysis of information accessibility

According to the interviews with affected villagers, IFAC appeared to be a serious issue for both the Hongsa coal-fired power plant and the DSEZ. As shown in Table 1, both TOIPs were poor in terms of the information provision criteria based on the claims by affected villagers.

As there was no legal requirement, for the Hongsa case, not all impact on the three sustainability dimensions were conveyed to the affected villagers. Instead, the majority of the project information that was supplied to the villagers by the company and the local government focused on the benefits of the project through publication in the newspaper and project developer' activities supporting community development displayed on public notice boards (I2 score = 0.33). Similarly, just the economic benefit was presented in the official EIA report of the Hongsa project, resulting in the same I2 score as evaluated by the affected villagers. This is different from the I2 score = 1 claimed by the project owner and consultant for Krabi case. The consultant maintained they offered completeness of information on the project impacts presumably because Thai PP guidelines require the consultant to do so. This emphasizes the importance of a regulated IFAC protocol to ensure sufficient IFAC to affected villagers.

Additionally, for Hongsa coal-fired power plant, other information included the relocation of villagers living close to the project area. Prior to starting construction, the company explained at a meeting that the power plant would release smoke, leading to temperatures rising in the area; therefore, the villagers would have to relocate to a resettlement site where they would receive housing and compensation. Nevertheless, the villagers had no chance to gain access to more information or participate in voicing their concerns regarding the relocation or other possible alternatives to such a measure. This resulted in zero scores for both public consultation and incorporation of consultation results in the EIA report criteria, just as shown in Table 1. For the same reason mentioned before, apparently, there was no regulated minimum IFAC requirement or sufficient practice from TOIPs.

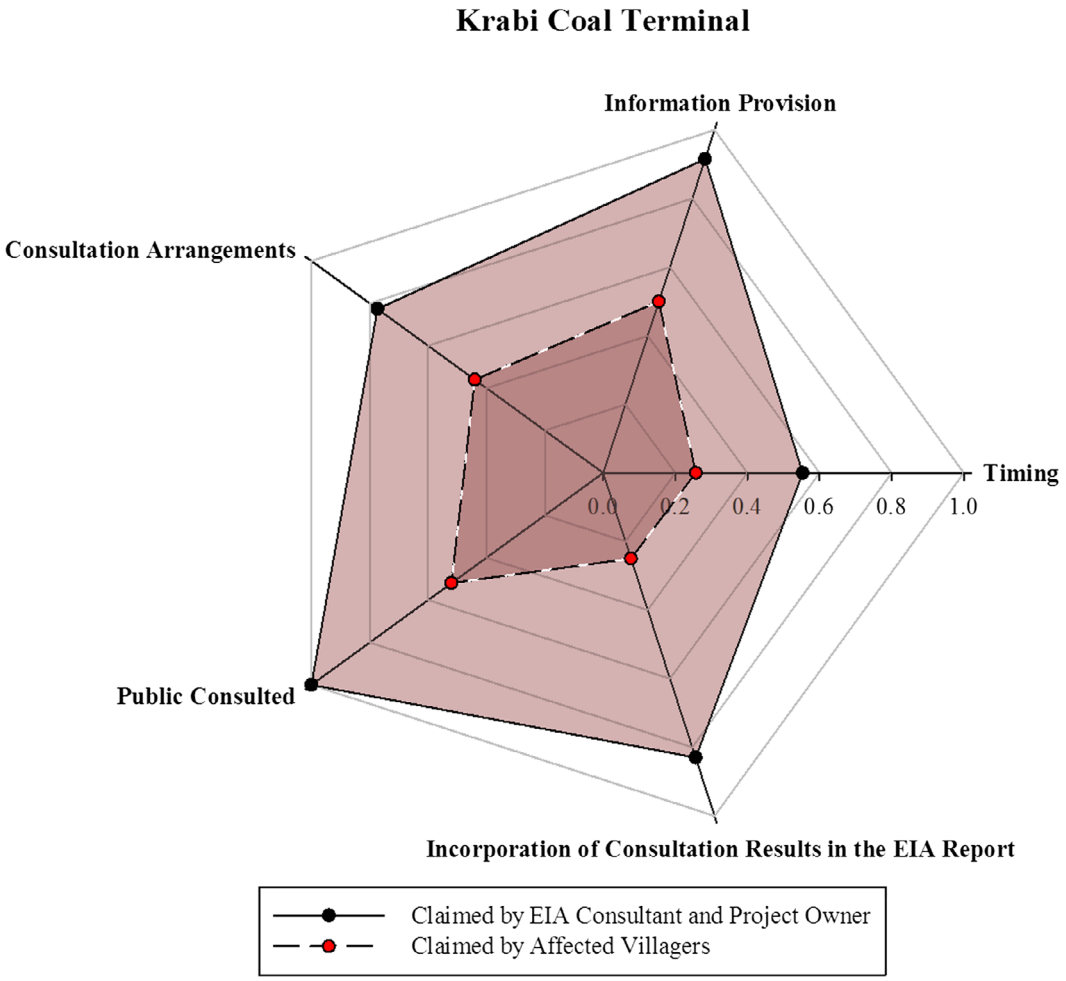

Figure 3. Visual presentation of PPI results for the Krabi case.

Similarly, before 2015, the absence of an EIA law and a PP law that granted the public the right to know had seriously affected villagers in the DSEZ case. Thant Zin from the Dawei Development Association provided a reflection on the comparison between previous challenges and the current situation as follows:

'In the past, the government tried to close our mouths but now they're moving their hands to close their ears instead.'

To visualize this statement, a survey revealed that the major proportion of affected people did not receive any official project information, such as printed materials or documentation from the company or government. Less than 10% received such materials, and half of them could not understand them (I4 score = 0.33). Instead, they were aware of the DSEZ only through word of mouth and the local media (I1 score = 0.33). Two-fifths of those households commented that the official information only covered the benefits of the project (I2 score = 0.33) (Dawei Development Association 2014, Spanton 2014). As information disclosure appeared to be deficient, it was difficult for the villagers, and civil society, in general, to comprehend the scope and nature of the DSEZ.

Interestingly, failing to receive information from the project developer and consultants impacted Dawei villagers with regards to the DSEZ project obtaining support from Thai civil society. For instance, Thai actors have been monitoring and sharing updates with the Dawei people on new developments published in the Thai media. Thai groups have also organized field trips for the Dawei people to learn from precedent-setting case studies, such as the Mae Moh coal-fired power plant and the Map Ta Phut industrial estate in Thailand, and have provided support during these trips through technical information and experience sharing. Certain Thai activists have contacted Thai journalists to collect and publish information from the ground. This strong collaboration between affected Dawai villagers and Thai civil society led to the initiation of a public hearing organized by the Thai National Human Rights Commission (Spanton 2014). This meeting was the first time the Dawei people had the opportunity to access detailed information on the DSEZ from the responsible Thai government agencies as TOIP investors as well as Thai consultant (Figure S1). Noticeably, the Dawei people had to exert much effort to attempt to obtain essential information that should be otherwise offered with positive PP. This poor PP may negatively affect the project and potentially result in project rejection or ambivalence (Cuppen et al. 2012), as evident from the adverse attitudes of the Dawei villagers toward the project (Dawei Development Association 2014).

4.3. Discrepancy between EIA consultant's claims and affected villagers' experience with the Krabi Case

As seen in Table 1, although the EIA of the Krabi coal terminal appeared to comply with almost every attribute of every criterion of the PPI, the scores claimed by the project owner and consultant were substantially different from those claimed by affected villagers during the interviews. The final PPI score as determined by affected villagers during the interviews was 0.39 compared to the final PPI of 0.81 from the project owner and consultant. This suggests that the project owner and EIA consultant claimed that PP was conducted in terms of the substantive rationale while the affected villagers experienced PP supportive of the instrumental rationale.

Interestingly, this discrepancy was not observed in the Hongsa case. The PP scores claimed by the EIA consultant and the project owner were similar to those of the affected villagers, i.e. zero for every criterion except for the criterion of information provision discussed previously. A similar trend was observed for the DSEZ case. This also indicated that different groups of villagers in the Krabi case experienced varying degrees and quality of PP, ranging from poor quality as per the affected villagers to a higher quality as stated by the project owner and the consultant. Here, we investigated the possible explanation for the discrepancy of each state of PP, namely public scoping, appraisal, and public hearing.

4.3.1. Public scoping

According to the public scoping summary report (TEAM Consulting Engineering and Management Company 2014b), the consultant claimed that they assigned 15 local researchers from three districts as project coordinators to jointly prepare the public hearing. They purportedly approached provincial officers, the local government, and the leaders of communities for consultation. They also apparently conducted meetings in five districts to explain the project. The report states that the consultant announced the date of the public hearing and disclosed the project information, thereby following EIA law by publishing the notice on its website, in an invitation letter, at the local government and district offices, and at local hospitals. Thus, the public scoping appeared to have abided by EIA law and obtained a high score (0.66) if not the maximum score (1) as shown in Table 1.

On the other hand, for the same public scoping, our interview distinguishes the affected villagers into three groups. The first group included the people who did not participate in this process. The second consisted of those who did participate in this meeting but did not know it was part of the EIA process. The last group was comprised of villagers who participated in the meeting and were aware of its purpose.

Many village representatives (66.7% of the interviewees) first heard about the project after the public scoping process had already begun. Several interviewees even now are unsure regarding which meeting was supposed to be the public scoping. For the villagers who did join the meeting, many did not know it was a public scoping meeting and registered for the event without understanding its purpose. In particular, villagers from Klong Rue village expressed that:

'We were aware of the meeting from our neighbors. They told us that it was a concert by some famous Southern singers, and that there would be a crocodile show.'

This phenomenon highlighted a serious problem for stakeholder analysis and public-scoping events with the Krabi project. Noticeably, the P1 score (inclusion of stakeholders) had the largest discrepancy (1, as claimed by the consultant, and 0.1, claimed by the affected villagers) of all the PPI scores. Similarly, as seen via the I3 Attribute in Table S6, while 33.3% of the affected villagers revealed that they knew timing, contact point consultation arrangements, and information on access to this public scoping, another 66.7% reported they received no such information. This indicated that the approaches to scheduling public-scoping events, such as publishing the notice on its website, at the local government and district offices, and at local hospitals, were not effective in reaching villagers. As will be covered later in the public hearing section, mailing an invitation letter directly to the villagers was the most effective means, and resulted in 100% of the affected villagers acknowledge the event. Apparently, the village representatives, including those from Klong Rue village, were fishermen and lived very close to the coal terminal. Thus, their way of life would have been directly affected by the project, and they are a high interest and high influence group (Table S1), and need to be included in the PP. Failure to do so could potentially bring about project rejection or ambivalence (Cuppen et al. 2012).

4.3.2. Appraisal

The same issue was also reported for the appraisal step of the EIA. According to the draft EIA report (TEAM Consulting Engineering and Management Company 2014a), the consultant disclosed the project information via four channels and gathered information through meetings with stakeholder representatives and focus groups and through interviews with villagers, government officers, community leaders, imams, and members of the private sector. After the data collection was complete, the consultant drafted and disseminated a summary report to 35 relevant government offices.

Notwithstanding this, the interviewees expressed their experience of the appraisal phase in a way that conflicted with the consultant's summary report. The locals said that after they had – of their own initiative – gained an increased awareness of the project, they asked for more information and for an opportunity to be heard

but they were allegedly ignored by the local government and EGAT. Moreover, the consultant only approached the local government to ask them to persuade the locals to agree with the project, completely disregarding the voices of the potentially affected villagers. This partially resulted in a poor R2 score (0.25) (feedback provided to consultation results) as evaluated by the affected villagers in Table 1.

Several interviewees were unsure as to whether it was the consultant or EGAT that had surveyed the village and asked for their signatures and information. One person was able to identify that the surveyor was the consultant, but said that they came to the villages at a busy time when most villagers were out working. The villager believed this was purposeful so the consultant could get information about their household and obtain signatures from the elderly and children staying home alone. Here, it can be clearly seen that the villagers negatively regarded the PP conducted by the consultant based on it only being for instrumental purposes. Accordingly, the Klong Rue villagers said that they did not trust the consultant and would no longer allow them to gather information from within the village.

Following this controversy, the consultant planned to conduct a meeting with the villagers. Up to 800 villagers who opposed the project wanted to participate, but EGAT and the local government cancelled the meeting. The villagers submitted a complaint regarding the meeting's cancellation to the district officer and ONEP as they believed that the appraisal process did not comply with EIA law. The government agency's response was that it would only start considering the complaint after they received the final EIA report from the consultant. This is compatible with an Expert Review Committee member making clear in the interview that:

> … expert committees just review the report based on evidence. If in the project areas there are conflicts between the communities and EIA consultants related to the quality of evidence, it is the consultant's duty to resolve this with the communities.

Here we can see that through the failure to monitor the EIA consultant or acknowledge the villagers' complaints, the villagers lost faith in the effectiveness of PP during the EIA process and have deemed it useless to participate in any further public hearings, potentially leading to project rejection and ambivalence (Cuppen et al. 2012). Additionally, their disillusionment with the government's refusal to investigate or hold the consultant accountable has further bolstered local public opinion against the project and will hinder stakeholder engagement in the future. Clearly, the appraisal process has passed with significant contention.

4.3.3. Public review

As expected, without any intervention or monitoring of the consultant during the EIA process, the number of conflicts between the consultant and local villagers invariably rose. Eventually, the assessment moved to the final phase, the public review, and the consultant sent invitation letters directly to the villagers. All the interviewees acknowledged the notification this time. The local people wanted to participate in the public hearing to express their opposition to the project. However, a local activist supporting the locals said that:

Figure 4. Approximately 300 villagers took the opportunity to express their opposition after they were denied access to the meeting room because it was allegedly full, mostly with supporters.

> We know that EGAT is preparing up to 800 soldiers and many people who were bought off to support them, so we're sure that there is no space for us. (in the meeting)

On the day of the last public hearing, the opposing villagers were denied access to the meeting room because it was allegedly full. Surrounding the room were around 500 soldiers tasked with security and identification of the participants. After being turned away, approximately 300 villagers located the waiting Thai media and used the occasion to convey their opposition (Figure 4).

Throughout the one-day meeting, the consultant explained the basic details of the project and the environmental mitigation measures from the EIA report draft. The consultant permitted participants to voice their opinions; however, even at this last public hearing, critical information in the draft report was still unclear. For instance, based on the plentiful mangrove forest, the consultant had not yet finalized how to transport coal through the forest to the proposed power plant.

Moreover, the meeting room was full of supporters of the project, who could be discerned by their loud clapping whenever participants offered positive opinions about the project. Thus, overall, the scores claimed by the affected villagers were only around half of what was claimed by the EIA consultant and the project owner for every criterion (Figure 3). The gradual development of conflict between the project proponent and the affected villagers was obvious evidence of unintended consequences from poor PP. This is preventable only if an EIA consultant sincerely conducts PP for a substantive or normative rationale. This will cause the affected villagers to be open minded with respect to the information and they may eventually support or accept the project (Cuppen et al. 2012).

5. Conclusions and recomvmendations

From the analyses of the two TOIPs in the two countries in comparison to the national-level project, several interesting phenomena can be noted.

Firstly, although the Thai system had clear regulations and protocols for PP and IFAC, the PP and IFAC for the Krabi coal terminal may still not achieve its true objectives. Apparently, PPI scores claimed by the project owner and consultant were substantially different from those of various affected villagers. Several concerns from villagers during the interviews reflected a public confidence problem, which naturally will lead to conflict between affected villagers and the project owner. This situation underlies the protest of the project by local villagers and an anti-coal group, which subsequently resulted in the government's decision to start the EIA process over to make PP more transparent so as to garner public trust (Bangkok Post 2017a). Clearly, although the consultant claimed to abide by EIA law and PP regulatory protocols, it was not enough for the affected villagers and insufficient to ensure the sustainability of the project.

Hence, the project owner, consultant, and responsible authorities must develop a system to guarantee the quality and meaningfulness of the PP and IFAC. In addition, a system to monitor consultant performance, especially pertaining to PP and IFAC, is needed. Without a monitoring system throughout the EIA process, enforcement of the law tends to fail.

For Laos and Myanmar, which, in the past, did not require PP and IFAC to the same extent as Thai regulation, the Thai consultants for the projects did not apply the Thai PP and IFAC framework, instead ignoring the process. This supports the notion that TOIPs take advantage of weaker legal protections and more restricted political spaces in neighboring countries. This also illustrates importance of adequate PP and IFAC regulation and detailed protocols in neighboring countries for enhancing PP and IFAC performance of TOIPs. Fortunately, both Laos and Myanmar just issued new PP and IFAC regulation and detailed protocols, and this should inspire the EIA consultants of TOIPs to integrate appropriate PP and IFAC by learning from their problems in Thailand.

Interestingly, the strength of civil society played a significant role in varying the outcomes. In the Krabi case, local people learned about the project and its potential effects through local knowledge and support from academics and local NGOs. Unfortunately, local people in the Hongsa case faced much more difficulties. There has been only one source of information – the government and consulting firm – as there are no NGOs or academics to support the villagers. In Dawei, without an EIA procedure law, civil society is unable to target a responsible government body or mechanism through which to request the EIA report. Collaboration with Thai civil society, however, did provide support in form of following the progress of the project as well as in learning from examples of poor environmental management cases in Thailand.

Aside from requiring accountability from Thai consultants and government agencies, there remain pertinent questions regarding the necessity of a regional-level EIA and expansion of regional collaboration such as the Reginal Technical Working Group on EIA mentioned in the introduction. Even though there is still much challenging collaborative work to be carried out, this concrete progress provides hope for the development of a regional EIA as a crucial support tool for environmental protection and sustainable development in the region.

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