

Power and environmental conflict: A case study of the Mae Moh power plant in Thailand

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by

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Abstract

Managing environmental conflict is becoming increasingly important. This research explores management's responses—mediated by the Thai government—to environmental conflict with the local community. The central research question of this thesis is 'How did the Electrical Generating Authority of Thailand (EGAT) respond to local resistance arising from the environmental impact of the Mae Moh coal-fired electricity generating power station and how did this response demonstrate the unequal power relations of the key players in the dispute?'

This case study monitors the environmental dispute, with the research focusing on documenting the conflict between government, EGAT and the communities during the course of this dispute. Utilising the insights from *political ecology theory* this thesis looks at the *unequal power relations* that shape the dynamics of the conflict and outcomes of this dispute and how this has impacted on management's responses in EGAT. The study has broader implications for understanding contemporary managerial responses to environmental conflict, not only for Thailand.

After the Mae Moh power plant started its operations, local villagers were affected by the emissions released from the power plant, causing the conflict between EGAT and the local residents. The communities had to resort to court action in an attempt to achieve resolution. This dispute involves more than the two main players and is influenced by political forces and traditions in Thailand as well as structures of government and the law.

In order to explore the uneven power relations that shape the contours of and outcomes of an environmental dispute the research design chosen is a single case study of the state enterprise at Mae Moh. It adopts mainly qualitative research instruments based on individual interviews to generate primary data about the conflict and the different perceptions of the major players and the outcomes that were imposed. It also draws on secondary data to provide more independent insights into the dispute.

Two trips have been made to Thailand to conduct fieldwork for this study, when data was collected from both primary and secondary sources. The expected outcome of the research is to make a significant contribution to the literature on management and environmental conflict issues, specifically in the social context of a less-developed country in Asia. While the area of state enterprise-NGO conflict resolution has been explored thoroughly in Western literature, there has been little research in less developed countries such as Thailand.

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Statement of originality

The work contained in this thesis has not been previously submitted to meet requirements for a degree. The thesis does not include previously published components or written by another author except where due reference is made.

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Abbreviations and special terms

ADB	Asian Development Bank
APP	Air Pressure Pulse
CCOP	Coordinating Committee for Geoscience Programmes in East and South-East Asia
CDM	Clean Development Mechanism
CEM	Continuous Emission Monitoring
CSR	Corporate Social Responsibility
CSO	Civil Society Organisation
CMA	Conflict Management Alternatives
ECR	Environmental Conflict Resolution
EGAT	Electrical Generating Authority of Thailand
EIA	Environmental Impact Assessment
EPA	United States Environmental Protection Agency
ERC	Energy Regulatory Commission
FEMA	Federal Emergency Management Agency
FGD	Flue Gas Desulphurisation
FT	The Automatic Tariff Adjustment
GDP	Gross Domestic Product
GIN	Greening of Industry Network
GONGO	Governmental Organised Non-Governmental Organisation
GRP	Gas Release Pulse
HREC	Human Research Ethics Committee
IGO	Intergovernmental Organisation
INGO	International Non-Governmental Organisation
ISO	International Organisation for Standardisation
Jit-asa	EGAT's voluntary unit
Lao PDR	Lao People's Democratic Republic
LED	Light Emitting Diode
NDIR	Non-Dispersive Infra-Red

NGO	Non-Governmental Organisations
Ngan	A measurement of land size
OECD	Organisation for Economic Cooperation and Development
ONESDB	Office of the National Economic and Social Development Board
OTOP	One Tambon One Product
PAD	People's Alliance for Democracy
PCD	Pollution Control Department
PDA	Population and Community Development Association
Rai	A measurement of land size
RPP	Rock Pressure Pulse
SCG	Siam Cement Group
SEC	Thai Security and Exchange Commission
SET	Stock Exchange of Thailand
SIA	Social Impact Assessment
SPA	Strategic Perspectives Analysis
SRP	Stemming Release Pulse
Tambon	Subdistrict organisation
TBL	Triple Bottom Line
UDD	United Front for Democracy
UNFCCC	United Nations Framework Convention on Climate Change
USEPA	United States Environmental Protection Agency

1 Introduction

The Electrical Generating Authority of Thailand (EGAT) is Thailand's state enterprise that provides electricity for the whole country. EGAT built the Mae Moh power plant in 1972. Thirteen power generating units were built on the site, along with a coal mine.

After an expansion in the 1980s, the plant expelled 1.6 million tonnes of sulphur dioxide annually. The expansion also meant that the plant area encroached on local residences. Since the Mae Moh plant was established, over 30,000 local residents were displaced and thousands suffered from respiratory issues due to the exposure to sulphur dioxide and other chemicals expelled from the power plant. A study by Greenpeace Research Laboratories (2005) shows that 4.3 million tonnes of fly ash is produced by the power plant annually.

Local residents complained that coal mine dust was being blown into their homes and farms and that the filters the power plant had been using were inadequate. Additionally, there have been over 200 respiratory-related deaths.

Despite this, EGAT still insisted that the emissions were lower than those specified in the agreement with the National Environmental Board and that the emissions were not harmful to the villagers and the environment. The government continued to grant permits for the plant's expansion despite the communities' concerns. Complaints made to the public relations officials and financiers of Mae Moh power plant were ignored. The Occupational Health Patient Rights Network of Mae Moh filed a court case against EGAT (ASTVผู้จัดการออนไลน์ 2009). As a consequence, EGAT was ordered to pay compensation to patients affected by its operation, and to arrange for their resettlement. Villagers who were not involved with the case also received assistance for resettlement from EGAT, along with compensation for the relocation.

The thesis investigates this conflict seeking to answer *the key research question* '**How did EGAT respond to local resistance arising from the environmental impact of the Mae Moh electricity generating power station and how did this response demonstrate the unequal power relations of the key players in the dispute?**' *Subsidiary research questions* are: (1) What was the environmental impact of the EGAT power station on Mae Moh residents, and how did they respond? (2) What key management changes and other responses did EGAT bring to Mae Moh in response to the environmental conflict? (3) In what way does the Mae Moh case study demonstrate the agency of local villagers and show how unequal

power relations shaped EGAT's response to environmental conflict? (4) What are the implications of the environmental conflict at Mae Moh for the literature on environmental conflicts in state-owned enterprises in less developed nations?

Prior to Chapter 6, the thesis examines literature covering Thai politics and culture in order to analyse what influences were brought to bear on the conflict dynamic. In addition, a number of Western theories of power and conflict are reviewed to help explaining the phenomenon.

Then, the methodology used to determine the answers to the research questions is described. Lastly, key findings in this case study report the environmental impacts from EGAT's operation in Mae Moh, the villagers' reactions to them and EGAT's strategy in managing the conflict.

1.1 Environmental conflict

Environmental conflict is an increasingly prevalent issue globally. This provides a challenge for public and private organisations. Often environmental damage emerges because the market does not put a price on non-economic cost.

Environmental conflict occurs when public or private sector organisations use their power and influence to disregard local communities' objections to public and private sector investments causing environmental impact.

Conflicts are also at the heart of several environmental concerns and often necessitate institutional and policy adjustments (Heikkila & Schlager 2012). Heikkila and Schlager (2012) suggest that numerous actors: governmental organisations, courts, mediators and law makers, are confronted with and forced to acknowledge and settle a broad array of environmental conflicts.

Hodge (2014) elaborates that the world's communications network is empowering communities, and the communities are no longer prepared to tolerate development policies that are not consistent with their culture and objectives. This movement is being motivated by people's aspiration to have a voice in their future, giving them hope for their future. He explains that conflict happens when that faith is destroyed or jeopardised.

Hodge (2014) further identifies that population increase, urbanisation, climate change, the growth of developing economies, increasing inequality between rich and poor and global concerns about the environment all lead to stress and conflict in our increasingly connected

world. In addition, Hodge (2014) notes that mining conflict is an escalating phenomenon. This is related to the Mae Moh case study because EGAT also engages in mining activities in Mae Moh. In the past, international donor organisations were strongly resistant to communicating with the mining community, but at present they eagerly acknowledge the possible contribution that mining can make to the economic development of emergent countries (Hodge 2014). Hodge (2014) suggests that improving relationships with local communities is critical to the success of any mining activity and that the foundations of relationships with host communities are truthfulness, honour, honesty, fairness and openness. The case study of EGAT will investigate whether this occurred at Mae Moh.

The growing frequency of environmental conflicts in the United States has generated an extensive and rich literature on environmental conflict resolution (Heikkila & Schlager 2012). Griewald and Rauschmayer (2013) note that non-governmental organisations (NGOs) anticipate that management will surpass its legal obligation. Further, Jaskoski (2014) indicates that local communities are often included in project approval processes, something prompted by the extraordinary stressful clashes concerning environmental licencing.

This thesis examines the role of power in the environmental conflict at Mae Moh, in Lampang, Thailand. This is a significant contribution as countries such as Thailand are rarely studied in the mainstream management literature regarding management responses to environmental conflict. Furthermore, the thesis explores the systems management that EGAT employed to deal with this conflict and investigates how relationships between EGAT and the third sector—NGOs representing villagers’ interests—began and developed during the extent of the conflict. Lastly, the thesis scrutinises how social responsibility initiatives could prevent disputes among corporations and local residents.

1.2 Corporate social responsibility

Corporate social responsibility (CSR) is a key framework through which management literature examines management responses to environmental conflict and other issues of social inequality. Crane, Matten and Spence (2014) state that the term CSR is essentially an American idea that strongly displays Anglo-American business conditions. They argue that historically, CSR subjects were taught in a business ethics programme. As a result, various issues regarding the relationship between business and society have been researched primarily from an ethical outlook. Moreover, some of the preeminent CSR academics currently have a foundation in philosophy. Crane and Matten (2010, p. 5) define business

ethics as ‘the study of business situations, activities and decisions where issues of right and wrong are addressed’. An area under CSR that is mentioned in business, politics and academia is sustainability (Crane, Matten & Spence 2014). In a business context, sustainability seeks to set out how an organisation can survive without impacting the ecological, social and economic endurance of its present and future environment. The Mae Moh case study relates to the issue of sustainability as it reports the environmental impacts caused by EGAT at Mae Moh.

1.3 The Mae Moh power plant

Thailand’s state-owned enterprise, the EGAT, has a subsidiary in Mae Moh district, Lampang province. Mae Moh EGAT is connected to two environmental crises, in 1992 and 1998. The environmental crises are based on local villagers’ exposure to sulphur dioxide (Boonlong 2011). Boonlong (2011) adds that over 30,000 local people had to relocate and thousands are affected by respiratory issues due to sulphur dioxide and other chemicals expelled from the power plant since it began operating. Moreover, Greenpeace Research Laboratories (2005) research reveals that 4.3 million tonnes of fly ash is generated by the power station each year. Greenpeace (2005) states that this can potentially be toxic for the environment and living organisms. Boonlong (2011) notes further that since its expansion in 1980s, the power station has been expelling 1.6 million tonnes of sulphur gas yearly. Additionally, a power plant expansion at this time meant that the site is now closer to local communities.

As a result of the conflict between EGAT and the local communities, the Occupational Health Patient Rights Network of Mae Moh was initiated to assist those affected by the plant. In addition, another NGO is involved in the conflict resolution, the Population and Community Development Association (PDA). The PDA was founded by Mechai Viravaidya, a former senator. The PDA is involved in Mae Moh conflict resolution as an NGO contracted by EGAT to improve the quality of life in Mae Moh as a part of EGAT’s CSR effort (แผนกสื่อสารงานเชื้อเพลิง กสฟ-ค. อสอ. 2011). The network is critical of EGAT for using coal fuel and filed a lawsuit against EGAT for environmental degradation and its impacts. Greenpeace also made objections to EGAT’s use of coal fuel (Cohen 2006).

The adverse environmental impacts not only damage local residents’ health, but also their landholdings, crops and livestock. After the crises due to sulphur dioxide in 1992 and 1998, EGAT installed Flue Gas Desulphurisation (FGD) systems into generating units 4–13 and

retired Units 1–3. Despite the environmental crises, EGAT was granted permission to extend its mining licence by the government.

The crises facing the Mae Moh residents captured the attention of people in Thailand's capital city due to the involvement of Greenpeace, which published information on the hazards of coal fuel and held EGAT's financier, the Asian Development Bank, responsible for the health and other problems of the local residents, showing a wider international interest in the problem (Greenpeace Philippines 2005). UNESCO also acknowledged the importance of the issue in its report by Boonlong and considered it an international problem (Boonlong 2011).

In order to gain a deeper understanding of the dynamics of this conflict, it is crucial to build a picture of the Thai context; this will be addressed in the next section.

1.4 The Thai context

The political and regulatory context that EGAT operates within is crucial to understanding the power relations in this case study. This section will address traditional Thai society and then consider Thailand's changing social context.

Vichit-Vadakan (2005) describes how cooperation between people and the opportunity to associate was restricted to the grassroots class in traditional Thai society. A patron-client relationship pattern has dominated Thai society for the last five centuries (Neher 1977; Vichit-Vadakan 2005).

Vichit-Vadakan (2005) argues that state power, and state agencies, did not truly penetrate the entire society, and did not authentically influence the local unit in traditional Thai society. In more recent times, however, a powerful force towards development allowed state organisations to infiltrate community life. Horizontal community ties were damaged and deteriorated unexpectedly in the face of a strong state presence.

Moreover, in the past, while there was a large social gap between the *hoi polloi* and the elite, there were still connections based on kinship and mutual benefit which allowed the society to function (Vichit-Vadakan 2005).

While Vichit-Vadakan (2008) states that it is compulsory for Thai corporations to comply with the 2002 Royal Decree on Good Governance, Uwanno (1998) notes that the old governing system focused on the personalisation of power, which led to a lack of governance

in Thailand. Leaders were expected to have high moral standards, but there were no mechanisms to assure that they would operate appropriately. Thus, as Uwanoo (1998) highlights, it is challenging to transition from the old traditions and to separate ‘person’ from ‘position’. Therefore, it can be argued that in order for NGOs to have legitimacy they must have prestigious elites as their board members.

1.5 Political connection

In the Mae Moh case study, EGAT needs to rely on the government to pass legislation concerning environmental practices. At the same time, EGAT has the ability to persuade government officials to pass laws in favour of EGAT considering its status as a state enterprise. In regards to the Occupational Health Patient Rights Network, when it needs to be heard, it seeks assistance from another authoritative figure, such as the National Human Rights Commissioner. In this study, it was observed that it is essential to have political connections.

The evolution of Thailand’s politics forms the condition and structure of connections and moulds the industrialisation and economic advancement. Connections facilitate corporations in achieving their plans and handling irrational issues (Sitthipongpanich 2004).

Sitthipongpanich believes that political patronage assists business expansion. Fundamental institutional attributes, such as business association structure and ownership restrictions, are significant in shaping connection formation. In addition, big business associations are likely to shape industrial growth and have less difficulty adapting to economic policies.

Moreover, as Sitthipongpanich (2004) points out, corporate governance and transparency might be hindered by business ownership concentration, where several shareholders are related. The government plays an important role in industrialisation and economic legislation. Hence, governmental relations can provide an organisation with commercial advantages, such as superior information and favoured treatment.

In order to gain preferential treatment from the government, firms appoint leading politicians to their board of directors or give them shares. Sitthipongpanich (2004) further notes that influential generals and bureaucrats are engaged through directorship or ownership. Phipatseritham and Yoshihara (1983) agree that political connections are imperative for business advancement and sustainability. Furthermore, firms rely on their political connections to facilitate legislation or to acquire permission for their projects.

In addition to comprehending the significance of political connections for an organisation's advancement and sustainability, in order to better analyse the Mae Moh case study, it is also essential to examine the changing social context of Thailand.

1.6 *The changing social context*

The changing social context in Thailand also contributes to the power relations in the case study. Prior to 1997, people's participation had more weight than at present. The new constitution of B.E. 2540 (1997) allowed businesses a stronger role (Wankaew 2005). As a consequence, the people's voices have been minimised. In this context, EGAT may have given less weight to the villagers' disagreement with the expansion of its power plant.

While the new constitution of B.E. 2540 (1997) caused a deterioration of the mechanisms of checks and balances and a weakening of the people's participation, concurrently active participation of business was encouraged (Wankaew 2005). In addition, populist government policies enhanced the capacities of middle class groups and institutions. As an outcome, executive officials found that they were directly responsible to, and answered to, the chief executive rather than the people. Thus, civil society found itself in an even more complex socio-political position as democracy deteriorated and civil society was disrupted. In addition, centralisation has led to more responsibilities for local authorities.

Albritton and Bureekul (2002) note that there is substantial uncertainty when it comes to the notion of civil society in political science. They indicate that the notion is more puzzling in democratic consolidation. The conception becomes even more uncertain in the Asian context. Girling (2002) defines it as a means to political resistance, while Albritton & Bureekul (2002) see civil society as filled with a Gramscian outlook of a perpetual struggle for political and policy power against the threat of the state's abuse of power.

Wankaew (2005) finds that government interferes in civil society regardless of whether people agree that it should or not, and that corporations utilise the public field more efficiently than civic groups. Consequently, civil society is a conflicted realm where numerous groups exist with their opposing interests and ideologies.

Essentially, civil society is what all interest groups use to rationalise their actions. Wankaew (2005) explains that the state aspires to popularise its own model of civil society. For example, the Ministry of Interior established the civil society's forum and initiated civil

society at provincial, district and subdistrict levels. Regardless of this, later, civil society was exploited to allocate and control the government village fund.

1.7 Western literature

After reviewing the literature on the Thai social context, it is helpful to delve into the Western literature to examine appropriate theories.

Marxist theory insisted that in order to understand a society, the mode of production must be studied (Trainer 2010). He remarked that the inequality of wealth and power constructed the dynamic of class struggle and its consequences. In Weber's domination, Weber proposed different ways one could dominate a society.

Marxist theory and Weber's domination both describe how unequal power could create an impact. Regardless, they do not explain the dynamics in the Thai context. Additionally, there are differences between class struggles in conventional societies and modern semi-urban contexts.

Further, conflict resolution methods are explored in order to grasp EGAT's responses to this dispute. Next, regulation theory is considered in understanding the roles of governments in managing conflicts. This is relevant to EGAT because it is a state enterprise. Therefore, it has substantial ability to influence the legislation on environmental practices. Moreover, it is applicable to the cases where the private, and a third sector, collaborates with the public sector to regulate an issue.

At this point, the Thai context has been considered, along with Western literature, to offer both the context and theory for consideration of the case study. The next component of the chapter will address the research questions to reveal the focus of this thesis.

1.8 Aims

This thesis intends to attain an understanding of the nature and complications of the environmental conflict around the Mae Moh power plant; that is, the way in which unbalanced power in the case study unfolds. In addition, this thesis attempts to distil the implications of the Mae Moh power plant conflict for the management literature on environmental conflict. It also contributes to the management literature by addressing EGAT's approaches to resolving the dispute caused by the environmental crises, and analysing the effectiveness of these approaches. In addition, the conflict management methods and measures EGAT used to reduce tension are examined.

Furthermore, the central issue of this thesis investigates how conflict between a state enterprise and Thai civil society is responded to by EGAT's management. Additionally, it seeks to explain mechanisms adopted to handle the conflict. Lastly, it aims to examine relationships established between EGAT and the third sector.

This research will stimulate studies that analyse the responses to environmental conflicts from other organisations (perhaps from a different sector) and other countries. Moreover, future studies may explore different outcomes of the conflict, if each party reacted differently.

In addition, the findings could act as guidelines for other corporations or for local residents dealing with environmental disputes resulting from a business operation. Further, this thesis could provide information and strategies for policy-makers.

1.9 Research questions

The central research question of this thesis is 'How did EGAT respond to local resistance arising from the environmental impact of the Mae Moh coal-fired electricity generating power station and how did this response demonstrate the unequal power relations of the key players in the dispute?' The subsidiary research questions are: (1) What was the environmental impact of the EGAT power station on Mae Moh residents and how did they respond? (2) What key management changes and other responses did EGAT bring to Mae Moh in response to the environmental conflict? (3) In what way does the Mae Moh case study demonstrate the agency of local villagers and show how unequal power shaped EGAT's response to environmental conflict? (4) What are the implications of the environmental conflict at Mae Moh for the literature on environmental conflict in state-owned enterprises in less developed nations?

The key research question attempts to explain how EGAT responded to the environmental impacts it is believed to be responsible for. The responses from EGAT are regarded as important because it is a state enterprise. Therefore, it is able to respond to the conflict more effectively than a non-state business due to its influence on regulating the national standards.

After the examination of Subsidiary Research Question 1, Subsidiary Research Question 2 deals with EGAT's responses to the villagers' reactions to the environmental impacts. This question investigates how a state enterprise, with all its resources, responds to an environmental conflict, compared to private companies. It will also look at the attempts made

by EGAT to attain legitimacy after being accused of producing harmful environmental impacts and endangering local residents.

The next subsidiary research question focuses on how the local groups exercised their agencies and the influence they had on EGAT's responses. Finally, Subsidiary Research Question 4 identifies the implications of the Mae Moh environmental conflict for literature on state-owned enterprises in less developed nations.

1.10 Methodology

Qualitative research was selected to analyse the Mae Moh environmental conflict case study. Qualitative data is believed to be an effective method for analysing complicated social systems (Eisenhardt & Graebner 2007). It can present a better understanding of the context compared to quantitative research (Gray 2009).

In order to uncover the answers to the research questions, interviews were conducted. The type of interview chosen was a semi-structured interview to allow interviewees to add relevant information. Informants include those working for EGAT, relevant governmental organisations, Mae Moh villagers, a politician and a member of the Occupational Health Patient Rights Network.

The researcher was granted ethics approval to ensure that the research was conducted under the rules of the Human Research Ethics Committee and the Human Research Ethics Advisory. This ensured the protection of the participants in the light of the sensitive matters investigated.

1.11 Key findings

Key findings of this study relate to the three main themes from the data analysis: pollution, villagers' demands and EGAT's responses. These themes provide significant insight into the conflict dynamic. These three themes are addressed in this section.

EGAT's negligence in not controlling the levels of pollution created by the power station resulted in two episodes of environmental crises that had adverse impacts on the local residents in Mae Moh, their landholdings, livestock and crops. The pollutant behind both crises was sulphur dioxide. Nonetheless, news and interviews show that other environmental effects; namely dust, water pollution, noise, vibrations, odour, deforestation and smoke, also originated from EGAT's operations. Villagers confirm that they are still facing the adverse

impacts from EGAT's operation even after EGAT implemented a stricter environmental policy.

Due to these impacts, villagers responded by seeking medical examinations and showing an increased concern for their health, making complaints and demands and contacting EGAT. In extreme cases, villagers protested and filed lawsuits against EGAT.

In response to the villagers' reactions to the environmental impacts, EGAT attempted to establish trust and understanding as well as build relationships with local communities through various schemes. Next, EGAT provided funding for local villagers. In order to ensure that it earned trust, EGAT created a stricter environmental policy. Lastly, EGAT arranged for the relocation for villagers to remove them from areas surrounding its site.

Regarding the implications of the case study for the literature on managerial responses to environmental conflicts, it appears that EGAT found the level of pollution satisfactory as long as the environmental impacts produced from electricity generation were within the limit of the national standard. Moreover, a part of the conflict arose from the issue of employment where local residents wished to become, or remain, EGAT employees. In addition, villagers criticised EGAT's efforts in facilitating resettlement for several reasons, such as the loss of agricultural lands and certificates of ownership. The Power Development Fund also caused issues for EGAT, where villagers considered the fund was allocated unfairly, or that grants were not made for the right projects. Some even described the Power Development Fund as problematic because money brings problems. Other funding concerns will be elaborated later in the thesis.

In order to meet the requirements of the Royal Forest Department Regulations (B.E. 2548 or 2005) regarding use of the national preserved forests as well as the Primary Industries and Mines Department Regulation (no. 8) B.E. 2558 (2015) on licence renewal and transfer concessions, EGAT is required to organise a civil society forum every time it proposes a new project. For this reason, it was willing to go out of its way to satisfy the Mae Moh residents. Another implication is that EGAT faced exaggerated demands or demands were not rational. While some villagers made excessive demands, others did not acknowledge that EGAT was already handling a large number of demands.

Even though EGAT is a state enterprise, the Supreme Administrative Court still ruled that it must pay monetary compensation to the affected villagers.

There is only one major key opponent of EGAT in this case study: the Occupational Health Patient Rights Network of Mae Moh (although it does cooperate with other organisations). It opposed EGAT's use of coal fuel. Moreover, it also acted as an interest group, consistently demanding monetary compensation. When it did not receive the desired results, it involved other players in the conflict to achieve its preferred outcomes.

Another implication of the case study is the demand for electricity, which led to the approval of the plant expansion and the extension of EGAT's mining licence. It is not surprising that coal was chosen by the operators, as it is cheap to use as a fuel in electricity generation. Coal was favoured even though there was local resistance in Mae Moh due to prior environmental crises.

Another implication is that a local disagreement was published, where it was stated that a family was forced to move out of Na Sak as the village leader disagreed with the fact that a child was affected by the adverse impacts.

A significant implication is the role of Thai politics, where a patron-client relationship pattern has shaped the outcomes of this conflict. The last implication from the case study is that the conflict resolution should have involved all parties.

1.12 Contribution

There is a growing inclination from Asian governments to encourage CSR in businesses (Noronha et al. 2013). The case study investigates this with regard to how EGAT responded to the Mae Moh environmental conflict. Specifically, it considers how CSR outcomes are impacted by attempts by a variety of stakeholders to exercise their power in pursuit of their preferred outcomes. EGAT is an interesting organisation to study in this regard, as it is a state enterprise rather than a private company. Additionally, the Mae Moh environmental conflict is significant due to the international attention it has attracted (Boonlong 2011; Eley et al. 2008; Greenpeace Philippines 2005).

CSR has obtained considerable attention as a part of business strategies since the 1990s (Skouloudis, Evangelinos & Malesios 2015) and, accordingly, academic attention has focused on the growing field of CSR literature. Despite this, as Belal and Owen (2007) and Belal and Momin (2009) point out, most research on CSR is built around developed nations. There is doubt whether the abundant CSR studies deriving from Western contexts are

applicable to less developed countries. As a result, this thesis seeks to make a valuable contribution to managerial literature by addressing the research questions stated above.

1.13 Thesis outline

This section of the chapter will provide an overview of other chapters in the thesis.

Chapter 2 is the literature review. It offers background information on the broader Thai context within which EGAT operates. For example, it examines the Thai economy, the social context and Thai civil society. Subsequently, Chapter 3 provides information regarding EGAT and the Mae Moh power plant. This chapter also describes each type of pollution experienced by local residents and examines the local residents' living conditions and issues resulting from resettlement.

The next chapter explores various conflict resolution methods, Marxist theory and Weber's domination and regulation theory. Further, the chapter discusses climate change and its governance. Lastly, literature on power is provided, discussing political ecology.

Chapter 5 addresses the research questions and objectives, and the theoretical stance is discussed. In addition, this chapter elaborates the methodology used for the study as well as ethics considerations.

Chapter 6 is dedicated to reporting primary data from two phases of the data collection trips taken to Bangkok and Lampang, and findings from secondary data. Chapter 7 answers the research questions, outlines the limitations of the study and discusses future research. Lastly, Chapter 8 concludes this thesis and discusses its contribution to management literature.

2 Context

This chapter provides the context necessary to understand the environmental conflict at the Mae Moh power plant. There are essentially three components to this. First, it is necessary to understand Thai society, its political and social relations, the role of civil society organisations (CSOs) and NGOs in Thailand, and the dynamics and constraints of Thai civil society. Second, it is important to look at the literature related to the political role of the peasantry in Thailand and similar societies.

The purpose of this chapter is thus to provide a foundation for understanding the social context of Thailand and the factors that affect EGAT Mae Moh's operation and management's decision-making.

2.1 The Thai context

In order to study EGAT's internal decision-making, it is crucial to understand the external context of Thailand outside of Mae Moh, as well as the political variables that could influence decision-makers in the organisation. The next section will give information on the evolution of Thai politics as well as the Thai economy, its governance, the role of political connections, the peasantry and third-sector social actors in the kingdom.

2.1.1 Thai politics

It is necessary to have a good understanding of Thai politics to understand the Mae Moh power plant case study.

Despite Thailand officially becoming a democracy in 1932, the period since then has been punctuated with periods of military government. The revolution in 1932 imposed constitutional constraints on the monarchy and for a half-century, Thai politics was dominated by the bureaucratic elite and the military (US Department of State 2011). Changes of government occurred mainly through a long series of mostly bloodless coups. During the Second World War, Thailand was invaded by the Japanese and occupied until Japan's defeat in 1945. Thailand had a more successful experiment in democracy during the mid-1970s, and civilian democratic institutions gradually obtained more authority. In 1988, Chatichai Choohaven assumed office as the first democratically elected Prime Minister in over ten years. However, another coup ended Chatichai's term in 1991. Consequently, Suchinda Kraprayoon, a former army officer was appointed Prime Minister. In May 1992, the military restricted the demonstrations of the nomination with violence, resulting in 50 deaths. The violence and a televised meeting with King Bhumibol pressured Suchinda to give up his

position, with a new election being conducted in September 1992. After the election, Chuan Leekpai served as Prime Minister until May 1995. In the next election, Banharn Silpa-Archa won the election but served as Prime Minister for only a little more than a year. After the election in November 1996, Chavalit Youngchaiyudh formed a coalition government. However, the Chavalit government lost the public's confidence due to the Asian financial crisis and Chuan Leekpai returned back to power in November 1997 (US Department of State 2011).

Thaksin Shinawatra won the election in 2001 with the promise of economic growth and development. Thaksin was accused of being anti-democratic, weakening independent organisms, restricting the press's freedom and extra-judicial murders resulting from the war on drugs he started. He was re-elected again in 2005. His party gained 377 seats in the Parliament, out of 500. He was criticised for ignoring the systems of checks and balances. In 2006, a demonstration for his resignation caused him to dissolve the Parliament (US Department of State 2011).

In recent years, Thai politics has been very volatile. Before the new election in September 2006, another coup arranged by top military officers forced Thaksin's administration and Thaksin to pass on his premiership to Surayud Chulanont, another military officer (US Department of State 2011). During Thaksin's term in 2005, the People's Alliance for Democracy (PAD) or the Yellow Shirts was founded. They claimed that Thaksin was destructive to the monarchy and Thailand's social order. They successfully brought down Thaksin's administration in 2008. The PAD's opposition is the United Front for Democracy against Dictatorship (UDD), or the Red Shirts. The UDD advocates for Thaksin (Shigetomi 2010). It was founded in 2006 to counter the military government installed after the coup's takeover (PAD).

The last government was led by Yingluck Shinawatra, who won an overwhelming victory in the 2011 election. Later on, she was officially barred from political activities by the military government. In addition, she was charged with criminal offences. Yingluck is Thaksin's (the former Prime Minister) sister (The Economist 2015). The Economist (2015) elaborates further that he is the funder and power supporting Yingluck's Pheu Thai party.

The present government has General Prayuth Chan-ocha as Prime Minister. Moreover, the old political establishment (Yellow Shirts) were rewarded with a 'double coup' which removed Thaksin and Yingluck as a compulsory process to liberate the nation from the

domination of a populist authoritarian. The old establishment consists of portions of the royalist Democrat Party that drives politics in the south and the Western components of Bangkok, whereas Thaksin dominates Thailand's north and north-east. Thaksin's advocates (the Red Shirts) project the reinstatement of the military government as the privileged class's endeavour to preserve the old order. The national reform council adjudged against the new draft of the constitution earlier this month, which resulted in the election being postponed to 2017 or later (The Economist 2015).

2.1.2 Thai economy

According to the CIA (2011), the population of Thailand is 66,720,153 (July 2011 estimate). Thailand's annual population growth rate is 0.5 per cent (2009 estimate). The majority of the population is of Thai ethnicity. The dominant religion is Buddhism. Its official language is Thai. English is considered the second language among the elite (US Department of State 2011).

Sixty per cent of Thailand's gross domestic product (GDP) comes from exports. After the Asian financial crisis in 1997, Thailand has moved to expand its economy by exporting goods and services to other countries. Former Prime Minister Thaksin's administration started a dual-track approach that includes both stimulating domestic projects and investment from foreign countries. Thailand suffered severely from the global financial crisis in 2008. This affected Thailand's export sector, causing other areas to experience a two-digit decline. GDP grew slowly from 2005–2007 at about 4.9 per cent because of political instability, the impact of the tsunami and the violent situations in the southern provinces. In 2008, economic growth slowed to 2.5 per cent. The recession continued to the next year. Thailand finally regained economic growth again in the fourth quarter of 2009 (US Department of State 2011).

In the first quarter of 2010, the Thai economy grew the most since 1995 as a result of global economic growth, which caused a rise in demand for Thai exports. Despite the political instability in that year, the growth continued to the second quarter of the year. During the first three-quarters of 2010, the Thai economy expanded. This was considered the second strongest performance in South-East Asia, after Singapore. Foreign investment is welcome in Thailand and candidates who meet the requirements can acquire special investment privileges. Abhisit's government focused on green technology and manufacturers to attract more foreign investments. Thailand's economic planning agency proposed growth would rise

from 2.7 per cent to 3.2 per cent in 2015 from a preliminary assessment of 3.0 per cent to 4.0 per cent (Trading Economics 2015).

2.1.2.1 Thai state-owned enterprises

Since EGAT is a state-owned enterprise, it is helpful to examine Thai state-owned enterprises' roles in order to explain the dynamics of the conflict.

Generally, state-owned enterprises function in the utility, energy, telecommunications, banking, tobacco and transportation sphere (US Department of State 2012). Thai state-owned enterprises had profits of approximately US\$105.7 billion, 273,020 employees and contributed 31 per cent of Thailand's GDP at the end of 2009.

Private companies are commonly not permitted to compete with state-owned enterprises under the same conditions and circumstances in terms of compliance with market, credit and other business transactions, such as authorisations and distributions, aside from the banking division (US Department of State 2012).

In addition, the government often assigns 3–4 per cent of its yearly budget expenses to finance the state-owned enterprises. The government can momentarily supply short-term credit resources, warranties or financial assets investments for state-owned enterprises in need. Corporate board positions are usually filled with senior public servants or other politically connected individuals. Legally, all state-owned enterprises are obligated to present annual financial records to the Office of the Auditor General. State-owned enterprises listed on the Stock Exchange of Thailand are also obligated to issue their financial records. Further, state-owned enterprises maintain the rights to admit or turn down any bids at any point and may adjust the technical conditions during the bidding course if corruption is suspected, unlike governmental bodies (US Department of State 2012).

2.1.2.2 State-owned enterprises and CSR

Among the Thai manufacturers and consumers, there is extensive awareness of the importance of CSR. Nevertheless, several companies still fail to completely understand the commonly recognised CSR foundations; for example, the OECD directions for multinational corporations. Most frequently, CSR is described as individual philanthropic schemes or companies' community service instead of a comprehensive corporate strategy intend to upgrade the community in which the firms function. Firms that follow CSR are regarded positively by the public (US Department of State 2012).

2.1.2.3 Thai governance

Governance in the Thai context differs to that in other social contexts. It is imperative to know how governance functions in Thailand in order to understand the reasons behind EGAT's responses to the environmental conflict.

For the first aspect, Uwanno (1998) and Panyarachun (1999) state that there were specific ways to ensure that cohesion was maintained when the governing system was an absolute monarchy. The monarch who had the ruling power was obligated to follow ten rules, called 'thotsaphitrajadharma', which are the rules for the king in exercising his authority and doing good for his citizens. They consist of rules such as giving, behaving, sacrificing and honesty (Cooperative Auditing Department, Kasetsart University). If the monarch did not adhere to thotsaphitrajadharma, he could lose legitimacy. In some cases, after a monarch lost his legitimacy, he might be challenged or worse, dethroned. Thus, governance can be understood as any governing means based on virtue, as stated by Kamhasengkitiron (as cited in Uwanno 1998).

The 2002 Royal Decree on Good Governance in Thailand is the latest legal mechanism made to improve good governance in the nation (Vichit-Vadakan 2008). Rule of law, morality, accountability, effectiveness, participation and transparency are the major principles of this decree. It is mandatory for business to follow these guidelines. However, there was a requirement for change. After the economic recession of 2008–2009, third-sector organisations have faced increasing pressure to function in a more cost-effective manner. One of the reasons for this adaptation is the demand for their help from other organisations.

Additionally, in Thailand, on top of functioning as a legal mechanism, governance has been used as a way to uphold personal power and group coordination and a way to manage third-sector organisations. Governance can also function as instructions for good administration and assistance in times of crisis.

After the economic crisis in 1997 in Thailand, the business sector was blamed and scrutinised. In this period, the term *governance* was used in a more universal sense. For companies, Honcharu (2002) defines corporate governance as a process created to guide and control the management of a company on a strategic level, resulting in greater shareholder value and linking shareholders' expectations with concerns of business ethics and the quality of life of the society. Nikomborilak and Chimannaidham (2000) add that just and transparent management are essential elements of corporate governance.

Nikomborilak and Chimannaidham (2000) argue that management or decision-makers must be held accountable to the stakeholders and that all stakeholders must be treated equally without any double standards. Scholars tend to explain characteristics of governance as fairness, transparency, accountability and responsibility (Nikomborilak & Chimannaidham 2000). Subsequently, a subcommittee was created by the Thai Security and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET) to help improve the standard of governance in Thailand. The subcommittee defines these characteristics as the following:

According to the principle of fairness, all the shareholders and creditors must be protected and treated fairly against misconduct and fraud. As for transparency, a firm's annual report must reveal correct and timely information on its operations. Also, a firm must follow the guidelines of the International Accounting Standard. In order to become accountable, a company must build a structure of duties for the board of directors and executives to make them liable to shareholders and creditors. In order to be responsible, a company must be reliable to all its stakeholders and shareholders (Vichit-Vadakan 2008).

Considering that governance serves as guidelines for good administration in the public sector, Uwanno (1998) identifies that the lack of governance in the Thai context is because the old system of governance placed emphasis on the personalisation of power, which originates from the capability and competence of the leader. Uwanno (1998) adds that King Chulalongkorn attempted to separate 'person' from 'position'. However, changing an old tradition or culture is a very difficult task. The belief that one could obtain privileges from a position still exists. In this same system, leaders were expected to have a sense of righteousness or 'khunnadharma'. Consequently, there were no mechanisms to ensure that the leaders would behave appropriately. This system was merely based on a reliance on conscience.

In order to describe governance as a way of managing third-sector organisations, Vichit-Vadakan (2003) argues that Thai people focus more on the legitimacy of a not-for-profit organisation than the issues of transparency and accountability. Legitimacy relates to details such as who the founder is, how it was founded and for what purpose. Further, Thai values give importance to charismatic leaders with high social status and position and on outstanding figures with power and authority. As a consequence, many well-known elites

lend their prestige and status to various NGO boards or committees (Phatharathananunth 2002; Vichit-Vadakan 2008).

Vichit-Vadakan (2008) also explains how NGOs with questionable behaviours are dealt with by other NGOs. The measures taken are informal social sanctions and ostracism, exclusion from common activities, blacklisting the organisations, sharing the blacklist with other NGOs and lastly, truthful exposure when asked.

Thaksin's government was influential in motivating the public to appreciate the relevance of accountability and transparency. Maisrikrod (1999) elaborates that especially under Thaksin's government, pro-market advocates and entrepreneur politicians are more superior, therefore, the people realise the importance of accountability and transparency. Nonetheless, these cannot be actualised due to the dominance of capitalist politicians' alliance with conservative government officials.

2.2 Thai NGOs and CSOs

After learning about the Thai social context affecting EGAT Mae Moh's decisions, it is crucial to understand Thai NGOs, how they emerge, their operations, their roles in the improvement of Thai society and the challenges they face.

2.2.1 Traditional Thai life

Thai society has traditionally been characterised by a gap between the masses and the elite (Vichit-Vadakan 2005). There was micro-level connection and horizontal ties existed at the village level between villagers. Thai people acted and cooperated on the basis of kinship as well as principles of mutual support. Traditionally, the temple was the centre of social life and activities. Consequently, life was relatively contained in the sense that people accommodated each other because they regarded each other as relatives or they fitted in the same society (Vichit-Vadakan 2005).

The elite dominated traditional Thai society. The patron-client relationship has changed that nature. For the last five centuries, the patron-client relationship pattern has dominated Thai society. This relationship has particular features identified as 'the four Ps', which are position, power, prestige and privileges (Vichit-Vadakan 2005). He elaborates that position gives you power, power provides you with prestige and privileges are brought to you by status. If you had the four Ps, the money would usually follow. However, money comes first

in modern Thai society, and money is the passage to the four Ps as well (Vichit-Vadakan 2005).

It is also mentioned that state power and state agencies did not truly infiltrate the entire society and did not genuinely reach the local unit in conventional Thai society. Therefore, communities' horizontal ties have been destroyed and unexpectedly weakened by the state's strong role (Vichit-Vadakan 2005).

2.2.2 Social structure implications

Further, in Thai society, traditionally, participation of the masses and the possibility of incorporation was confined to the grassroots class. The only way to get ahead in life was through vertical affiliation. As a consequence, in the beginning, NGOs at the national rank were supported and favoured by the elite; for example, when the Red Cross was established in Thailand, it became the Royal Thai Red Cross, with one of the queens fostering it as a royal patron/founder (Vichit-Vadakan 2005).

The public could take part by donating to religion-based charitable organisations, but they did not participate in any other form of social activism, states Vichit-Vadakan (2005). He goes on and points out that a public sphere for active participation in activities that challenged the political or social did not exist. The people made donations, but the chair and membership of the board of directors of each charitable institution was always assigned to a group of elites. This pattern remains embedded in Thai society. Thais tend to place someone with social prominence into the position of the chair or the vice-chair of a charity. This trait results from a highly vertically connected society (Vichit-Vadakan 2005).

2.2.3 Political connection

Hewison (2000) asserts that close relations among executives and elected politicians were standard in the 1990s as the political parties require financiers to flourish. Political connections play critical roles in an organisation's survival in the Thai context. In EGAT's case, it can be seen that EGAT has the connections it needs to assist it in proceeding with its programmes and passing laws that will assist it to operate with legitimacy. This part of the thesis explores the influence of political connections in Thailand.

The evolution of Thailand's politics shapes the state and its system of connections and sculpts industrialisation and economic progress. Connections benefit businesses in carrying out arrangements and mitigating unreasonable issues and expenditures. Major institutional

features, such as proprietorship control and network conformation, are crucial in driving the development of connections (Sitthipongpanich 2004).

In regards to shareholders, ownership densification and affiliation is inclined to intensify the function of predominant shareholders in establishing affiliations with substantial players, sponsors and the government. Moreover, big business associations are expected to mould industrial growth and have less difficulties adjusting to economic policies.

Further, Sitthipongpanich (2004) adds that proprietorship densification of controlling shareholders and the domination of family-owned businesses are noted in Thailand's corporate configuration. These characteristics could obstruct the progression of corporate governance structure and transparency in order to uphold power similar to EGAT and the government in the Mae Moh case study.

Nevertheless, majority shareholders are essential in operating companies and building fortunes (Sitthipongpanich 2004). Their executive participation and determination impact business strategies.

Sitthipongpanich (2004) explains that the government is central in the creation of industrialisation and economic legislation. Thus, a relationship with the government can give a business commercial advantages and security against new market entrants.

Sitthipongpanich (2004) further states that under military governments, influential generals and officials were appointed into directorship and proprietorship positions. Business employed preeminent politicians in boards of directors or granted them shares to receive special cooperation from the government as well as leverage in competition. Phipatseritham and Yoshihara (1983) highlight that political affiliations are significant for business longevity and prosperity. Moreover, companies depend on government officials to shape legislation or to gain permission for projects.

After the 1970s, civil governments replaced the military governments. Metropolitan trade, industrialisation and dominant technocrats drove economic administration (Sitthipongpanich 2004). Prominent officials and technocrats appointed as executive directors carried out lobbying. These movements assisted companies in driving economic regulations.

Additionally, Sitthipongpanich (2004) adds that new breeds of politicians and entrepreneurs were evidently connected to realise their purposes in the 1990s. Moreover, recent Thai

political strategy focuses on establishing relationships between business and government. Various executives entered the political arena to directly pursue economic privileges and maximise their profits (Sitthipongpanich 2004).

This part of the thesis has briefly discussed the roles of political connections in Thailand. It explains the evolution of Thai politics on the nation's industrialisation and economic development and possible gains of businessmen from having close ties with authorities. In the following part, the document will provide background information on the development NGOs in Thailand.

2.2.4 Appearance of the development NGOs

Development NGOs seek to eradicate the causes of social inequalities and injustice, according to Vichit-Vadakan (2005). Girling (2002) adds that in Thailand's case, civil society is perceived as an advocate for political struggle. Usually, NGOs rely extensively on external financial support to pursue operations. The control of NGOs is often restricted to a small group (Albritton & Bureekul 2002a).

Since the early 1970s, there is some proof that several Thai NGOs have operated to shape the government's administration. During the 1980s, advocacy evolved into the new trend among numerous organisations when they started to prompt people to oppose the construction of dams and eucalyptus trees plantations. Since that period, various Thai NGOs have increasingly focused on advocacy (Dechalert 1999).

Thai NGOs are primarily fostered/financed by international donors. Thai NGOs have the capabilities to undertake simpler tasks, but lack the sophistication to undertake advocacy roles. Further, civil society is perceived as the catalyst of good governance (Albritton & Bureekul 2002a). As a result, it implies an emotional interest since this is a major stimulus for political improvement. Among other activities, development NGOs also raise concerns related to environmental problems; for example, the construction of a dam that might lead to dislocation and displacement of people. Vichit-Vadakan (2005) argues that to Thai citizens, these NGOs could appear nosy and confrontational. The NGOs may resort to the media, which is not in accordance with the Thai traditional approach where good citizens are expected to obey the government blindly.

This type of NGOs is different from other NGOs because other NGOs operate under political regimes that are not repressed and thus more open, clarifies Vichit-Vadakan (2005).

Normally, they are suspected of uncommon behaviour and for their roles. Several of their members do not dress or behave conventionally in order to make a statement. Their advocacy position is viewed negatively by the public and the government. Their role is not understood by the masses, and at times they make the public feel endangered; specifically, when public officials attempt to discredit them. It seems evident that advocacy work is not understood to be a respectable job or fit the role of a 'good' Thai citizen.

2.2.5 The role of civil society

In Thailand, civil society performs four common functions (Vichit-Vadakan 2005).

Typically, these organisations have main missions while other tasks are perceived as trivial. The following are their main functions: first, the delivery of services for society; these elite-founded organisations, such as the Thai Royal Red Cross, were established to help the sick or accidental victims (Vichit-Vadakan 2003). Second, social development: Thai Civil Society Organisations (CSOs) are deeply committed to helping the poor and marginalised population. Third, complementing balanced development through alternative agriculture and sustainable development; in this model, civil society's role is to offer alternative development examples that do not pursue the dominant development strategy. Finally, advocacy activities: these include other campaign movements carried out by CSOs relating to the protection of consumers, human rights, good governance and corruption.

At present, CSOs need both financial and non-financial support. Funding has turned into a troublesome concern for development-oriented CSOs (Vichit-Vadakan 2005). After Thailand was no longer regarded as a developing country in 2011, foreign supporters stopped their advocacy (The World Bank 2015). Furthermore, an understanding and acceptance of civil society as a partner in improving Thai society is required. Although there is abundant discussion regarding partnership, real partnership has yet to be established (Vichit-Vadakan 2005).

In order to flourish, the CSOs need an enabling environment (Vichit-Vadakan 2005). As long as the authority believes that only the government has the ability to discuss and solve social problems, the environment is not considered enabling for CSO development. He notes further that a change that can be made to improve the ability of CSOs in Thailand is capacity-building measures for their members. Moreover, management skills need to be developed among the Thai CSO leadership.

Another factor disrupting the development of CSOs is that the Thai society believes that if the intentions are good, other things are irrelevant. These organisations are enthusiastic, but they need to increase their efficiency. Consequently, as long as the intentions are determined as good, no improvements are required. In regards to younger members, if there is a clear and rewarding career path, they could be more motivated. Unlike in other sectors, the matter of payment and career advancement needs to be made clearer in CSOs.

Albritton and Bureekul's study (2002a) demonstrates that the level of civil society participation in Thailand is low and there is largely a higher degree of civil society in rural domains than in metropolitan zones as the location of people is an important factor affecting participation. In Thailand, urbanisation has impacts on political attitude separately from socioeconomic conditions.

As a consequence of the self-effacement common in the rural Thai community, the norm is to keep interactions shallow. Thais are cautious of assertive interaction with civil society activities (Mulder 1969). Even though Klausner (1983) points out that commonly the degree of participation is low, nowadays considerable numbers of protests occur, indicating the development of a civil society movement. Thais seem to be doubtful in their participation and rarely affiliate with endorsed and arranged gatherings. Mostly, their organised initiations are established by the state for rural Thai citizens as a procedure for approaching the state enterprises and resources (Albritton & Bureekul 2002a).

An important question for civil society is how to preserve diversity and heterogeneity while Thailand is undergoing globalisation and 'cultural homogenisation' (Vichit-Vadakan 2005). In the Western custom, the term *civil society* describes a non-utopian political organisation where morally and intelligently frail citizens coordinate themselves to oversee a hopeless state, aiming to either diminish state interference of their ways of life or to utilise some state involvement to repress allegedly domineering elites external to the state (Metzger 2001). For Thai CSOs to adopt the Western style of civil society is not the right idea. Some of their management practices could be applied to a limited extent. The Western models of civil society should not be followed blindly. The adaptation of Thai CSOs to a rapidly changing environment needs to be planned and actualised carefully. A Thai community has its unique strength in assistance to becoming the ideal of a good society. It permits people to rise from their very confined and restricted social space to enter the public domain (Vichit-Vadakan 2005).

Putnam (2000) states that civil society is important for strengthening democracy. Voluntary membership usually contributes to political movement, meaning that people who take part in civil society campaigns voluntarily are possibly more skilful and pursue their interests by taking political action. The results of Albritton and Bureekul's research (2002a) suggest that participation in official organisations stimulate a higher degree of political campaigning and an unofficial organisation does not lead to major consequences. Nonetheless, plenty of CSOs are not aiming to concentrate on the collective good. It is up to the people's judgement to determine which CSOs are good and which are not, and which route we would like these CSOs to follow for the public good, concludes Vichit-Vadakan (2005).

Thailand has been through significant, economic, social and cultural change since the early 2000s (Wankaew 2005). Specifically, globalisation and occurrences after 9/11 had an impact; 9/11 was used to increase the concentration of state power.

In the new constitution of B.E. 2540 (1997), Thaksin Shinawatra focused on the CEO style of prime ministership, whereas the role of state power and market drives are highlighted and at the same time, active participation of business is promoted (Wankaew 2005). This leadership strategy has led to the depreciation of the mechanisms of checks and balances and the diminution of space for the participation of the masses.

The participatory political culture has been challenged, while the individualistic and clientelistic culture has been empowered by populist government policies and special programmes that attracted voters (Wankaew 2005). The status and roles of middle class groups and institutions, including groups from grassroots communities, are affected. Additionally, the CEO prime ministership and the new public management made the executive officials directly answerable to their chief executive and not the citizens. Third, the decline of democratic social movements produced a disrupted and irritated civil society sector. Its financial support has been cut. The civil society sector has been left with an even more complicated socio-political condition. Lastly, due to the national bureaucratic attention and decentralisation, the local governments have been given more authority and responsibilities.

Thaksin was scornful of how the country had been governed previously. Consequently, he altered the governance by employing plans, objectives and performance indicators. The Thai bureaucracy was rearranged through privatisation, decentralisation, accountability and fiscal regulation. In the early 1990s, Thaksin was elected Prime Minister. Until that point, Thai

politics had been through considerable transformation. Moreover, at that point, decades of military regime was temporarily determined. The political system under military rule was called 'bureaucratic polity'. In this system, the military commander coordinated with government officials to manage a status-oriented nation. Business people and the general public enjoyed their fortune and status due to patronage (Rowley 2006).

The new system Thaksin implemented assisted the newly authoritative business class through the Parliament's increased role, founded on money-politics. This was developed on agreements between the businesspeople who supplied the funding needed, local leaders who provided votes and aspiring politicians who guaranteed to return favours when elected into the Parliament. Hence, politicians were rarely interested in the demands of regular people. Political parties flourished around detached and varying coalitions of individualities and groups, counting on patronage and vote-buying in order to gather support. The governing system went from democratic to being restrictive and impassive. Shortly, corruption became a main concern of voters (Rowley 2006).

Therefore, demands for improvement were prevalent, particularly among the new professional groups in Bangkok. The Thai 1997 constitution aimed to weaken parliamentarians' patronage and the local leaders that upheld them. In addition, the improvement attempted to introduce more transparency by establishing independent organisations to implement checks and balances to restrict executive authority (Rowley 2006).

It cannot be concluded that civil society consists of only groups with the same ideology. Even though many people do not know that the Thai government has its place in the civil society, in fact, government officials are everywhere, intervening in the public's matters (Wankaew 2005). Furthermore, the public arena is also used by the business sector more efficiently and effectively than civic groups (Wankaew 2005). Hence, civil society turns into a contested arena due to the existence of various groups with different and conflicting interests and ideologies. Gramsci (cited in Lewis 2001) elaborated that civil society is a domain disconnected from state and market, where ideological influence struggle for victory. This expresses the view that civil society has within it a broad range of organisations that both defied and advocated for the existing structure (Lewis 2001). Furthermore, Newton (2001) notes that the notion of civil society describes a social context that contains an expansive

extent, great variety and high concentration of social networks along with official and unofficial social bodies.

Despite the fact that the 1997 constitution encouraged civic actions, Wankaew (2005) insists that a large portion of Thailand continues to perceive NGOs as being too radical because they defy state power and explicate structural issues. Moreover, in Thailand, the concept 'civil society' does not distinguish between the political space of the state, the market and the society. The concept was applied strategically and aimed at accentuating the role of active citizens in actualising the reform. Eventually, the important factor is not who, but whose power, matters in the public space.

In the Thai language, civil society is conceived in terms of building social synergy, elaborates Wankaew (2005). In the Thai political context, there is a likelihood that the state would interfere in civic activities. Practically, all interest groups, including the state, use civil society to justify their actions. In addition, while the most common understanding of the civil society highlights only a positive facet of civil society, the reality is greatly different. There are cases of disputes over resources and environmental problems that do not fit well with a consensus oriented idea of civil society.

According to Wankaew (2005), other than playing a considerable role in civil society, the state also seeks to promote its own form of civil society; for example, the Thai Ministry of Interior has founded the People's Forum and the state created the civil society in provincial, district and subdistrict levels. Additionally, more recently civil society has been manipulated as a mechanism to distribute and monitor the government village fund, where each village maintains its own microfinance banks (Schumpeter 2013).

2.3 Thailand's political peasants

In order to understand the Mae Moh environmental conflict it is important to provide some background on the villagers, who are predominantly farmers and farm hands. The distinguishing feature of Thailand and other developing nations in Africa, Asia and Latin America is the presence of a large part of the population who are rural and often involved in subsistence or small-scale farming. This section looks at some key literature on the political role of the peasantry in Thailand and Malaysia.

The Thai government's support and economic diversification has stimulated the contemporary rural population's drastic increase in income (Kerkvliet 2013). As the

government is responsible for this diversification, between 1960 and 2008, the government's expenditure on agriculture multiplied 15-fold. Public credit institutions offered loans with attractive interest rates. In addition, the government also invested in irrigation, roads and other infrastructure, and subsidises the rural economy instead of taxing it (Walker 2012).

Walker (2012) explored the village of Ban Tiam in north-east Thailand and discovered a new approach in South-East Asia's modern democracy, called 'political society'. Chatterjee (1998) has described political society as a style of interaction between residents and the state founded on productivity (Herriman 2013). The local residents expect to attain support and protection through association with government programmes.

As a result, political society could be different from civil society. The reason is that civil society is independent from the state, which 'does not fit within the familiar templates of 'patron-client relations', nor 'class struggle' in Marxism or liberal 'civil society mobilization'' (Walker 2012, p. 232).

Further, Walker (2012) contrasts the political orientation of middle-income peasantry, which makes up most of rural contemporary Thai community, with the unfortunate peasantry that dominated rural Thailand and other parts of South-East Asia approximately 50 years ago. Most contemporary Thai peasants are much better off economically and have much more free political orientation in affiliating with sources of power. The state injects capital into rural communities by subsidising local projects. This compels the people to engage with the sources of power.

The state subsidises programmes in rural Thailand, such as fertiliser programmes, community forest programmes, the banana projects and tourist shops. These projects are considered to be sources of income for participating parties, along with leadership skills and political connections. It can be understood that the 'productive intersection between the welfare and subsidy programmes of the state and the aspiration of the middle-income peasantry' (Walker 2012, p. 226) is a key element of the political society.

As Walker (2012, p. 164) indicates, villagers realise that 'strategic or opportunistic connections with a potential donor can be more valuable in project development than a carefully accumulated stock of social or financial capital'. Walker, cited in Herriman (2013), explains that this is significant in two ways. Firstly, Walker explains that outsiders and modern Thai middle class presuppose that politics and state-society association to be in

accordance with state-civil society principles. Secondly, Herriman (2013, p. 214) calls the occurrence where citizens attempt to get involved with the state rather than avoiding it 'seeking the state'. However, Walker (2012, p. 57) indicates that the villagers seek to 'attach themselves to the power of the state' as their 'political desire' is to influence the outcome of state projects.

Walker (2012) elaborates that external resources can also be attracted by utilising collective power (Kerkvliet 2013). Individual villagers can acquire moral support from others through their own resources, networks and ability to appeal capital development schemes and recognition from the agencies that could cater to common benefits. In regards to the market, villagers experiment in order to learn from economic proceedings, such as growing vegetables or farming. Further, villagers seek to attach themselves to private and public programmes and entice these projects into their areas.

2.4 Weapons of the weak

Scott makes a breakthrough with the economic impacts and peasants' reaction to changes. In his book, Scott studied the daily struggles of wealthy and unfortunate peasants in Kedah state, Malaysia, and the changing context of economic and social development in much of rural Asia (Williams 1986–87). This case study shares a few similarities with the Mae Moh case study.

Scott resided in Sedaka Village for two years from 1978 to 1980. Sedaka is located in the Muda irrigation project, which assisted villagers with rice double-cropping (Downing 1987). Within the class struggle, the better-off peasants were occupied with rationalising the greatly increasing profits, whereas the poor parties claimed traditional merits and were engrossed in a concealed counteraction to impede the enforcement of the new agricultural adjustments. Additionally, Scott points out that the dominant alliance stance in the rural area has been significantly restated (Williams 1986–87).

Due to the introduction of innovation technology, more productivity was an outcome and initially all parties were in a better position than before (Bailey 1987). Later, the enterprises expanded and land was repossessed from small leaseholders to rent out to large entrepreneurs for profits. Regardless, the large leaseholders produced agricultural machinery which impoverished the workers. A capitalist agrarian class originated, without being restricted by the old links between the rich and the poor.

In his book, Scott (1985) distinguishes the rich and the poor. He emphasises the class struggle, false consciousness and predominance, while examining individual survival tactics influenced by extreme social adjustment. He created remarkable evidence of peasant circles and their politics (Bailey 1987).

According to Scott (1998), the rich had always been taking advantage of the poor. Nowadays the poor were made irrelevant, both economically and socially. Nonetheless, Scott argues that the poor are still equipped with weapons. He elaborates that strength is not merely a capability to impoverish or cause pain, it contains a moral aspect as well (Bailey 1987).

Parties that adopt the ideal high ground are capable of affirming that they are in the right and to certain degree, as a consequence, restrain their oppositions. He insists that this has a 'small but perceptible influence on conduct' (Scott 1985, p. 235).

In Chapters 6 and 7, Scott (1985) described how the rich and poor view the past ten years and how the truth is manipulated to declare righteousness and to place the blame on the opposition. The poor are labelled lazy, sly and shameless. Furthermore, the wealthy are classified as hostile and two-faced (Bailey 1987). This discourse is formed against a diminution in the traditional means of charity that used to function to spread a moderate amount of fortune from the wealthy to the underprivileged.

In accordance with capitalism, profit is the indicator of all possession conglomeration and so on. In addition, respect is not a concern. Both parties profess righteousness, utilising traditional beliefs. The rich have pragmatic competence and the potential for exploiting them into somewhat acceptable behaviour. The poor must be careful what they say and display extensive obedience. However, Bailey (1987) states that this should not be understood as false consciousness.

The 'ruling ideology' that assisted the rich in the past now serves the poor better (Bailey 1987). Additionally, the needy are presumed to be disobedient, angered, sceptical, disrespectful and impeding.

From studying the peasants of Sedaka Village, Scott composed an extraordinary book on 'moral economy' (Downing 1987, p. 875). The rich and the poor both manipulated traditions and values for their own gains. The introduction of irrigation system and technological innovation caused changes in the relationship between the wealthy and the needy, as well as

allowing capitalistic values to replace the traditional values that had previously served the landholders.

The basis of this conflict is the distribution of rights and responsibilities between rich and poor villagers. The poor resisted their replacement in the production process. The rich attempted to rationalise the poor's dismissal (Bailey 1987).

It can be recognised that this is a case of class conflict. However, the dispute is between villagers rather than a state enterprise and the local residents. It also shares the characteristics of charity and patronage for social control.

Walker's study demonstrates that the state and civil society are not necessarily always rivals, as peasants attach themselves to the state to benefit from the support received from subsidy programmes. Together, they could construct a different social structure where they both can benefit (Herriman 2013).

Middle-income peasants aim to capture power sources to enhance their wealth, stability and protection (Kerkvliet 2013). In this context, the parties actively create networks to link themselves to power sources. Walker (2012) classifies these networks as a political society.

Walker (2012, p. 23) explains how the peasants in Ban Tiam utilise their agencies, 'In the world of political society benefits flow primarily from connections, manipulation, calculation and expediency, not from the universal rights of modern citizenship'. Similarly, in the Mae Moh case study, the villagers of Ban Tiam attempt to become involved with projects that are supported by the government in order to acquire money and legitimacy, as well as to develop connections with authorities, rather than opposing new development programmes. Moreover, it also demonstrates that the peasantry in Mae Moh may not fit in the civil society category, as Mae Moh's political society involves government interference. Kerkvliet (2013) proposes that Walker's findings in Ban Tiam can be applied to other Asian cases where poverty has diminished drastically, the government invests in the development of much rural infrastructure and the rural economy has been tremendously transformed.

2.4.1 Conclusion

'Weapons of the Weak' is a good example of an environmental dispute in South-East Asia. It illustrates the conflicts within the peasantry. It is unlike the Mae Moh case, where the government is not a key player in the dispute. However, there are aspects of agricultural land

and class conflict that are relevant. These two examples share good insights in analysing conflicts in South-East Asia.

The next chapter describes the information on EGAT, including the environmental impact and social consequences of EGAT Mae Moh's establishment.

3 EGAT and EGAT Mae Moh

EGAT is Thailand's state-owned enterprise that reports to the Ministry of Energy. Currently, EGAT is responsible for electricity production and the supply of electricity for the majority of the nation.

EGAT Mae Moh is built in the Mae Moh basin of the Lampang province, situated 630 kilometres north of Bangkok. It is one of EGAT's provincial divisions. It covers 38,000 acres of Mae Moh's basin (Srivichit & Srivichit 2010). It comprises two key operations: the Mae Moh power plant and the Mae Moh mine. The former has been one of EGAT's most significant power plants, catering for 18 per cent of Thailand's demand since the construction of the first unit was completed in 1978 (Montgomery Watson Harza & Nature and Technologies 2002). The latter, which is located on the same site, uses a lignite coal mine to fuel the power plant (Srivichit & Srivichit 2010).

Historically, King Rama VII limited all Thai lignite activities to be carried out solely by Thai government authorities (Srivichit & Srivichit). Due to this royal decree, lignite activity remained isolated. The Royal Thai Government then founded the Organisation of Lignite-Fuelled Power Generation to begin the development of the Mae Moh mine in 1954. Later in 1972, the construction of Mae Moh power plant Units 1 and 2 was approved by the Parliament with support from the Asian Development Bank (ADB), Export Development Canada, the US Export-Import Bank, and the Japanese and Swiss governments as financiers (Greenpeace Philippines 2005; Herbertson 2009; The OPEC Fund for International Development 1979). Consequently, the construction of 13 power generating units in the Mae Moh power plant was finished in four stages from 1978 to 1996. In addition, EGAT built the Mae Moh mine to supply the power plant with lignite (the key fuel for the power plant).

Table 1: Details of the construction of Units 1–13

Unit	Construction commenced	Completion	Turned on	Budget (million baht)
1	March 1975	1978	1978	+
2	March 1975	1979	1979	-
3	March 1975	1981	February 1981	Units 1–3 combined 3,616
4	January 1981	1984	December 1984	+
5	January 1981	1984	December 1984	-
6	April 1982	1985	1985	+
7	August 1982	September 1985	September 1985	Units 4–7 combined 16,246
8	April 1986	October 1989	October 1989	9,672
9	September 1987	January 1990	January 1990	8,533
10	January 1989	September 1991	September 1991	7,659
11	September 1989	January 1992	January 1992	6,535
12	October 1991	December 1995	December 1995	15,067
13	October 1991	December 1995	December 1995	12,651

Source: (Theerawongsakul viewed 30 April 2013)

The table above presents the timeline of construction of Units 1–13. After the expansion in the 1980s, the plant has been expelling 1.6 million tonnes of sulphur gas annually. Mae Moh plant is surrounded by 16 communities. The expansion also made the plant area encroach even closer to the local residences. The closest village is only 800 metres away. The emitted sulphur gas burns rice fields and taints water sources in Mae Moh district and the surrounding villages. Moreover, local residents have complained that coal mine dust has been blown into their homes and farms and that the filters that the power plant has been using are inadequate (Boonlong 2011).

3.1 Mae Moh power plant and environmental degradation

Boonlong (2011) explains that since the Mae Moh power plant has been running, over 30,000 local residents have had to move and thousands suffer from respiratory issues due to the exposure to sulphur dioxide and other chemicals expelled from the power plant. A study by

Greenpeace Research Laboratories (2005) shows that 4.3 million tonnes of fly ash has been produced by the power plant annually, which contain inorganic mercury and can be very harmful for the environment and living things. Furthermore, since its expansion in the 1980s, the plant has been expelling 1.6 million tonnes of sulphur gas annually (Boonlong 2011).

In 1992, more than a thousand local residents who lived within a seven-kilometre radius of the plant were affected by respiratory problems, nausea, inflammation of the eyes and dizziness. After EGAT operated 11 units of the Mae Moh power plant, half of the rice fields in surrounding areas were ruined by acid rain (Boonlong 2011).

As a result, many studies were conducted to find remedial measures for the situation. The Mae Moh Clean Air Study was carried out from 1992 to 1994 (Montgomery Watson Harza & Nature and Technologies 2002). A study was funded by the Swiss government to identify environmental concerns relating to air emissions and creating an emission mitigation project for the Mae Moh power plant. Moreover, EGAT sponsored an investigation of sulphur dioxide air quality standards for the Mae Moh power plant in 1994. Furthermore, a study on air pollution was financially supported by the US Agency for International Development (USAID) and the US Environmental Protection Agency (EPA) and was conducted with the assistance of the Pollution Control Department and the Ministry of Science, Technology and Environment. Consequently, FGD systems were installed in Units 12 and 13. From 1995 to 1998, FGD systems were also retrofitted in Units 8–11. Additionally, these systems have been installed in Units 4 and 7. Meanwhile, Units 1 to 3 have been closed down due to their high fuel consumption and the economic limitations of FGD systems installation (Montgomery Watson Harza & Nature and Technologies 2002).

EGAT's technical assessment report claims that after the suspension of Units 1–3 and retrofitting the FGD systems into the rest of the power generating units, the levels of sulphur dioxide emission dropped drastically (Montgomery Watson Harza & Nature and Technologies 2002). The timeline of FGD installation in Units 4–13 is provided below. Nonetheless, in 1996, six people in the nearby village passed away due to blood poisoning caused by the pollution (Boonlong 2011). The concerns regarding the environmental and social aspects of the power plant persisted. Additionally, these concerns were mainly due to the large amount and poor quality of the lignite being burned, the open-cut mining of the lignite, the great amount of water usage and the treatment of wastewater, ash disposal concerns and many instances of air pollution.

Table 2: Timeline of FGD installation in Units 4-13

Unit	Construction commenced	Turned on	Budget (million baht)
4	October 1997	14 February 2000	1
5	October 1997	14 February 2000	1
6	October 1997	7 December 1999	1
7	October 1997	7 December 1999	Units 4–7 combined 2,321
8	November 1994	26 November 1997	1
9	November 1994	17 September 1997	1
10	November 1994	28 March 1998	1
11	November 1994	30 January 1998	Units 8–11 combined 2,624
12	October 1993	2 May 1995	1
13	October 1993	18 September 1995	2,160

Source: (Theerawongsakul viewed 30 April 2013)

Note: Units 1–3 are not retrofitted with FGD since they are on cold standby.

In 1998, clinics revealed that 3,463 patients had respiratory diseases. Furthermore, arsenic, chromium and manganese were found in water sources close to the plant in 2003. This is the result of chemicals leaking into water sources. There have been over 200 respiratory-related deaths. However, EGAT still insisted that the emissions from the power plant were lower than specified in the agreement of the National Environmental Board and that the emissions were not threatening to the villagers and the environment. Local activist Maliwan Najwirot initiated the Occupational Health Patient Rights Network of Mae Moh in 2003 in order to defeat these problems caused by the pollution. Local residents stated that the government continued to grant permits for the plant's expansion despite the communities' concerns for

toxic environment and the failure to inform stakeholders about the plant's negative effects on the local communities.

The complaints made to the public relations officials and financiers of the Mae Moh power plant were ignored, explains Boonlong (2011). Mae Moh residents had to turn to lawsuits against EGAT with the support from the Council of Work and Environment Related Patient Network of Thailand. Four hundred and thirty seven people in Mae Moh filed lawsuits against EGAT. They blamed EGAT for using low-quality lignite for producing electricity and not treating smoke before discharging it. They requested compensation for physical and mental grievances, health decline, loss of crops and medical bills. Wirat Kanjan, Deputy Governor of EGAT, explained that solution to the pollution caused by the power plant had been established. However, in 2004, the Thai provincial court ruled for EGAT to give the residents 5.7 million baht as compensation. The fact that the court ordered EGAT to give compensation to the local people showed that these people now have better access to environmental management justice than before.

In 2009, Chiang Mai Administrative Court announced that EGAT was required to compensate villagers for 19 lawsuits. According to the court order (*Decided case 60-77/2552 and 68/2548 2009*), the compensation EGAT needed to pay was for neglecting its responsibilities, causing environmental degradation, noise concerns even though this did not originate from EGAT, vibration, odour, water pollution and air quality issues. However, the Court acknowledged that EGAT had been monitoring samples collected, meeting with the locals and other organisations, such as Chulalongkorn University and the University of Technology Prajomklao Thonburee (KMUTT). The Court also stated that some accusations regarding EGAT's irresponsibility were untrue. Further, EGAT was required to 1) vacate villagers within a five kilometre radius, 2) improve the mine back to its natural state by soil filling and growing forests, building a botanical garden and golf course, 3) edit Clause 2.6 of prevention and improvement measures and solve environmental all impacts as determined by the Office of Natural Resources and Environmental Policy and Planning by planting and bringing trees grown in wetlands to domination by using an anaerobic bacteria system, 4) plan soil release so that it did not spread to the community and indicate a buffer zone of no more than 50 metres, establishing a bunker, 5) conduct an environmental audit every two years. EGAT was required to audit all the impacts and present their audit to the Office of Natural Resources and Environmental Policy and Planning (*Decided case 60-77/2552 and 68/2548 2009*).

Despite the court order, EGAT received approval for a licence extension in order to continue coal mining valuing 89 billion baht in Mae Moh in that same year. This licence allows EGAT to access 178 million tonnes of coal across the land of 3,604 rai (Ekvitthayavechnukul 2009a). Currently, Units 4–13 are in use, with 2,400 megawatts of production power (Theerawongsakul viewed 30 April 2013). In regards to relocating the affected villagers, the relocation of five villages is now in progress; namely, Huay King; Baan Hua Fai; Baan Dong; Baan Suan Pa Mae Moh and Baan Hua Fai Lai Tung. At present, the request has been sent to the Permanent Secretary of Ministry of Energy and the matter will be discussed in Cabinet, and with the Cabinet's approval related organisations will proceed with her request (Maison 2012).

The major origins of the air quality concerns are sulphur dioxide, nitrogen oxides (NO_x) and total suspended particulate issues resulted from lignite combustion and the mine's operations. Sulphur dioxide emission levels from Mae Moh power plant violated the national standard of 1,300 micrograms per cubic metre (m³) over an hour-long period. Even though the installation of the FGD system improved the air quality in the area immensely, villagers are still concerned about the possibility of the recurrence of severe air pollution and potential health issues associated with environmental degradation (Montgomery Watson Harza & Nature and Technologies 2002).

The Thai government and EGAT claim that they are certain of resolving these problems. Environmental protection and mitigation measures have been adopted as one of the four principle energy policies of the nation (Montgomery Watson Harza & Nature and Technologies 2002). Moreover, as the major financier of the Mae Moh project, ADB claims it is concerned about the environmental and social matters relating to the power plant and mine. The villagers close by, such as those residing in Huay Pet and Sob Prad are normally poor. These villagers were severely affected by the high level of sulphur dioxide emission in 1992 and 1998. As a result, many of them were hospitalised and treated with the support of EGAT. At the time, EGAT suggested that the local residents were content with EGAT's arrangements. Nonetheless, they have worries that the unfortunate incidents would reoccur. In order to prevent the reoccurrence of such events, EGAT installed the FGD systems and at the same time, announced that it was prepared to provide for those affected (Montgomery Watson Harza & Nature and Technologies 2002).

Additionally, EGAT, together with the Thai government affirm that they are truly committed to improving the environmental and social problems by following further remedial measures as advised by ADB's technical assistance. Montgomery Watson Harza and Nature and Technologies (2002) reveals that the Thai government requested ADB to provide technical assistance for the following purposes: first, to establish a thorough analysis of the Mae Moh power plant's environmental impacts. The second expectation from ADB's technical assistance is to address and analyse both the existing and the stated problems caused by the project. Third, another purpose is to give an evaluation of the efficiency of the previous remedial methods. The fourth aim is to give a formulation and suggestions in regards to remedial methods. The next aim is to give recommendations for the most effective operational plan and a monitoring project. The sixth purpose is to announce ADB's major findings, recommendations and operational plan to the people involved. Lastly, another aim of the technical assistance is to assure the engagement of the NGOs and the local administration in the monitoring project. The team of consultants for the technical assistance consists of environmental assessment experts, environmental engineers, power engineers, environmental economists, a water biologist-cum-hydrogeologist, a mining specialist and a social-cum-public participation specialist.

Local activist Maliwan Najwirot initiated the Occupational Health Patient Rights Network in 2003 in order to confront the problems arising from the pollution (Boonlong 2011). Complaints made to the public relations officials and financiers of the Mae Moh power plant were ignored. Mae Moh residents had to turn to lawsuits against EGAT with the support from the Council of Work and Environment Related Patient Network of Thailand. This environmental conflict between the local residents and EGAT occurred due to a lack of participation from the villagers in decision-making and EGAT's disregard of their opinions.

The background information on EGAT, Mae Moh power plant and coal mine, environmental concerns and their impacts have been stated. The next component of this chapter will give details of the local residents' resettlement as a result of Mae Moh EGAT's operation, the pollution standards of Thailand and other nations, the impacts of Mae Moh EGAT on surrounding villages, previous examination of documents on social matters, as well as continuous emission monitoring to give an overview of the environmental issues in Mae Moh and the standard EGAT must operate under and the environmental impacts of the power plant and coal mine.

This section describes the environmental dispute between Mae Moh local residents and EGAT Mae Moh. The environmental concerns resulted in the villagers' relocation and a decline in their health. To assist in developing an understanding of these matters, both parties' efforts towards resolving their conflict have been mentioned.

3.1.1 Resettlement of villagers

The relocation of the Mae Moh power plant is a difficult task due to its sensitive and complicated nature both operationally and emotionally (Srivichit & Srivichit 2010). In order to overcome the complications of dealing with pre-settled households and old relocation arrangements with governmental authorities and private entities alike, dedication and hard work are required. The affected households were resettled to the National Reserved Forest with the permission of the Royal Forestry Department and the Treasury Department to assist the development of the power generating units, the lignite mine and the reservoir.

Mae Moh EGAT's resettlement efforts started in 1978, spanned six phases and can be classified into four categories. Phases 1–3 focused on the residents whose properties were necessary for the power plant extension. Phase 4 focused on those who owned properties necessary for the expansion of reservoir. Phase 5 accommodated the villagers who wished to be relocated with earlier resettled families. The last phase helped those who claimed to suffer from the environmental degradation resulting from the operation of the power plant and coal mine (Srivichit & Srivichit 2010).

Table 3: Resettled households whose properties were required to allow for the construction of the Mae Moh power plant

Phase	Number of Households	Land Allocation	Expenditure (THB)
Phase I: ▪ 1978-1983 ▪ For construction of power plant units 4-7	383 (Tha Patun & Nakham village)	435.7 acres (1,102 rais)	▪ Compensation 60 mil. ▪ Infrastructure and utilities 21 mil.
Phase II: ▪ 1988-1990 ▪ For construction of power plant units 8-9	1,796 (Moh Luang, Hang Hung & Huai Ped village)	769.4 acres (1,946 rais)	▪ Compensation 472 mil. ▪ Infrastructure and utilities 495 mil.
Phase III: ▪ 1991-1993 ▪ For construction of power plant units 10-11	292 (Wieng Sawan & Ban Lang village)	25.3 acres (64 rais)	▪ Compensation 93 mil. ▪ No infrastructure and utilities

Resettled households whose properties were required to allow for the reservoirs

Phase	Number of Households	Land Allocation	Expenditure (THB)
Phase IV: ▪ 1981-1983	237 (Sob Mum, Sob Luang & Sob Jang village)	643.7 Acres (1,628 rais)	▪ Compensation 17 mil. ▪ Infrastructure and utilities 61 mil.

Resettled households who wish to relocate to their previously resettled families

Phase	Number of Households	Land Allocation	Expenditure (THB)
Phase V: ▪ 2004-2010	340 (Hang Hung village)	183.9 acres (465 rais)	▪ Compensation 120 mil. ▪ Infrastructure and utilities 52 mil.

Resettled households who claimed to be victims of the adverse effects

Phase	Number of Households	Land Allocation	Expenditure (THB)
Phase VI: ▪ 2008-2010	473 (Huai Ped, Huai King, Hua Fai & Hua Fai Lai Tung village)	375.6 acres (950 rais)	▪ Compensation 257 mil. ▪ Infrastructure and utilities 47 mil.

Source: (Srivichit & Srivichit 2010)

The resettlement process was difficult for EGAT. The problems involved many stakeholders. Every resettlement project has its own set of problems and appropriate and well-planned

strategies are required to reach collectively agreeable conclusions (Srivichit & Srivichit 2010).

The following points detail the problems that occurred during the resettlement process. The first issue was land allocation difficulties due to the need to find, evaluate and select suitable areas and then obtain approval from the Royal Forestry and National Treasury Departments. The second concern was the social resistance and complexities. Things that needed to be considered were fair compensation rates, the villagers' reluctance to resettle, and the fact that a number of villagers did not follow the pre-agreed conditions and arranged protests (Srivichit & Srivichit 2010).

The Parliament announced that the resolution for the expansion was to form a Resettlement Committee to fundamentally establish residents' requirements for substitute accommodation and salaries, making suggestions regarding logical needs, calculating levels of assistance and related compensation. This committee was chaired by the Governor of Lampang and comprised government officials, the Mae Moh community and EGAT representatives to accommodate the principle of transparency and public transportation (Srivichit & Srivichit 2010).

3.1.1.1 Results of resettlement

The Mae Moh villagers have been relocated to areas developed by EGAT that are approximately five to 18 kilometres from their original households (Srivichit & Srivichit 2010). This assured minimal adjustment socially, culturally and occupationally. The majority of resettlers ended up with nicer homes and more assets. All of these households have piped water systems and electrical connections. Moreover, resettling is claimed to have given these residents better a quality of life, such as better schools and higher incomes.

A survey conducted and approved by EGAT's Internal Audit Office revealed that the majority of the resettlers were highly satisfied with their relocation and the level of collaboration between EGAT and the local community has increased (Srivichit & Srivichit 2010).

Thailand has laws that help bring justice to litigants by clearly defining organisations' responsibilities, although an improvement on the determination of the time-frame necessary to finish investigative proceedings is still needed for these laws. The Thai government tries to share information on the environment with the public. However, some information is not

distributed widely enough or is too technical for villagers in the local communities to understand (Boonlong 2011).

Previously, this chapter has given details of EGAT, EGAT Mae Moh, EGAT Mae Moh's history, the environmental conflict associated with EGAT Mae Moh and EGAT's attempt to resolve these problems. The next segment will explore different environmental standards and current practice so the reader can understand Thai legal standard as well as the level of pollution being emitted as a result of EGAT's production.

3.1.2 Pollution standards and concerns

3.1.2.1 International standards for power plant air pollution control

Different countries have different regulations to control air pollution emitted from power plants (Montgomery Watson Harza & Nature and Technologies 2002). Power plants in different countries or cities may have different standards because it is difficult for power plants that have been functioning for years to adapt to the improved standards for air emission performance. Power supply security considerations, major engineering works and time are necessary for power plant modifications in order to enhance their air emission performance. This is the reason why the Mae Moh power plant is following a different standard required by Thai government compared to the newer power plants.

The common air pollutants controlled by regulatory authorities are sulphur dioxide, nitrogen oxide and dust particulates. A limit on concentrations in the flue gas can be imposed in order to control sulphur dioxide (Montgomery Watson Harza & Nature and Technologies 2002). Equipment for pollution control, such as a scrubber or FGD, is often required and a fuel sulphur content limit is also set. The limit on sulphur dioxide concentration is an outcome of the fuel sulphur content and removal efficiency. Mainly, furnace and burner design control nitrogen oxides by limiting the formation of the pollutant gases. Catalytic converters are equipment items that can be used to decrease nitrogen oxide emissions after they are formed from combustion, but they are not as widely used as equipment controlling sulphur dioxide emissions. Additional operational methods might be able to reduce the NO_x formation in existing boilers but they have to be carefully considered for possible operational restrictions. Dust particulate matter can be limited by fuel ash content or the utility of pollution control equipment such as electrostatic precipitators.

Table 4 shows the emission standards of the European Union, US, Japan, Hong Kong and Thailand. The table is provided for comparison of emission standards in various nations. From comparisons with other developed nations, it can be noticed that the Thai standards are still below these countries' standards. It can be seen that in regards to nitrogen oxide (NO₂) and promethium (Pm), their levels in Mae Moh are higher than those delimited by the Thai national standards; however, it appears that sulphur dioxide emissions by Mae Moh are considerably lower than that of the national standards.

Table 4: Examples of global emission standards

	EU ^[1]	US ^[2]	Japan ^[3]	Hong Kong ^[4]	Thailand ^[5, 6]	Mae Moh ^[5, 6]
150MW						
NO_x (mg/Nm³)	650	210ng/J & 90% removal efficiency (approximately 510 mg/Nm ³ for Mae Moh)	410	670	774	1,100
PM (mg/Nm³)	100	13ng/J & 99% removal efficiency (approximately 30 mg/Nm ³ for Mae Moh)	50-100 (depending on location)	50	141	212
SO₂ (mg/Nm³)	900 ^[6]	520ng/J & 90% removal efficiency (approximately 1000 mg/Nm ³ for Mae Moh)	(depending on stack height and region)	200	1,970	980
300MW						
NO_x (mg/Nm³)	200	210ng/J & 90% removal efficiency (approximately 510 mg/Nm ³ for Mae Moh)	410	670	774	1,100
PM (mg/Nm³)	50	13ng/J & 99% removal efficiency (approximately 30 mg/Nm ³ for Mae Moh)	50-100 (depending on location)	50	141	212
SO₂ (mg/Nm³)	400 ^[7]	520ng/J & 90% removal efficiency (approximately 1000 mg/Nm ³ for Mae Moh)	(depending on stack height and region)	200	1,384	980

Source: Montgomery Watson Harza & Nature and Technologies (2002)

Table 5 provides a comparison between Thailand's and other countries' air quality standards. As can be seen, the standards of air quality in Thailand are not outstanding but are still better than those of some developed nations.

Table 5: Examples of global air quality standards

Country	SO ₂			NO ₂			CO		O ₃		TSP		PM10		Pb		
	1 hr	24 hrs	Annual	1 hr	24 hrs	Annual	1 hr	8 hrs	1 hr	8 hrs	24 hrs	Annual	24 hrs	Annual	1 hr	24 hrs	Annual
USA	-	0.37	-	-	-	0.10	0.10	10.0	0.24	-	-	-	0.15	0.05	-	-	-
Japan	0.26	0.11	-	-	0.08	-	-	22.8	0.12	-	-	-	-	-	0.10	-	-
Netherlands	0.76	0.23	-	0.18	-	-	40.0	6.0	0.12	-	-	-	-	-	2.00	-	-
Australia	0.44	0.16	-	0.30	0.12	-	34.3	11.4	0.24	0.10	-	-	-	-	-	-	-
Mexico	-	-	-	0.40	-	-	-	15.0	-	-	-	-	-	-	-	-	-
Taiwan	0.78	0.26	-	-	0.10	-	22.9	-	-	-	-	-	-	-	-	-	-
Canada	0.82	0.27	-	0.40	0.20	-	15.0	6.0	0.10	-	-	-	-	-	-	-	-
Germany	0-	0.27	-	0.20	-	0.80	30.0	-	-	-	-	-	-	-	-	-	2.00
WHO	0.35	0.13	0.05	0.40	0.15	-	30.0	10.0	0.15	0.10	-	-	-	-	-	-	0.05
Thailand	0.78	0.30	0.04	0.32	-	-	34.2	10.3	0.20	-	0.33	0.10	0.12	0.05	-	1.50	-

Source: Air Quality and Noise Management Bureau, Pollution Control Department Air Quality and Noise Management Bureau (2004)

Current practice and standards: Vibration controls in the mining industry

3.1.2.2 Ground vibration

Ground vibrations are seismic motions in the ground (Montgomery Watson Harza & Nature and Technologies 2002). A vibration or seismic wave created from blasting is transmitted through the surrounding ground, which may damage the properties in the area close by.

Usually, vibration is measured in the form of peak fragment velocity and the displacement set off by a vibration wave. The vibration standards adopted in Thailand used to limit blasting in mining operations are shown in Table 6.

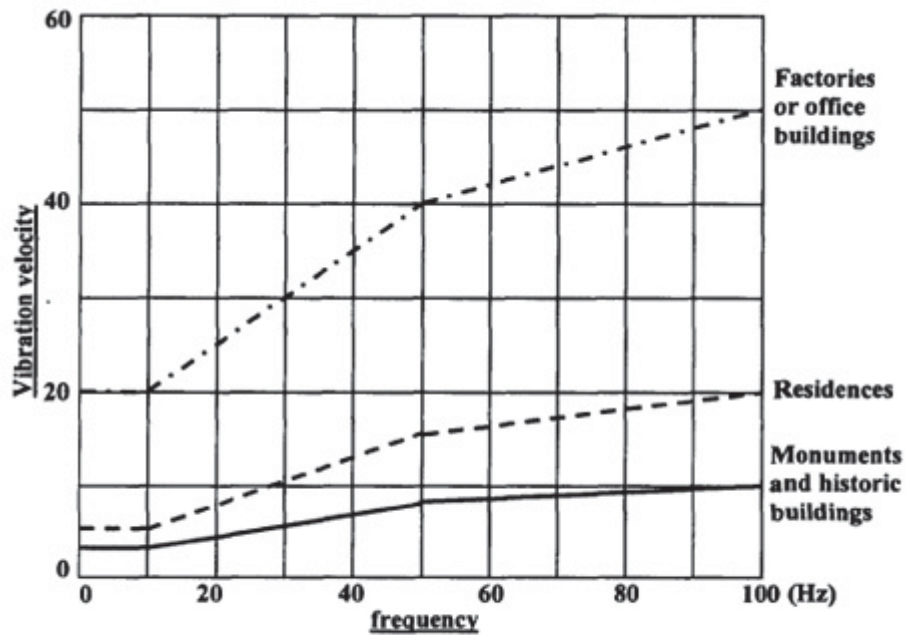
Table 6: Vibration standards applied in Thailand

Frequency Hz	Peak particle velocity mm/s	Displacement mm	Frequency Hz	Peak particle velocity mm/s	Displacement mm
1	4.7	0.75	21	26.4	0.20
2	9.4	0.75	22	27.6	0.20
3	12.7	0.67	23	28.9	0.20
4	12.7	0.51	24	30.2	0.20
5	12.7	0.40	25	31.4	0.20
6	12.7	0.34	26	32.7	0.20
7	12.7	0.29	27	33.9	0.20
8	12.7	0.25	28	35.2	0.20
9	12.7	0.23	29	36.4	0.20
10	12.7	0.20	30	37.7	0.20
11	13.8	0.20	31	39.0	0.20
12	15.1	0.20	32	40.2	0.20
13	16.3	0.20	33	41.5	0.20
14	17.6	0.20	34	42.7	0.20
15	18.8	0.20	35	44.0	0.20
16	20.1	0.20	36	45.2	0.20
17	21.4	0.20	37	46.5	0.20
18	22.6	0.20	38	47.8	0.20
19	23.9	0.20	39	49.0	0.20
20	25.1	0.20	40	50.8	0.20

- Remarks:**
- 1) Measuring device is in accordant with ISO 4886
 - 2) Monitoring
 - a) At the boundary of a mining concession
 - b) At the outer rim of a buffer zone
 - c) vibration measurement should be in accordant with Standard DIN 4150 (Table 2 and Figure 1)

Source: Montgomery Watson Harza & Nature and Technologies (2002)

Figure 1 demonstrates the limits of peak particle velocity for varying frequencies and types of structure source.



Source: Giorgio Berta 1990, "Explosives: An Engineering Tool", Italesplosvivi – Milana, 483pp. (Vibration velocity in mm/s)

Figure 1: Vibration control graph DIN Standard 4150 (Western Germany, 1983)

The German standard (DIN 4150-1983) recommends limiting values of peak particle velocity for different frequencies and types of structure.

Table 7: Limiting values of vibration expressed in mm/s DIN Standard 4150 (Western Germany, 1983) Source: Berta (1990)

Type of structure	Recording at the foundations			Recording at the floor of the highest storey of the building
	< 10 Hz	10-50 Hz	50-100 Hz	Any frequency
1. Office or factory building	20	20 – 40	40 – 50	40
2. Residential building with plastered walls	5	5 - 15	15 – 20	15
3. Historic and other buildings to be treated with care	3	3 - 8	8 – 10	8

With frequencies > 100 Hz higher levels may be accepted

Source: Giorgio Berta 1990 Explosives: An Engineering Tool. Italesplasvivi – Milans, 483pp.

Particle velocity and displacement are stimulated by waves spread through solid media. For the most part, displacement is measured in all directions, both vertical and longitudinal. Energy from seismic waves is diminished by distance depending on wave frequency. The highest frequency waves are the most rapidly attenuated; consequently, the major frequencies from blasting are high frequency and short distance and lower frequency at longer distance. Other standards similar to DIN 4150 are the Office of Surface Mining Regulation and Australian Standard AS2187-1983. From Table 8, it can be seen that for various types of construction a maximum allowable peak particle velocity is suggested (Montgomery Watson Harza & Nature and Technologies 2002).

Table 8: Australian Standard AS 2187-1983

Construction Type	Maximum allowable Peak Particle Velocity (PPV, mm/s)
Concrete construction	20
Residences	10
Monuments and historic buildings	2

For over four decades, blasting vibration impacts have been recorded and have been linked to several levels of damage to buildings and private residents (Montgomery Watson Harza & Nature and Technologies 2002). Table 9 below presents helpful information for understanding the relationship between a value of peak particle velocity and the degree of damage to structures.

Table 9: Vibration velocities normally recommended in appraising ground vibration damage risk to residential buildings with respect to the foundation of the building

Wave Velocity, C m/sec	Typical Foundation Conditions	Vibration Velocity V (mm/sec)					
		9	13	18	30	40	60
1000 – 1500	Sand, gravel, clay, underground water	9	13	18	30	40	60
2000 – 3000	Moraine slate, slate, soft limestone	18	25	35	55	80	115
4500 – 6000	Granite, gneiss, hard limestone, diabase, quartzite, sandstone	35	50	70	100	150	255
Result in Typical Housing Structures		No visible cracking		Fine cracks, falling plaster	Noticeable cracking	Severe cracking	

Source: Olofsson (1997)

3.1.2.3 Air blasts

Another undesirable impact of blasting is air blasts. These originate when the sound waves from blasting move faster than the sound's speed in the air. Air blasts that are audible are called noise, while inaudible air blasts at frequencies below 20 Hz are called concussions. Air blasts are measured and reported as an overpressure, which describes an air pressure over and above atmospheric pressure. Generally, these are expressed in mbar, psi or in a noise unit such as decibels (dB) (Montgomery Watson Harza & Nature and Technologies 2002). Values of overpressure and air blast degrees are listed in Table 10.

Table 10: Air blast effects

Pressure dBL	psi	mbar	Air Blast Effects
181	3.25	210	Structures severely damaged
171	1.03	70	Most windows break
161	0.32	20	
151	0.102	10	Some windows break
141	0.032		Some large plate glass windows break
131	0.010	1	Loose windows may rattle
120	0.0030		Threshold of pain for continuous sound
			Complaints likely
			OSHA maximum for 15 minutes
110	0.00095		
100	0.00030		
90	0.000095		OSHA maximum for 8 hours
80	0.000030		

Notes: Overpressure Conversions (dB and psi).

$dBL = 20 \log (P/P_0)$, where $P =$ overpressure (mbar or psi)
 $P_0 =$ reference pressure = 2×10^{-7} mbar
 $= 2.9 \times 10^{-9}$ psi
 $L =$ constant signifying linear frequency response

Data modified from: 1. TAMROCK 1995 : Surface Drilling and Blasting. pp 157-174.
 2. Atlas Powder Company.1987. Explosives and Rock Blasting. Field Technical Operations, Atlas Powder Company, Dallas, Texas

Source: TAMROCK and Atlas Power Company (1987)

Table 11 shows the recommended quantity of explosive charged in holes using the same number of detonation delays as compared to those for the control of ground vibration within 70 mm/s (risk level=0.03)

Table 11: Maximum momentary explosive charge (kg) as a function of distance from blast site

Distance from site, R (m)	Permitted Air pressure (mbar)	Expected oscillation velocity (mm/s)	Maximum momentary explosive charge Q(kg)	
			To control Air pressure	To keep Vibration level within 0.03*
50	10	70	7	11
100	10	70	33	33
200	5	70	90	90
300	5	70	180	160
400	5	70	440	240
500	5	70	850	340
600	5	70	1480	440
700	5	70	2500	560
800	5	70	3500	680
900	5	70	5100	820
1000	5	70	6800	950

* Vibration level = Risk level = $Q/R^{1.5}$
(TAMROCK 1995: Surface Drilling and Blasting, pp 157-174.)

3.1.2.4 Causes of air blasts

Air blasts have been reviewed and described in four categories by the Atlas Power Company (1987) as the following:

- Air pressure pulses (APP) result from direct rock displacement at the face or mounding at the blast hole collar.
- Rock pressure pulses (RPP) originate from the ground vibrations.
- Gas release pulses (GRP) describes gas released by the blasting explosive through rock gaps.
- Stemming release pulses (SRP) describes gas released from the blown-out stemming.

In all these four categories, GRP and SRP are the chief contributors to air blast damage and complaints, although they are the most controllable in blast design. The first pressure to arrive at a recording station is the RPP, which are produced by the vertical parts of ground motion. The second pulse to arrive is APP, which arrives via air at the recording station. The

top portion of the explosive in each hole or face holes will function as APP source. Close to the explosion, the impacts of blast timing can usually be detected by the sharp peaks on the waveform. At greater distances or behind the face, this appears evident due to a loss in high frequencies.

Bauer et al. (1987) have classified the components and conditions that can elevate the four main causes of air blasts:

- Detonating cord trunk lines and downlines.
- Shortage of appropriate stemming materials.
- Insufficient stemming height.
- Overdug or overloaded front row of holes in untimely burden movement.
- Drill patterns being too small or too large.
- Delay sequences.
- Atmospheric conditions.
- Secondary blasting.
- Gas release through gaps.
- Mud seams providing a simple path to the air for explosive gases at free surfaces.
- Psycho-physiological responses to air blasts and vibration.

Atlas Powder Company released a discussion regarding the psycho-physiological reactions of humans to air blasts and vibration in 1987. This mainly mentioned the origins of complaints involving vibration and air blasts as being due to the annoyance, fear of harm and frightening effects more than actual harm. The human body is very sensitive to low vibration and air blast levels, though this is not a precise damage indicator. Air blasts that are louder than 120 dB will result in some degree of startle and annoyance. Therefore, in some cases psycho-physiological views of the blast are regarded as more significant than the numerical values of the air blast and ground vibration.

3.1.2.5 Noise

The Ministry of Science and Technology and Environment (1994) has set the standard for mining activities, as shown in Table 12.

Table 12: Thai noise standards for mining activities

Activities	Standards	Value
Rock blasting	Maximum Sound Pressure Level, L_{max}	Not greater than 115 dBA
Crushing plant	Equivalent Sound Level, L_{eq} 24 hours	Not greater than 70 dBA
	Equivalent Sound Level, L_{eq} 8 hours	Not greater than 75 dBA

Source: Ministry of Science and Technology (1994)

The previous part of the thesis discusses the adverse impacts of different degrees of various forms of pollution and displays both Thailand's and other nations' standards for the aforementioned pollution to equip the reader with a better understanding of where Thailand's standard is relative to international standards. The next section of the thesis will examine the social facet of the environmental issues relating to Mae Moh EGAT's operations by scrutinising each village.

3.1.3 Social concerns identified by interviewing villagers

Individual and focus group interviews with key participants, community leaders and village residents were carried out in 12 villages. The following points are the main findings from these interviews (Montgomery Watson Harza & Nature and Technologies 2002).

3.1.3.1 Living conditions and changes following the establishment of the Mae Moh power plant and coal mine

Both positive and negative changes were mentioned as outcomes of the establishment of the power plant and the mine. The positive adaptations were mostly related to EGAT's assistance and infrastructure, for example, road construction, both in and between villages, communication convenience and transportation and so on. The undesirable changes were largely related to health issues from exposure to sulphur dioxide, odour and explosions. The damming of streams and rivers to build EGAT's reservoir and contaminated and poor quality water caused shortages of water, which led to low crop productivity. Additionally, there was also a change in villagers' lifestyle, from relying on agriculture and animal husbandry to employment-related activities. Overall, the positive and negative changes were quite similar in most villages. Detailed information for each specific village is explained below (Montgomery Watson Harza & Nature and Technologies 2002).

3.1.3.2 Hang Hung

Approximately 30 per cent of Mae Moh plant's employees are made up of residents of Hang Hung village. Also, EGAT provides funds to construct schools and temples, as well as student scholarships. Furthermore, a bus service is provided to transport students to and from schools (Montgomery Watson Harza & Nature and Technologies 2002).

Despite EGAT's assistance, residents of this village have had to deal with serious environmental degradation. Large amounts of dust have provoked respiratory difficulties and odour has been harmful to their health. Vibration and noise from machines and explosions have damaged walls, ceilings and windows panes. Tainted water, polluted air and low-quality air are environmental concerns too. The health problems reported were bronchitis, chronic sinusitis, skin disease, calculus and so on. These health concerns are believed to be impacts of the plant's operations. Flash flooding was also caused by the water released from EGAT's reservoirs during heavy rains, resulting in property damage (Montgomery Watson Harza & Nature and Technologies 2002).

3.1.3.3 Mae Jang

It was reported that EGAT's assistance involves educational assistance, a bus service for students and occasional financial support for improvement of the quality of life and medical assistance (Montgomery Watson Harza & Nature and Technologies 2002). However, there has been a significant decrease in agricultural productivity. People were forced into working as unskilled contract labourers. A large group of villages have breathing difficulties due to sulphur dioxide. Natural water cannot be consumed due to the contamination. Blasting is also another concern of the community.

3.1.3.4 Sob Jang

EGAT has hired some people from Sob Jang using various employment contracts. Financial support for temple and school construction, and an alliance of occupational groups was also offered by EGAT. Scholarships and a medical service were also made available for Sob Jang villagers. On the contrary, environmental issues accumulated, in particular air pollution and water contamination. Many villagers have experienced breathing problems and rashes. There was a reduction in agricultural production. Finally, the average life span of villagers has been declining (Montgomery Watson Harza & Nature and Technologies 2002).

3.1.3.5 Kor Ruak

One of the desirable outcomes of the plant's establishment is that it created jobs. EGAT has promoted vocational groups, sports and physical education, medical services and student transportation. Moreover, vehicles are also provided for study trips. Lastly, EGAT plans to repair the local road that links Kor Ruak with other communities. The negative outcomes are a shortage of water for agriculture and the associated decrease in agricultural production and the fact that the rain water has a terrible smell even after boiling and cannot be used. Several villagers have developed health issues such as bronchitis, skin rashes, constant headaches and breathing problems. People in the village believe that EGAT has obstructed the Rural Rapid Development Department's road reconstruction to expand the Mae Moh mine (Montgomery Watson Harza & Nature and Technologies 2002).

3.1.3.6 Pong Ton Pin

EGAT has employed some local people to work in the area. It gives financial support by offering scholarship for students, a piped water system and funds for development (Montgomery Watson Harza & Nature and Technologies 2002). Nonetheless, the pollution from EGAT's power plant and mine creates health problems, water shortages, loss of agricultural products and job instability.

3.1.3.7 Sob Prad

Positive changes brought about by EGAT are similar to those in other villages: financial assistance for occupational group promotion, local development, medical services and scholarships. Negative impacts addressed by villagers include declining agricultural production, water shortages, effects on natural resources, health problems and the lack of villagers' unity (Montgomery Watson Harza & Nature and Technologies 2002).

3.1.3.8 Hua Fai

Financial support been offered by EGAT, as well as efforts to improve the environment; for example, expansion of tree shelters surrounding the village. However, EGAT contributes to environment deterioration, low agricultural productivity, bad quality water and health concerns. In Hua Fai, a group of change agents has built close relationships with an NGO (Montgomery Watson Harza & Nature and Technologies 2002).

3.1.3.9 Thasi

EGAT helped improving the quality of life of Thasi villagers by promoting occupational groups, providing funds for development, scholarships and village road reconstruction

(Montgomery Watson Harza & Nature and Technologies 2002). However, EGAT Mae Moh has caused deterioration in the villagers' health and the loss of crops and animals, shortages of water and reduced the villagers' self-sufficiency.

3.1.3.10 Huay King and Huay Pet

A large number of Huay King and Huay Pet villagers are employed by EGAT as unskilled workers (Montgomery Watson Harza & Nature and Technologies 2002). EGAT has provided assistance to these villages by improving the road system. Villagers that are EGAT employees have made a financial contribution to the economy. There appears to be greater spending and circulation of money in these communities. The quality of housing has improved; that is, villagers have started using concrete instead of traditional materials. In addition, EGAT has sponsored job opportunities for young villagers and women. Lastly, it installed instruments used to measure the levels of sulphur dioxide in the communities.

As for negative changes in Huay King and Huay Pet, both villages suffer from water shortages and serious pollution concerns. There are complaints relating to the odour of sulphur dioxide. Explosions also generate dust and vibrations, affecting the people. Drinking water can only be bought instead of obtainable from natural sources.

3.1.3.11 Tan and Moh Luang

Tan and Moh Luang villages share issues similar to other villages. However, the residents do not feel that their pollution and health concern are as severe as those of the villagers of Hang Hung and Huay King (Montgomery Watson Harza & Nature and Technologies 2002).

3.1.4 Impact of the power plant and mine

Particular impacts on each village are presented in the table below, which ranks the observed severity of the impact, one being the most affected to six being the least affected.

Table 13: Impacts on the Mae Moh villages

Names of Villages	Sulphur Dioxide	Dust from soil/lignite	Noise from explosion	Vibration	Odour	Water contamination/shortages	Others
Hang Hung	3	2	5	6	1	4	Health, land, emotional/psychological, pollution
Sob Jang	3	4	6	5	2	1	Agricultural production affected, water shortage
Mae Jang	1	5	3	5	3	2	Agricultural production affected, health, land, emotional/psychological
Kor Ruak	1	3	5	6	2	4	Health, land, water shortages
Sop Pad	1	4	5	6	2	3	Agricultural products affected, health
Pong Ton Pin	2	4	5	6	2	1	Health, low agricultural products, ground water, emotional/psychological
Hua Fai	2	2	4	6	1	5	Agricultural production affected, health, unemployment, emotional/psychological
Thasi	1	4	6	4	3	2	Agricultural products affected, health,
Huai Pet	2	3	4	5	1	6	Health, plants and agricultural production
Huai King	2	5	3	4	1	6	Health, agricultural production
Tan	1	-	-	-	2	3	Agricultural production, health
Moh Luang	2	3	4	5	1	6	Emotional/psychologically, changed way of life

Source: Montgomery Watson Harza & Nature and Technologies (2002)

Remarks:

Tan and Moh Luang residents reported lesser effects than other villages in the survey. This could be because Tan village is located farther from the Mae Moh power plant and mine than the other communities and Moh Luang has been resettled 15 kilometres away from the former site.

Most villagers face breathing difficulties, bronchitis, immune deficiencies, chronic colds, runny noses and skin irritations.

3.1.4.1 Impacts on life in surrounding villages

The operation of Mae Moh power plant has resulted in lifestyle adaption from a natural to a suburban or urban life, the creation of jobs, better hygiene, values and educational standards (Montgomery Watson Harza & Nature and Technologies 2002). These changes are explained in the following paragraphs.

Geographical changes have occurred in terms of roads and land utility, telephones and other means of communication, local streams and rivers, mostly depending on forest and bush produce and products, following the self-reliance principle and assisting each other as if they were family. The villagers' social structure is composed of a kinship and peer group system and extended families. A high level of respect for seniority was recognised. Migration of the population was limited because there was sufficient land for farming. The community was self-sufficient. Villagers did not seek to earn a lot of money since it was not important in earning a living as they could catch fish from rivers and obtain food from the forest and bush. EGAT's damming of the streams and rivers decreased the natural water flow available to the villagers after the establishment of Mae Moh power plant and coal mine. The alteration and damming of watercourses has changed the traditional lifestyle of the people in these communities.

The decline of land tenure and usable farmland forced the majority of the local residents to join the unskilled labour workforce of the power plant and mine, ceramic factories and construction sites. The issue of land use is now a major concern among local villagers. They also acknowledge the impacts of environmental degradation on their livestock, water quality, produce and health. Regardless, there are both positive and negative perceptions.

Villagers view EGAT's Community Development Project as a tool used to assist EGAT in communicating with the local population. They understand that the project helps with negotiations for equipment supply, road repair and construction, advocacy for development of the villages and the villagers' participation.

There is resentment in the local communities towards the power plant and mine, due to the problems of pollution and relocation, especially in Hang Hung, Hua Fai, Huay King, Sob Prad and Huay Pet. Villagers from Jang Nua faced the issue of noise pollution from the mine's blasting, as well as a private firm's gravel mining.

The field survey's findings and reviews of earlier researchers show that there have been changes in the local communities since the establishment of the Mae Moh power plant (Montgomery Watson Harza & Nature and Technologies 2002). These changes have had a 'chain effect'. It appears that the mobility of the residents is high and there is a tendency that it will increase after the resettlement demands of the Hang Hung village when other villagers will become the next focus of the relocation project. These villagers are from Huay King, Hua Fai, Huay Pet, Sob Prad and very likely Sob Jang. EGAT has to realise these pressures

and should initiate an intervention to solve the current environmental problems and discuss these matters in a sensitive manner with the local communities.

3.1.4.2 Previous examination of documents on social matters

Unavoidably, the foundation of the Mae Moh power plant has both positive and negative impacts on the local environmental and social conditions. The undesirable impacts will need to be diminished. As for the influence on the quality of life, many studies previously have been conducted and will be discussed in this chapter.

UN-ESCAP (The Economic and Social Commission for Asia and the Pacific) defines quality of life as the conditions of the local residents and their societies in terms of knowledge, health, employment, life and assets, social opportunity and equity. Nonetheless, a set of six indicators of quality of life has been created by the ONESDB of the Thai Government (*The money programme* 1996). These indicators are:

The basic infrastructure indicator, composed of seven matters—land right documents; electricity; communications; community business; wood for fuel and common usage; animals for work and rights to work in villagers' own lands.

The products, revenue and employment indicator is composed of nine issues: profession and employment, incomes, farm produce, orchard produce, other professions, opportunities to travel for work, farmers' associations and loan sources for production and cultivation during dry season.

The public health and hygiene indicator includes seven issues: public health services in the community, medical and nursing care, housing hygiene, health and sanitation, newborn infants' weights, shortage of nutritious resources and family planning.

The water sources indicator contains four concerns: clean water, drinking water sources, water utility and water for agriculture.

The education and culture indicator includes seven matters: people's educational qualifications, rate of enrolment, educational provision by the government, knowledge distribution on life quality, learning places in the community, information service places and religious, sports and cultural activities.

The natural resources and environment indicator consists of three issues: soils, water and forestry.

These six indicators have been adopted nationwide to examine every Thai village's level of quality of life every five years. This social investigation of the quality of life in Mae Moh's villages highlighted three relevant social facets: 1) production, wages and employment; 2) public health and sanitation and 3) education and culture.

Mae Moh subdistrict contains seven villages. Under six facets, its quality of life was considered average. Huay Pet and Hang Hung were assigned an above average quality of life. At the same time, Huay King's quality was average. These villages have common problems with educational issues.

Almost 50 per cent of Jang Nua subdistrict indicators of life quality were lower than average. The concerns were the land right documents, community business, housing hygiene, newborn infants' weights, clean water, water utility and cultural and sport activities. The social aspects that were lower than average included wages, orchard produce, housing sanitation, newborn infants' weights, and sport, religious and cultural activities. Pong Taen had severe concerns with occupation and employment, orchard and farm produce, cultivation during the dry season, most public health issues and so on. Moreover, most villages' core concern was water for agriculture in this subdistrict, apart from Na Chae village. In Na Sak subdistrict, the life quality was average. In Mae Jang and Sob Jang, villagers' quality of life appeared to be average. Three out of seven sections of Ban Dong residents' quality of life were below average. Lastly, two out of three sections of Sob Prad villagers' quality of life was lower than average.

When making comparisons using the ONESDB's (The Office of the National Economic and Social Development Board) average criteria with other related studies and documents, the results from those studies are as follows:

Mae Moh district contains 39,168 people from 12,543 households. The district is also administratively divided into five subdistricts, Mae Moh, Ban Dong, Sob Prad, Na Sak and Jang Nua. The majority (67 per cent) of the population are of working age (15–60 years old), 24.15 per cent of the population are children (age from 0–14 years old) and approximately 8.37 per cent are over 60 years old. Around 50 per cent of the population dwells in Mae Moh, the same subdistrict as the Mae Moh power plant.

Family hygiene is usually good according to the government's quality of life criteria. However, their health is expected to be better. Many reports revealed that death rates rose from 6.33 per cent in 1997 to 8.74 per cent in 1998, the birth rate has reduced and as a consequence, the rate of population increase was 0.36 per cent at the time. In addition, the

number of patients suffering from bronchitis increased, particularly in Mae Moh. The number of patients suffering from respiratory tract infections rose from 480.55 (for 1,000 population ratio) in 1995 to 582.86 in 1998.

In 1999, 18.63 per cent of EGAT's mobile clinic patient had a respiratory tract infection. This number rose to 37.20 per cent during October 1999 to January 2000.

It was discovered that the highest ratio of the patients was where the power plant and parts of the coal mine are situated in Mae Moh. According to a report by ONESDB (2001) (2001:30), there was an increased rate of 40.90 per cent in respiratory tract infections among EGAT's medical service unit's patients in 2001.

Psychological impacts related to the villagers' chronic health issues were identified among Mae Moh's residents, especially the housewives and the elderly. They (mostly villagers of Hang Hung, Huay Pet, Sop Moh, Huay King and Hua Fai) did not find the FGD systems, dust prevention and control systems, time assigned to mine explosions and so on, reliable.

Surveys carried out by the social-cum-public participation specialist validated this psychological effect and the concerns related to water pollution from the ash water lake and recirculation structure close to Units 4–13 of the power plant as well.

Studies of the impact of the power plant and mine on the standard of education revealed that 27 primary and secondary schools, one public library and one informal education centre might have been affected by the power plant and coal mine operations. Forty-four per cent of all school children had caught colds, bronchitis and respiratory tract infections. In addition, some of the teachers had lost their odour sensitivity. According to ONESDB (2001) (2001:30), it also has been reported that these issues have caused certain teachers to request transfers.

The operation of the Mae Moh power plant also has affected the Mae Moh subdistrict's economic and social structures. The power plant's establishment pushed villagers to work as labourers and daily paid employees. Despite the fact that EGAT set a condition for its contractors to hire a minimum 80 per cent of the labour from local villagers, the contractors still neglect this condition, stating that they required workers qualified in mechanical and equipment control, rather than unskilled labour.

Monitoring and evaluation of the environmental impact after the expansion of the Mae Moh mine with the power plant Units 8–9, carried out by the Environmental and Technology Planning Division of ONESDB (1997) shows that the local residents' agricultural-based and self-employment traditions were affected by the expansion. The majority of these residents changed their occupations from farmers to labourers due to the establishment of the power plant and mine. Moreover, they began to work for construction companies and factories. This report added that the project increased the local people's income from an average of 25,540 baht per family prior to the resettlement to an average of 142,483 baht per annum afterwards. On the other hand, the more money they made, the more they invest in adapting to the urban lifestyle.

Ban Haui, Ban Hua Fai and Hang Hung villagers were most affected by sulphur dioxide. The village of Ban Hua Fai was affected by the dump location and the mine's noise. Even though, the ambient air quality watch outcomes demonstrated compliance with safety standards, the villagers may not have had a good understanding of the specific nature of the air quality watch, the results and its importance.

The deputy manager of EGAT's Health and Medical Division (Prommas 1997) examined four villages of Sob Prad on preventive measures against health hazards resulting from air pollution from the power plant. Sob Prad, Sop Toen, Mae Jang Teak Forest and Sop Moh village were affected by the power plant's emissions. The results revealed that 98 per cent of the sample population between 20–69 years old knew that air pollution originated from Mae Moh power plant. They had a good understanding about air pollution, risk variables and preventive measures. Almost 46 per cent trusted that the FGD systems would assist in preventing air pollution. On the other hand, 43 per cent were not confident in the system.

Research conducted by Pongpreeda Yotha (1999) studied five villages of the Sob Prad subdistrict (Sob Prad, Sop Toen, Mae Jang Teak Forest, Sop Moh and Huay Rak Mai) with respect to the communities' understanding of the preventive actions for decreasing the air pollution from Mae Moh power plant. The five villages mentioned above were affected by the pollution. The villagers, according to the research, were positive about the preventive actions adopted by the power plant. Nevertheless, they felt that the power plant should not be expanded any further in Mae Moh district. Furthermore, the research suggests the government was responsible for managing this environmental issue at the local level and to monitor air quality continuously.

Penprapa Siviroj and Prasit Leerapan (2000) examined the situations, needs and circumstances of the Hang Hung villagers' resettlement as a consequence of the EGAT power plant's impacts. They learned that this village had been seriously affected by the power plant and mine. The impacts were divided into three stages. The first part of resettlement took place from 1986–1990. During this phase, there was separation of families. The second phase of resettlement was from 1990–1995. This resettlement led to family and community breakdown. Lastly, the current phase, from 1995 to the present, is the resettlement required for EGAT to pursue its mining activities.

The study affirms that the local residents' request for relocation correlated with another current study's findings of a taskforce, formally appointed by the Provincial Governor of Lampang and chaired by the vice-governor in 1996. Out of 465 families, 95 per cent demanded relocation to be reunited with their families, who had moved earlier. Other reasons behind the requests for resettlement were inadequate communication, water concerns, pollution, lack of farm land, separation of community, flooding and bush fires in the dry season. The recommendation of the study is that if EGAT did not support the resettlement programme, it should offer substantial infrastructure and social welfare to Hang Hung village.

3.1.5 Water supply issues

An EGAT representative was interviewed on 17 September 2001 in response to the villagers' complaints of water shortages resulting from dam and reservoir construction to provide water supply for the power plant and mine (Montgomery Watson Harza & Nature and Technologies 2002). EGAT understood that before the power plant was established, local people acquired water from streams. Nonetheless, the representative added that from February to April, normally the streams were dry in the first place. Furthermore, the representative elaborated that after the construction of the dam, water has been offered to villages by three means.

3.1.5.1 Overflows from dams to canals for irrigation purposes

Pipelines created by EGAT supply villagers with water from reservoirs. This water can be drunk after boiling. Additionally, when the pipes are out of order or being repaired, EGAT provide the communities with water truck services.

At Mae Moh power plant, drinking water is available for local villagers to acquire high quality drinking water free of charge.

As discussed above, local residents made complaints about water shortages from the pipes, EGAT clarified that they had increased the water pump operating hours from 6 a.m. to 6 p.m. to 6 a.m. to 10 p.m. Moreover, the water pumps are to be upgraded in order to allow 24 hour per day operation. This water is provided by EGAT without charge for the first 100 litres per person per day, but if the 100 litre limit is exceeded, charges of slightly more than two baht per cubic metre apply. It was recommended that the government began to charge for the water from the reservoir's utility in 1998. As a consequence, the villagers would not have free irrigation water from the canals without the power plant's existence. At the same time, EGAT still needs to pay the government water charge for water drawn from Keelom Dam. The rate charged is 0.5 baht per cubic metre for non-agricultural use and five baht per year per rai (400 cubic metres) for agricultural use.

3.1.5.2 Continuous emission monitoring

The earlier component of this thesis has reviewed standards for different types of pollution, current practice for controlling vibrations in the mining industry, other types of pollution and Mae Moh EGAT's social impacts on villagers' living conditions. This section will explain continuous emission monitoring (CEM).

CEM can be done by extractive methods where the flue gas is sampled from the flue gas ducts by analysers housed at convenient spots within the plant (Montgomery Watson Harza & Nature and Technologies 2002). Sulphur dioxide measurement is conducted at the outlet from the electrostatic precipitator using an ultra-violet absorption method. Measurement of sulphur dioxide, nitrogen oxides, carbon monoxide and carbon dioxide are carried out by non-dispersive infra-red (NDIR) means and oxygen measurement is done using pragmatic methods. A double path transmissometer called an opacity meter is installed at the outlet of the FGD systems as well. These opacity metres have always been turned off in all units. The consultant was informed that they have been working properly.

Flue gas sample extraction lines are given with heating tracing from the point of extraction to the condensation separator and then to the analysers. Primary gas standards are presented for span calibration of the analysers. EGAT explains that daily zero/span checks are conducted on the measuring analysers with multi-point calibration made every fortnight. The sampling line is cleaned by pressurised methods. Cleaning only occurs when suspicious readings are discovered. CEM data are telemetered to the FGD control room and pollution control department (PCD) as well.

Due to space constraints, sampling spots on the flue gas ducts for the CEM are located only a short distance away from flow obstructions, for example, pipe bends, flow contraction or enlargements, etc. Sampling spots should ideally be as far upstream and downstream of flow disturbances to ensure that the flue gas inside the duct is practically homogeneous to allow representative samples to be extracted from one spot. The United States Environmental Protection Agency (USEPA), in (Montgomery Watson Harza & Nature and Technologies 2002), informs that the sampling point should be at least two duct diameters downstream and half a duct diameter upstream of a flow obstruction. The CEM sampling spots are not in accordance with the USEPA's guideline. In international practice, it is normal that traverse measurement is performed at the cross section of the sampling locations to choose the representative point for the sample probe insertion. However, EGAT has used a different approach. A sampling point was chosen and found to satisfy the USEPA. Traverse measurement was made at this point and to choose the cross sectional average concentration of the gaseous elements in the flue gas.

The sampling probe was inserted into the flue gas duct at different depths. The depth that indicated sulphur dioxide concentration closest to the cross sectional average picked above has been adopted for CEM. EGAT's inspection data shows that the precision of the measured concentration at outlet of the FGD systems from the current CEM will be within 90 per cent.

From the site observation, a meeting with EGAT's Instrumentation Section and inspection of records, it is understood that CEM has been carried out in the correct manner (Montgomery Watson Harza & Nature and Technologies 2002). Also, the PCD examines the CEM data. Nonetheless, the following points are concerns and recommendations.

CEM has reasonable accuracy when it comes to monitoring the pollutant concentrations emitted from the power plant but the accuracy of the measurement of the sulphur dioxide concentration at the desulphurisation systems inlet has not yet been confirmed. The current monitoring of removal efficiency is only an indication of its relative variant with time. Since the removal efficiency at the point of acceptance testing has already been decided by other methods, what is crucial for environmental considerations is the concentration at the desulphurisation system's outlet. Further investment for improvement of sampling spots at FGD inlet is not required at this point.

Currently, regular zero/span checks and calibration are being performed. It is suggested that in order to develop quality guarantees, preventive cleaning of the sampling ducts should be conducted annually.

The opacity watch should be resumed. Even though the opacity watch will not directly show dust particulate density in the flue gas in gravimetric units (mg/m³), it provides a decent indication of whether there are dissipated particulate emissions. This watch will store information for complaint inspection, if compulsory, and at the same time, help in assuring optimum combustion condition. With the right maintenance, double pass opacity meters have been recognised to be highly acceptable worldwide.

A large amount of data is lost with the online monitoring systems. In order to build confidence in the online systems, this loss of data needs to be amended.

The next chapter provides an overview of the environment that EGAT operates in. Furthermore, it offers literature on Thai civil society. The purpose of this part of the chapter is to help in the analysis of the forces behind EGAT's decision-making regarding Mae Moh.

4 Theoretical insights

This thesis concerns the conflict between the EGAT and the community. A key focus of this study is to understand the way in which environmental conflict in less developed nations is responded to by management. This chapter explores the literature concerning why conflict occurs and how it may be resolved. This chapter explores various means of conflict resolution in order to understand the logic behind these different methods. Next, it reviews Marxism and Weber's domination in an attempt to demonstrate the impact of unequal power that is central to understanding EGAT's influence and decision-making in this case study. Then, regulation theory is addressed to develop an understanding of the roles of agencies and regulations and law in conflicts. In addition, the chapter addresses the concept of the 'triple bottom line (TBL)' and delves into the topic of environmental conflict resolution. From exploring literature on unequal power relations and social conflict, political ecology has become the suitable framework for the analysis of this case study as it can explain the influence of power in the case study.

4.1 *Marxist theory*

The Mae Moh case study of environmental conflict can be viewed through the Marxist prism of class conflict. Marxist theory studies class conflict, with class struggle as the key dynamic in history in Marx's application of historical and dialectical materialism. It is an important framework to consider in analysing social relationships and conflict between different classes. The details of Marxist theory are elaborated in this section.

Marx divided society into four categories: primitive, slave, feudal and capitalist (Trainer 2010). Capitalism has a distinctive mode of production and distinctive class relations that distinguishes it from primitive, slave and feudal societies. Capitalists are owners of resources; hence, capitalists control these resources. Meanwhile, labourers merely have their labour power. The working class is exploited by capitalists who have the ownership of the means of production and make profits from exploiting the labour power; that is, extracting the surplus value from the working class (Molyneux 2012).

Marx claimed that the approach to explaining a society is to primarily concentrate on the mode of production (Trainer 2010). In the feudal mode of production, the essential variable of production was the land (Bober 2008). Labour was not free but people were compelled to work for the lord of the manor for a number of days per week. While the lords had the land and controlled it, in the capitalist mode of production, financial assets, machinery, factories

and so on are the crucial components of production, and capitalists possess these components. Labour was free, but in working for wages workers were exploited by capitalists who extracted surplus value from labour. This was the source of capitalist profits and this fundamental relationship of exploitation meant that class struggle was the key dynamic of the capitalist mode of production.

Marx recognised the imbalance in fortune and power that characterised capitalism and shaped the dynamic of class struggle and its outcomes. He added that the capitalist class gets to enjoy the profits the most and that the distribution of the wealth, power, privileges and status is unjust. But while the working class had less power, they struggled to get the best outcomes from an unequal society. In other words, workers had agency; they were not passive victims but helped shape their future primarily through collective action in trade unions and the labour movement.

Marxist theory provides an interesting way to analyse a society. It focuses on classes (bourgeois and proletariat) and exploitation. Even though the Mae Moh conflict can be understood as a class conflict, Marx's theory is not sufficient in explaining the relationship of Thailand's state enterprise (EGAT) and local communities as time progressed and the dissimilarities that exist in different social contexts.

Marx did not consider the role of the state (it was Lenin who developed the Marxist theory of the capitalist state) and clearly in this Mae Moh case study the role of the state is crucial in understanding the conflict dynamics and resolution. It is also important to note that in Thai society there is a large poor population, particularly in Lampang. Thailand is a society where patronage and corruption can often shape political outcomes. The status of Thailand as a less-developed nation qualifies the appropriateness of Marxist class conflict theory to the Mae Moh environmental conflict case study, though Marx's historical and dialectical materialism provides a basis for such an analysis.

Dahrendorf (1958) argues that the effort to diminish conflict between classes is unproductive. Additionally, Marxism underestimated the possibility of social mobility and the growth of the middle classes. It results in unhelpful generalisations such as, 'every society experiences social conflicts' (Dahrendorf 1958, p. 171) or in pragmatically indefensible oversimplifications: 'the history of all societies so far has been a history of class struggles' (Dahrendorf 1958, p. 171). The next section will explain Weber's (1968) concept of domination, which is more suitable for explaining modern society.

4.2 Weber's concept of domination

Unlike Marx, Weber (1968) viewed society through the lens of class, status and power and differentiated power from domination. He defined power as a person's capability to accomplish their goal in a certain setting regardless of the opposition. On the other hand, domination is described as a commander's right to constitute rules to assign instructions to others while compliance is assured. Brennan (1997) adds that domination is a superior and more confined notion than power, as not all exercises of power constitute domination. Weber concentrated on two major features of domination as he examined historical classifications of authority (Morrison 1995). These classifications are legitimacy and the creation of a commanding agent. He explained that the legitimacy is granted to the commander in order for the commander to have the rights to make demands. Weber (1968) believed that every domination scheme is founded on people's conforming faith in the dominator's right to rule. As for the creation of a commanding agent, Weber pointed out that it is significant for any type of domination and its administration.

Weber (1968) established three forms of legitimate domination: charismatic domination, traditional domination and rational-legal domination. Each of these forms causes a reciprocal mode of legitimacy, compliance, administrative system and power application.

In Weber's sense, charisma depicts 'a certain quality of an individual's personality which is considered extraordinary and treated as endowed with supernatural, superhuman or exceptional powers and qualities' (Weber 1968, p. 241). It is understood that charismatic rulers are able to do things that the common people cannot. He added that their powers 'are regarded as having a divine origin, and on this basis the individual is treated as a leader' (Weber 1968, p. 241). Charismatic rulers might rise from the common public and declare themselves saviours or in a noble position. The crucial factor is that the followers view the power as credible and genuine. A charismatic ruler's assertion to legitimacy derives from two connected levels of belief (Morrison 1995). The first level evolves from the faith that the ruler should be adhered to due to his/her phenomenal abilities. The second level develops from supporters' belief in following the ruler's orders. Followers obey the ruler with the expectation of concluding a long-lasting internal struggle. This psychological affiliation of the followers intensifies their dedication to the ruler and could possibly cloud their assessments of the ruler's abilities.

Weber elaborated that an authority is perceived as traditional if its legitimacy is founded on tradition, on the 'sanctity of age-old rules and powers' (Weber 1968, p. 226). The people are expected to obey traditional authority due to the basis of personal loyalties instead of legal requirements. The leader holds the traditional status that compels the ordinary people to adhere to them. According to this category of domination, powers are passed on as an inherited right and are considered legitimate by conforming to customary rights and conventional standards. The examples of traditional domination are monarchies and lords of feudal estates, hence the relevance to the Thai case study.

Traditional domination can be achieved through two measures (Morrison 1995). The first measure is the eminence awarded conventionally and the mindset that the leader's orders are irrefutable due to the leader's hereditary status. The second means is that the leaders possess their power by virtue of the non-mandatory potency that is bestowed upon them from titles or birthright. The relationship between the leader and the follower is administered by conventional standards, which influence the follower to comply with the leader throughout the follower's lifetime. Moreover, the leader's order is trusted to be stringent if those conditions are fulfilled. In the first point, the instruction is legitimate according to traditional principles. In the second point, the leader's order is not restricted by rules but originates out of 'good will'.

In legal domination, legitimacy is built on 'rational grounds' and the trust in the ingrained 'legality of enacted rules and the right of those elevated to authority under these rules to issue commands' (Weber 1968, p. 215). According to Brennan (1997), Weber stated that any legal standard is regarded as legitimate by right of the collective accord of the associated assembly or of a legitimate government's advocacy. The obligation here is required by law instead of a leader's personal influence (Morrison 1995). In this system, authority derives from rationally-determined judicial rules. The public obeys the law implemented by the government. A core feature of this type of domination is that those implementing the rules are also obligated to follow their own rules. Therefore, individuals merely abide as members of a state.

As Weber has indicated, legal domination is a form of domination relevant to this case study. Only the state can exercise legal power. As a result, the state is in control of legal domination. Next, regulation theory is examined to explore another dimension of the state's power.

4.3 The environment and market failure

Adam Smith suggests that markets by themselves are proficient (Baldwin, Cave & Lodge 2012; Balleisen & Moss 2010). He was mindful of the constraints of his account; that is, he stated that businessmen rarely meet and refrain from plotting against collective goods by using market force (Balleisen & Moss 2010). Arrow (1951) and Debru (1959) attempted to explain market failure using Pareto efficiency. Pareto efficiency means that in order for anyone to move into a better position, someone else or others will be put in a worse position than they were previously. The conditions where this is applied can only be due to perfect conditions, no outside influences and public commodities. However, Greenwald and Stiglitz (1986) argued the markets are always not Pareto efficient as information is always deficient.

The core to capitalist economics through the market is the *rational economic man* whereby individual decisions are made to maximise material outcomes for the individual. But the market considers only private costs and benefits, not social costs and benefits. There are cases that demonstrate firms disregarding public interests and only focusing on their own; examples are the Enron and Worldcom scandals, or more recently the global financial crisis (Lewis 2010; Stiglitz 2010). As a result, the theoretical base that free markets will bring about public goods does not exist (Balleisen & Moss 2010). Free market supporters believe that government aims to solve market inefficiencies and significantly worsens the situations. Regardless, there is no theoretical evidence that the unavoidable ‘government failures’ override market deficiencies, nor ‘counterfactual’ analysis presenting how things would be with no regulation. This is particularly relevant to an understanding of environmental issues. The market puts no value or little value on public goods, such as clean air or water. As a consequence, these public goods are exploited. Externalities such as environmental deterioration are thus a logical outcome of such an individualised market system based on private costs and benefits. Spillover effects emerge in the form of environmental deterioration that are incurred by the public as capitalists and their supporting political parties and governments support the profit-maximising decisions of firms, often at the direct expense of the community.

Coase (1972) proposed that people can negotiate themselves to a desirable result while assets rights are evidently illustrated. For example, individuals might pay off a polluter not to damage the environment, then the pollution would discontinue. Nonetheless, this theoretical position is impractical. In addition, other types of market processes are considered to be

inadequate. Hence, government interference is necessary when markets cannot generate competent outputs (Balleisen & Moss 2010).

More fundamentally, Cassidy (2009) argues that market failure is endemic in capitalism and that free markets are inherently open to crises, with economic bubbles such as the global financial crisis not aberrations but endemic to the free market system based on distorted incentives and unequal power.

This theme is taken up by Quiggan (2010) who introduces the term *zombie economics* to characterise the free market neoliberal census where markets are inherently inefficient and irrationality inherently rational.

This market failure school of thought posits that governments should intervene to regulate markets when market outcomes do not lead to socially desirable outcomes. This is relevant to the study of environmental conflict since the market fails to value the social costs and benefits of environmental assets. Moreover the pursuit of energy resources by the private and public sector often leads to non-sustainable decisions that privilege short-term energy needs over long-term environmental sustainability. However, in the instance of the Mae Moh power station the government is the owner of the resource and would have to regulate itself. It is unlikely in this instance that it would value the social interests of local villagers over the short-term power needs of the nation.

The previous sections of this chapter has discussed theories of social conflict, including class conflict and the importance of understanding market failure when considering issues of environmental conflict such as that experienced at the Mae Moh power station. Here, the argument is that free market economics and corporate and public sector decision-making systematically devalue social costs and benefits and make decisions in terms of short-term economic gains rather than from longer-term sustainability perspectives. In response to these critiques management theory has developed the concept of the TBL. Here, social and environmental objectives are added to the traditional economic objectives (read profit maximisation) of corporations. The next section of this theoretical chapter will investigate this shift to the TBL.

4.4 The triple bottom line

According to Mitchell et al. (2007) the term *triple bottom line* was promoted by Elkington in 1994 in order to develop the environmentalist agenda of those working towards sustainability

with the goal of incorporating a social facet into business accounting (Elkington 2004). During the 1980s, a three-dimensional view of sustainability became prominent in response to an acknowledged conflict between the environment and development (Mitchell, Curtis & Davidson 2007). Elkington (1998) explains that TBL indicates the three bottom lines of 'economic prosperity, environmental quality and social justice' (1998, p. ix). He adds that the 'social justice' part fulfils the TBL and it is the component of sustainability that businesses prefer to neglect. Organisations need to see beyond 'the bottom line' in order to be sustainable. For organisations to continue operating in the long term, they need to take charge to assure that they contribute to the sustainable management of natural and human resources, at the same time as the economy and well-being of the community. The concept of TBL allows organisations not only to account for their effects on the environment, but also the economy and society. For society to have a sustainable future, we must operate within the frames of the ecological carrying capacity of the global ecosystem. The economic system is a social creation. We can increase the chances of having a sustainable future by changing the way the economy functions (Mitchell, Curtis & Davidson 2007).

According to Elkington (2004), there are the seven drivers of the TBL agenda. Its first driver is the market. In this modern environment, companies find themselves challenged by customers and the financial markets about the views of their TBL commitments and performance. Consequently, business will adopt a new approach, using the TBL to create a business case for action and investment. Its second driver is values. When our values change, companies that had found themselves standing on solid ground in the past suddenly discover that the external environment has changed drastically. Examples of companies that faced failure due to value-based crises are Enron and Arthur Andersen, both involved in accounting fraud (Jickling 2002; McRoberts et al. 2002; Opper & Sorkin 2001; 2005). The third important driver of the agenda is transparency. In today's society, businesses find their activities, priorities and commitments are constantly scrutinised by stakeholders globally. The level of demand for transparency now is intense. Even a country like China was forced to open up by invariables such as the SARS epidemic. This demand for transparency is a result of a new value system together with radically different information technologies. Moreover, the failure of traditional authority compels different stakeholders to increasingly demand information.

Elkington (2004) further elaborates that the fourth factor driving the TBL agenda is life-cycle technology. There is a shift from focusing on the acceptance of companies' commodities at

the point of sale towards a new focus on their performance from the extraction of raw materials to recycling or disposal. The next driver is partners. Organisations that in the past perceived each other as opponents will increasingly build relationships and form alliances, especially around environmental successes. Time is also a crucial factor. The way that firms understand and manage time has changed. News from the other side of the world is now spread within a matter of seconds. Businesses sense that current time is now 'wider' with more and more happening every minute. Techniques such as 'just in time' contribute to stimulating the pace of competition. The last driver is corporate governance. Currently, instead of paying attention to the pay packets of directors, the focus has shifted to corporate governance. With a better corporate governance system, we can move towards genuinely sustainable capitalism. Nevertheless, many TBL campaigners have yet to focus their activities at boards or how corporate governance system works.

Elkington (2004) indicates that traditional approaches to environmental protection will still be necessary. Nonetheless, in order to create fundamentally sustainable wealth-creation congregations, governments need to adopt companies' approach of serious 'silo-busting' projects. Governments and their agencies will need to go through the following phases to achieve effective environmental protection. The first phase emphasises invasion. This is a natural procedure where any type of innovation (new technology or a new business model) invades opportunity space, creating social, environmental and economic outcomes in the procedure. The second phase focuses on the shift to the internalisation process. In this phase, a firm or value web takes in some of the costs that previously have been externalised to the environment or the public. Government involvement is required to assure externalities are fairly costed and internalised. Management needs to realise where the real priorities lie as the stress of internalisation increases and we recognise a new interest in inclusion. Inclusion is the step where a wide range of internal and external stakeholders are increasingly included, their concerns set out and their legitimate requirements fulfilled. The public sector is usually lagging in this field. However, in the future, the role of the public sector will be increasingly important in building key priorities for action and investment (Elkington 2004).

Elkington (2004) states that the next emerging challenge is integration. Every time a business needs to address a new plan, the issue of silos appears. Even major firms still have a lot to do when it comes to silo-busting and the integration of TBL thinking into corporate strategy and corporate governance. In the same way, governments will see that silo-busting and integration are crucial to the success of their own organisations as well. If the best-run firms'

business models or technologies are not sustainable in the long run, then their operations may not be sustainable. In such situations, the focus should be on ideas for incubation; that is, evaluating how more sustainable technologies, business models and industries can be incubated in this era. Despite some early programmes around industrial ecology, we have barely started to consider how governments and other key players can stimulate new clusters (geographical or virtual) of sustainable businesses (Rosenberg 2002).

In conclusion, the TBL agenda associates a broad range of stakeholders and synchronises across several domains of government policy (regulation), including tax policy, technology policy, economic development policy and so on. Designing such an extensive programme for sustainable development and environmental protection will be a fundamental governance obstacle and even more seriously, a market challenge.

4.5 *Climate change and governance*

Governments have been attempting to achieve practical and effective climate governance in order to deal with climate change (Goodman 2011a). The efforts can be seen in the Kyoto Protocol. Paterson and Grub (1992) indicate that 37 developed countries agreed to decrease the emission of greenhouse gases by 5.2 per cent lower than the 1990 standard by the year 2012 (Goodman 2011a). The threat to global political relations produced by climate change is only commencing to be perceived with the current United Nations agreement for reducing greenhouse gas emissions (Goodman 2012).

Further, the immediate requirement for a serious agreement on climate change was aggravated by the failures of the Copenhagen COP15 meeting (Goodman & Rosewarne 2010). There is no doubt that climate justice is regarded as a substantial issue. After 2012, the arrangement of climate governance, and its success, was concentrated on the debate of the meaning of climate justice and how to articulate it formally (Goodman 2011a). As a result, Goodman (2011a) describes climate governance at present as an involuntary and vital progress. Like other types of interstate administration, global climate policy looks for secured regulations to push its intergovernmental 'rules of the game'. It is compelled to identify the rapidly changing demands of climate change, and its related ramifications for justice. These regulations must be accountable to troubling confrontations as well as to rearranging (Goodman 2011a).

Formal governance in all categories reacts to some necessity and as awareness of the necessity alters, the governance conceptual structure reshapes (Goodman 2011a). However,

climate change presents particular impositions. At this point, the clash of communism and capitalism is considered systemic, displaying global-scale social conflicts which introduced the potential of planetary destruction (Goodman 2011a). It can be understood that climate change implies a universal systemic paradox. Attempts at involuntary governance are pressing, yet rudimentary.

As the existent carbon-intensive social concept comes to its limits, there are attempts to manage the changeover via collective carbon markets and the use of technology, according to Lohmann (2006), Parry, Canziani and Palutikof (2007) and Stern (2007) in Goodman (2011a). Christoff (2006) and Dorsey (2007) cited in Goodman (2011a) claim that climate change escalates as attempts to discuss the problems turn out to be insufficient, pushing new points and tactics onto the agenda. In addition, Sousa-Santos (1995) in Goodman (2011a) explains that the consequential disrupting transition indicates a time of social and political instability. The systemic ecological problem posed by climate change and its amplification drives the agenda for climate administration. Goodman (2011a) points out that climate change entails a post-growth community and, as a consequence, large-scale reconstruction of social relations.

Climate change displays the paramount conflict between capitalist progress and ecological sustainability. The climate is considered a global shared possession. Consumer capitalism, along with its voracious demand for acquisition of possessions, has significantly compromised the basis of human survival (Goodman 2012). As a result, major governmental players acknowledge that climate change presents an intense obstacle to the persistent sustainability of the capitalist conglomeration, according to Schwartz and Randall (2003) and Stern (2007) in Goodman (2012).

Currently, policy discussion is based on market mechanisms. As an approach, re-pricing is regarded as a means to make externalities internal. This amends market insufficiency and allows a low-carbon development path (Goodman & Rosewarne 2010).

Nevertheless, the principal policy discussions regarding climate change purposefully avoid the social and ecological sustainability topic because it is pitted against technical performance. Economic advancement is the undeniable truth of political discourse, as is the capability of technology (Goodman 2011b).

Since the Mae Moh case study, like instances of environmental issues across developed and developing nations, involves local opposition often aided by NGOs, this section will be followed by literature on the third sector.

4.6 NGOs and environmental conflict resolution

Every society faces conflicts over public and private land management or pollution: water quality, air quality, waste management and environmental dangers. Dukes (2004) describes environmental conflict as ‘a subset of the larger category of public conflicts involving issues such as health and healthcare, race and ethnicity, economic development and governance’. He elaborates that it may include numerous jurisdictions and levels of jurisdictions (international, federal, state and so on). Moreover, the dispute could be less about the resources than about the concerns of jurisdiction or authority.

There is no clear definition of NGOs. Parry (2009), however, made an attempt to define these organisations as:

The notion ‘non-governmental’ refers to the function of these organizations: they are not endowed with governmental tasks. NGOs are not created by treaty; nor are they established under international law. Apart from these characteristics, NGOs have little in common.

Crowfoot and Wondolleck (1990) state that NGOs are organisations that focus on environmental and natural resources. When people become dissatisfied with government, business or other interest groups’ decisions and values, NGOs express their expectations and attempt to make changes. They want something different from what other societal parties may want. They need to confront three main tasks. Firstly, they need to determine their objectives. Secondly, they must acquire resources and develop influence to reach their goals. Thirdly, they aim to have an influence on other organisations’ decisions or actions. They operate with smaller budgets than other interest groups and depend on contributions from volunteers, rights granted by laws and regulations, public support and the belief of a pluralistic and democratic political culture. They do not possess the specialised assets of government and business, nor do they control the same access and influence with the media, legislators and other elements that generally support established institutions, leaders and policies. Accordingly, they rely on differences in values and attitudes found in society among citizens and leaders. Often, environmentalists and activists are more accustomed to

adversarial strategies of change, in which pressure, coercion and unilateral decisions are the main features, than they are with other dispute resolution efforts.

Dukes (2004) utilises the term environmental conflict resolution (ECR) as an inclusive description for the whole range of processes. The ECR process involves direct, face-to-face discussion, reflection to improve participants' mutual understanding, and incorporation of diverse sectors speaking for various and generally rivalling ideologies. Other aspects of the process are openness and adaptability, and general agreement or some alternative to unilateral decision-making as a foundation.

Arts (2002) explains that in the past, the relationship between businesses and NGOs was mainly antagonistic in nature. The environmental movement framed the business sector as the 'bad guy' while the NGOs were accused of being unrealistic and idealistic. Local CSOs tend to focus on the enforcement of existing regulations and forcing firms to abide by them (Hutter & O'Mahony 2004). Hence, both sectors usually end up having environmental disputes with each other (Arts 2002).

NGOs play significant roles in driving policy reforms at a national level. The main purpose of NGOs is to support the bottom-up implementation of policies. Asia is suffering from severe environmental degradation. Most nations in the continent prefer to focus on development over environmental concerns; only when the latter are so great as to arouse public concern does the situation change. Usually, the warning indicators are overlooked and the negative results are suffered. Nevertheless, the same types of environmental concerns occur globally where people in all types of states value the same level of environmental quality (Frank, Longhofer & Schofer 2007).

The countries with the weakest NGOs tend to be the most despoiled countries of the world, whereas the cleanest countries have the strongest NGOs. The UN Environment Programme states that NGOs have become important partners in development and preservative projects. They are involved in designing and implementing environment rules, programmes, strategies and preparing standards for environmental impact assessments (EIAs). Moreover, they play a crucial part in advocacy. Asian policy-makers admit that domestic environmental NGOs have influenced national regulatory reforms. Some analysts, however, point out that solid proof of the influence of NGOs is hard to obtain (Potter 1996). In a number of studies, the NGO movement is included because they are on the scene, rather than because their influence is noticeable.

Nevertheless, literature does confirm that there is expanding evidence demonstrating that NGOs have an impact on government decisions on policy-making. It is a shared belief that NGOs play a decisive role in advocating national policy reforms, transmitting the local people's voice as organised political demands. Asia's national environmental NGOs are new, small and inadequately funded. For this reason, it is questionable as to how these NGOs can manage as effective pressure groups to leverage policy reforms—resource constraints and limitations, operational restraints and the delicacy of NGOs alliances, are all limiting factors. Other than NGO effectiveness, there is also the issue of NGO autonomy. Autonomy is considered the strength of an NGO's position. In order to represent genuine local demands, NGOs must truly arise from the community. Without autonomy, NGOs could end up representing the elites or some specific interest groups.

There are certain aspects of NGOs that arouse scepticism (Frank, Longhofer & Schofer 2007). First, NGOs are highly dependent on their host national states. China is an extreme example. Here the NGO concept challenges the definition of autonomy where you have government-organised non-governmental organisations (GONGOs). The reforms of China's administration in 1998 stimulated the increase in the amount of GONGOs. The primary goal of establishing GONGOs is to receive international assistance and to improve technology and information support for China. However, terminology remains questionable (Frank, Longhofer & Schofer 2007).

In addition, Frank et al. (2007) elaborate that international organisations usually offer indispensable monetary support to domestic NGOs. Besides the financial help, international organisations also supply informational and strategic resources, such as 'activist's toolkits' providing how-to information on everything from how to form an NGO and how it could become influential. The international distribution of strategies, directions and other types of information creates a degree of isomorphism between NGOs globally that contradicts the idea of NGO independence. Even though ties between international organisations and local NGOs could help increase NGO effectiveness, they disrupt the notion that local environmental NGOs are bottom-up, grassroots, peoples' associations, independently expressing the local peoples' interests. As a result, domestic NGOs are regarded as ineffective and controlled. Nonetheless, in some cases, domestic NGOs actually gained an advantage after international non-governmental organisation (INGO) intervention.

Frank et al. (2007) explain that domestic environmental NGOs and national policy reforms are developed from world society. They originate from the international environmental treaties, intergovernmental organisations (IGOs) and INGOs that formed the foundation of the worldwide environmental management. Thus, Frank et al. (2007) propose that the sources of national environmental NGOs are not domestic but international. They additionally propose that national environmental policies are created at the global level instead of the local level. For example, the two main waves of environmental ministry establishments are the two environment conferences of the UN in Stockholm in 1972 and Rio in 1992.

Frank et al.'s (2007) third proposition is that national environmental NGOs and national policy reforms tend to be loosely coupled. Instead of pursuing a strict time sequence from NGO movement to policy change, Asian NGOs may start contemporaneously with, or after, policy reforms. Loose coupling is conspicuous when the issues of local NGOs better reflect the world's than the local nation-state's environmental priorities. The routine occurrence of loose coupling does not imply that national environmental NGOs can never be related to policy modification. In the beginning stage, strict causality is unlikely; that is, policies and NGOs emerge together but they may end up being mutually strengthening after the two are founded.

Frank et al.'s (2007) study shows that domestic NGOs have an influence on the proportions of pro-environmental policy adoptions, supporting the sound 'grassroots' imagery. Their findings indicate that economic development and population pressures have large and negative impacts on policy adoption. If a country is dealing with economic and population pressures, the rate of policy adoption tends to be slower. By contrast, democracy and education have positive effects on environmental adoption.

Despite any direct impact on policy, domestic NGOs are driving forces in the global arena. The cultural expectations and organisational rules that are structured into world society authorise and legitimatise this style of governance. Moreover, authoritarian countries such as China are also experiencing both external and internal pressures to engage in democratic reforms. Even though China's GONGOs are different from NGOs, they symbolise China's effort in the democratic world. The international institutionalisation of democratic forms of governance has granted considerable authority to domestic NGOs (Frank, Longhofer & Schofer 2007).

As public guardians, NGOs induce democracy, acting as the middlemen between the citizens and the nation-state. Domestic NGOs have to be socially constituted within the various countries with building components provided by world society, in order to truly support the process of democracy. The top-down characteristic of the process is evident in most countries in Asia that have weak CSOs (Simon 2006).

Even though domestic NGOs cannot be described as effective and autonomous players in national policy reform, they still play a crucial role by upholding the conventional NGO policy relationship. NGOs typically support policy reforms by functioning as receptor stations, receiving and passing signals from world society to state authorities and consequently encouraging policy adoption. In Asia and the south, ecological modernisation has taken place as domestic NGOs worked as messengers for improving global values, standards and practices of environmental management (Frank, Longhofer & Schofer 2007).

NGOs provide legitimate and authorised local voices for global reforms, enabling bottom-up democracy and stimulating the adoption of the reform. The higher the number of domestic NGOs, the more likely the reform signals are to be picked up and implemented by domestic political actors. If the political actors are resistant, occasionally NGOs can apply changes directly, avoiding the formal policy mechanism and performing under the authority of the global society (Frank, Longhofer & Schofer 2007).

Frank et al. (2007) add that domestic NGOs achieve their goals through authority instead of power. Most NGOs possess little or no power at all. INGOs are not capable of governing in the normal sense. They have a low sanctioning force, even if they behave as if they have more authority than other players. They create rules and expect those rules to be obeyed. They make demands on governments or transnational corporations and when their demands are not met, they exercise moral judgement. They pass codes of ethics and equip them with legitimacy so that obvious violators lose standing in the society.

Crowfoot and Wondolleck (1990) indicate that different values regarding natural resources or environmental degradation are the origin of environmental conflicts. Some individuals recognise the value of wild and natural resources while others do not. Some regard maintaining biological diversity and environmental integrity for future generations as a high priority, while others prefer harnessing nature's resources to service the needs of today's society. These conflicts can also be incited by different interests leading from the results of environmental and natural resource management decisions. The threat of loss of natural

resources to a particular group, or the immediate threat of monetary loss, can cause people to gather and protest. Covey and Brown (2001) suggest that the degree of conflicting and converging interests helps determine both sides' engagement (Smith, Mathur & Skelcher 2006). In the Mae Moh case study, the conflict was triggered by different values over environmental degradation and the evaluation of the risks connected with it. It is difficult to determine just how many people were affected by the pollution caused by the Mae Moh power plant and mine because different groups of people assess the risk differently and therefore they approach the issue in different ways and end up in conflict. For NGOs to make appropriate decisions to resolve disputes, they need to have a good understanding of different aspects of environmental conflict—the reasons why that particular conflict exists and persists, and how other groups regard the issue.

Conflicts are seen as continuous processes in a pluralistic society. Different groups, such as the public sector, business sector and the third sector, have different values, goals and responsibilities. Often the differences in their responsibilities lead to disagreements among these interest groups. In democratic politics, structures and procedures that allow the expression and protection of these differences exist. When conflicts need to be resolved, these processes help in decision-making. These structures are tools that are developed to support dispute settlement between groups whose interests are different, or who have different values. Environmental laws and regulations can be viewed as reflections of agreements between different interest groups (Crowfoot & Wondolleck 1990).

Crowfoot and Wondolleck (1990) suggest that the preferred means of settling disagreements are legislative decision-making by elected representatives. The secondary means of settling disputes is relying on judicial decision-making. The court's work does not rest solely on specific statutes but also the nation's constitution and, if available, its bill of rights. In the course of the operation of legislative and judicial branches, negotiation takes place. Oftentimes, the process of negotiation results in societal agreements embodied in contracts. In addition, environmental negotiation can be understood as an extension and refinement of a long-established custom of informal negotiation and informal settlement among differing interest groups. These new tools for conflict management and decision-making are perceived as supplemental in judicial, regulatory and legislative processes.

Companies are following more proactive rather than reactive environmental approaches, resulting in collaborations between industry and other societal groups (Fischer & Schot

1993). The significance of partnerships was recognised by the Greening of Industry Network's (GIN's) first conference in 1991, and in 1997. This new form of alliance was one of GIN's central priorities because of its new role in emerging sustainability paradigms (Schots, Brand & Fischer 1997).

In eco-efficiency, partnerships function as vehicles for industrial innovation in terms of life-cycle analyses and environmental management. Additionally, partnerships seem to encourage a more apparent system view of industrial transformation, a basic proposition of the system-change perspective of sustainability, making stakeholder cooperation important to actualise ecological practices. Partnerships are constructing new relationships between industry, government, NGOs and other societal stakeholders, and creating new social values compatible with sustainability, explain Biondi et al. (1998).

Sustainability needs cooperation at different levels, for example, among societal groups or across functions within organisations. Mr. E. Ronchi, former Italian Minister of Environment, viewed the Buenos Aires Summit on the Climate Change Treaty as promoting collaboration among industrialised and developing countries. Partnerships between countries, the public, government and NGOs at large are also crucial to change public policies and markets to guide industry's creativity, resources, technology and global reach towards sustainability. Many conference contributors noticed the relevance of collaborative networks, partnerships and green alliances within and across sectors as substantial for both developed and transitional economies (Assouline 1998; Klemmensen & Kragh 1998; Stafford & Hartman 1998).

Thailand has endorsed the Rio Declaration, Agenda 21 and the United Nations Framework Convention on Climate Change (UNFCCC). As a consequence, it is committed to implement the precautionary principle and values of sustainable development as agreed in the declarations. The Constitution of the Kingdom of Thailand B.E 2550 (2007) provides for the application of sustainable development guidelines under Article 85(5), which specifies that Thailand shall comply with the environmental and natural resources policies by following the sustainable development principle. As a result, if the government's decisions result in permanent damage, the government should guarantee that effective measures would be put to use to avoid environmental degradation or harm to human life even if, scientifically, the full effect of the harm has not been established. In contrast, the Map Ta Phut and Mae Moh environmental case studies of Thailand revealed that there is a need for effective legal

execution. The Thai government's actions were not consistent with the implementation of the precautionary principle when it encouraged and permitted the activities at the Mae Moh power plant and Map Ta Phut Industrial Estate. The government failed to comply with the objectives of the international principles for protection of the environment, specifically: Chapter 6 of Agenda 12—to decrease health risks from environmental pollution and risks; Chapter 9 of Agenda 21—to protect biological variety; and Principle 4 of the Rio Declaration—to accomplish sustainable development through environmental protection (Boonlong 2011).

Although Thailand ratified the Kyoto Protocol, it is a 'Non-Annex I' country and accordingly, there is no legally binding obligation. In addition, there is a need for a liberal judiciary, strong environmental legislation, the enforcement of public rights in relation to information, participation and justice, and obvious constitutional requirements, in order to strengthen the rights of the people and affected communities. Thailand needs strong institutional support structures to ensure the enforcement of these rights. If the citizens are not given the opportunity to be a part of decision-making procedures, they will not have the ability to influence the government's decisions (Boonlong 2011).

The business sector and environmental conflict

According to Kolluru (1993), business organisations must deal with the new pressure of environmental performance. Various businesses thus have made changes to adapt to the modern environmental era. However, incremental adjustments are no longer adequate, there are whole new methods of production and managing natural resources emerging to accommodate environmental requirements. Firms, their employees and managers are now faced with the massive practical and conceptual challenge of converting their organisations into economically and environmentally sustainable ones (Post & Altman 1994).

Post and Altman (1994) noted three forms of environmentalism that occurred between the 1970s to the 1990s. The first form is called compliance-based environmentalism. A central public policy message of societal concern for the environment has been reinforced by statutes, administrative regulations and court decisions. From the legal and regulatory field, three messages have emerged: governments must be firm in addressing their own pollution control demands; cooperative arrangements must be developed to address trans-border pollution problems between regional and global players; and policies that delegate environmental externalities should be repressed, at the same time, regulation and taxation

should be used to discourage ecologically damaging behaviours and to support ecologically favourable options.

The second form of environmentalism is market-driven environmentalism. The power of market incentives to persuade and stimulate behaviours that are ecologically beneficial was discovered in 1980s. The incentives of cost savings and environmental development were generating innovations that no regulatory bureaucracy had been able to control or manage efficiently. Faced with pressure to obey increasingly demanding and expensive regulations, companies started to redesign manufacturing processes in order to reduce toxic substances, lower production costs, improve products and boost efficiency (Buchholz, Marcus & Post 1992).

The last form of environmentalism is value-driven environmentalism. This is where it was discovered that consumers were willing to pay more for less polluting goods (Moraga-Gonzales & Padron-Fumero 2002). Environmentally-friendly goods' sales were boosted dramatically and politicians realised that environmental matters could help stimulate voter support, or alternatively, could prompt hostility. The media also began to pay more attention to environmental concerns (Post & Altman 1994).

Post and Altman (1994) demonstrate that the perceived risks of industrial operations became more noticeable due to reports of accidents, explosions and oil spills. It became more difficult to achieve plant siting and to acquire operating permits, and communities became more active in their opposition to environmental risks. The 'NIMBY' (not in my backyard) syndrome became well known in the public. The public placed a higher importance on the cost of health consequences than on the promise of job opportunities. This new social standard was directly affecting the capacity of the electricity utilities and the chemical, petroleum, steel, and pulp and paper industries to operate: communities would no longer allow critical deterioration as the price for economic opportunity. These industries are obliged to synchronise economic activity and environmental protection. This attitude is known as sustainable development.

Multiple academics (Cairncross 1992; Deegan 1999; Gore 1992; Kleiner 1991; Post 1991; Schmidheiny 1992; Stead & Stead 1992) have discussed industry's role in environmental management in the literature. There are three ideas that stand out. First, there is a need for more cooperation between business, government and society in order to protect the environment effectively. Second, new frameworks that account for environmental costs are needed. Third, useful models for environmental development are designed by a group of 'best

practices' firms (Post & Altman 1994). Post and Altman (1994) introduce three phases of organisational change and learning. Phase 1, adjustment: companies usually start to respond to 'greening' pressure by adapting current practices as needed. This change is driven by regulatory or market pressure. Phase 2, adaption and anticipation: environmental values are attached to other corporate values. Lastly, phase 3, innovation: a small group of companies has gone through intensive re-examination and re-evaluation of their environmental goals and reached a point where those goals are actually institutionalised in all parts of the company. This step takes substantial time even in organisations with the most noticeable environmental responsibility.

4.6.1.1 Nature of conflict between the private and the third sector

The prominent pattern of the business and civil society relationship is still hostile. Currently, some business organisations and NGOs have been quietly collaborating to overcome their disagreements. In several cases, NGOs have forced companies to negotiate with them by protesting and using other forms of campaigning. For example, the confrontation between Greenpeace and Shell led Shell UK to engage the Environment Council, a British CSO to assist with a series of European-wide 'dialogue forums' between Shell and multiple NGOs and other stakeholders on different disposal choices for the Brent Spar oil rig (Greenpeace 2011). However, the relationships between NGOs and business organisations remain antagonistic (Murphy & Bendell 1999).

There seems to be more cooperation between the private and third-sector organisations in industrialised countries than less developed ones. While there has been a long history of business–NGO relations and consumer politics in industrialised states, most NGOs in third world countries initially associated themselves with movements to counter the state, and for all practical objectives, ignored the market and its institutions, according to de Olivera and Tandon (1994). Nevertheless, CSOs in developing countries are beginning to realise the importance of influencing more directly, and collaboration with businesses. Many within the global NGO movement still regard any form of business–NGO cooperation with suspicion, while others see the improvement of relationships to be a necessary tactic in changing unsustainable and unjust business strategies (Murphy & Bendell 1999).

The previous section of this chapter described environmental conflict, the concept of TBL, the nature of NGOs and businesses with environmental issues, and the relationship of the two

parties. The next segment will discuss the influence of power on conflict using political ecology to shed light on the analysis of power.

4.6.1 Political ecology

This part of the thesis uses political ecology to shed light on the issue of power to help to understand how interest groups influence the circuits of power to reach their desirable outcomes.

It is recognised that environmental matters are formed by political economic variables. External political force stimulates and shapes managerial rationalities and manipulates the way that the ecological aspect is articulated into organisational practices. According to Foucault (1977), environmental management can be viewed as another type of organisational control, which is characterised intra- and ‘inter-organizationally’ by both power and knowledge. Organisational players and other agencies often have the ability to change existing circuits of power and influence the conception of the regulatory framework and the selection of technological innovations (Clegg 1989).

The superior developed nations are complicated civil societies with a high density of community organisations. Some of these local organisations may possess sufficient power resources to be able to influence government policies to confine the organisation of private capital (McCarthy & Wolfson 1996; Pakulski 1991). In different contexts, for example, in developing states, the capabilities of the government to obtain legitimacy may be substantially less. The elite of these countries tend to make up many of the stakeholders in subsidiary investments. In such circumstances, local state managers are unlikely to enforce laws that support environmental conservation (Orssatto & Clegg 1999).

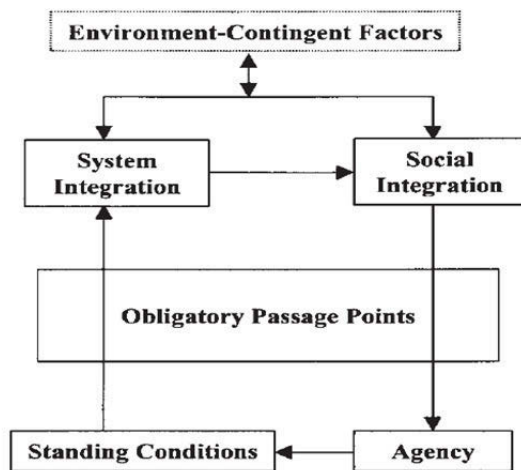
4.6.1.1 Framing the political ecology of organisations

When agents get others to do something that they would not do otherwise, episodic power relations exist. We normally regard these episodes as the outcome of resource-dependency power; that is, the utilisation of abilities based on resources whose possession builds dependencies for others requiring these resources (Pfeffer & Salancik 1978). Nonetheless, ‘issues’ and ‘nonissues’ need to be taken into consideration, according to Bachrach and Baratz (1970). Power is not always noticeable in functioning in stopping actors from taking actions. At times, it does not need to be put to use. Either by indirect or absolute control of the tacit agenda of what is a legitimate concern, social construction already restricts what can and will be acknowledged in an organisational region. When matters that have not been

perceived seriously in the past are supported, and as a consequence pushed onto the agenda, they might delegitimise and transform the arena by proposing new points, participants or conditions for reflection. When there are changes in relations, the basic structures of episodic power are altered.

New players, concerns, participants and agendas can influence the legitimacy of circuits of power. Through the stabilisation of social integration and system integration, legitimisation happens (Lockwood 1964). Lockwood (1964) adds that social integration's problem highlights the orderly or conflictual relationships between components of a social system. While disputes between players may be noticeable in explicit power episodes, differences between components of the complete system may not. On the other hand, concerns may emerge out of such disputes and opposition. Therefore, the institutionalisation of environmental practices in an organisational field will be protected through the conversion of both social integration and system integration: the former, through the influence of new players, the latter through the management of new disputes. Hence, social integration and system integration can be thought of as different stages in the circuiting of power.

Figure 2: Circuits of political ecology



Source: Orssatto and Clegg (1999, p. 268)

Clegg (1989) states that circuits of power can be used to analyse relationships between organisations and the environment. Thus, an organisation's political ecology approaches ecological practices as an uncertain, competed and indefinite territory of political and strategic moves, positioned both within and around organisations. Figure 2 illustrates the basic elements of the circuits of political ecology framework.

4.6.1.2 Environment-contingent factors

Numerous drivers encourage or obstruct the endorsement of environmental strategies by organisations within a particular field. Legal accountabilities and enforcement, customer requirements for more hygienic processes and products, progressively stricter laws, the pressure of related business, interest groups and agencies and competitive obligations may be such drivers. These factors are termed environment-contingent factors or eco factors. Indirectly, eco factors can reform what people do in and between firms, not through specific cases of the exertion of power, but more subtly through influencing the circumstances within which power is implanted (Orssatto & Clegg 1999).

4.6.1.3 System integration

The word system is usually used relating to the interdependence between parts. According to Lockwood (1964), this perception has been extended by system integration to the technological control over the physical and social environment and the skills linked to this means of control. System integration concerns the manner in which innovation may delegate or oppose the relative competencies of different agents within an organisational arena. Environmental innovation could be the response to the pressure inflicted by related businesses from industrial competition or from new legal standards. When there are changes in system integration, they not only alter the technical task but also the relations between agents in organisational fields. It is critical to analyse how such innovations can support or obstruct existing social relations within the institutional power contexts where organisations are embedded. Additionally, there is the issue of social integration. The complications of a sociotechnical system need to be considered.

4.6.1.4 Social integration

Social integration deals with the symbolic sphere, and with language and its relations of meaning and how these determine particular types of membership classifications in regard to other classifications within organisational fields (Orssatto & Clegg 1999). Social integration overrules system integration because it builds meaningful specific artefacts and technologies in evident ways. Existing relations of meaning and membership may assist or constrain the induction of change introduced through system integration.

Relations of meaning and membership within and between organisations are fixed by informal and formal rules. Through the ways they are embedded in rituals and routines, these relations characterise who one is and what one does. Through these, particular matters are

started and certain are achieved. Players in and around organisations use several means available to them to gain resource control to attain their favoured results. These results may either replicate or change those rules that currently fix reality at present (Orssatto & Clegg 1999).

4.6.1.5 Agency

Agency refers to the capacity of individuals to influence outcomes even when they have little power when compared to corporations. Knowledge potentially has more power over a longer period of time, if it is embedded in routines and structures, rather than in people. Power is incorporated in knowledge relations that are implanted in the cultures of an organisational sphere (Schon 1983). Representative organisations are important in attempting to influence the progress of environmental strategies in these cultures. For example, if an alliance was initiated, many interest groups can reinforce and assist the alliance to strengthen its position as a competitive business enterprise; the alliance itself is evolving into an agency because it is making an impact in that institutional power context.

Agency comes from many origins, containing many rationalities of power (Orssatto & Clegg 1999). Generally, it is reflected as a rationality that invalidates, stops and interrupts. Comparatively, the rationalities implanted in existing structures of system integration are overall unfriendly to intrinsic environmental innovations. Regardless, in the circuit of social integration where meaning dictates, instead of system integration, transformation might be feasible. Unlikely, agencies, such as a small number of devotees and event organisers show a capability to create a minor change which may result in the eminent transformation of an organisational field.

4.6.1.6 Standing conditions

Whether any specific episode in which power is exerted has an effect relies on the way the organisational field is formed systematically (Giddens 1984; Weick & Westley 1996). This 'systematically and structuration' is placed in the framework through the apprehension of the standing of conditions. The terms precondition and controlled environment are borrowed from experimental natural science. The experimental evidence will not be anticipated without the standing conditions being confirmed. Standing conditions here refer to conditions that have endured the stable environment upon which resources depend. Normally, access to specific resources is needed to make things happen. Therefore, generally, as long as standing conditions are maintained power has a degree of predictability. A high degree of system

integration and social integration make innovation more difficult at the level of overall circuits. Contexts where organisational fields couple too loosely also make it difficult to accommodate innovation (Orssatto & Clegg 1999). It is essential to acquire sufficient control of other agencies without having so much control that one builds a field that fails to continue learning. Hence, power not only concerns the exercise of capacities, it also relates to the standing conditions within which these capacities are exerted.

4.6.1.7 Obligatory passage points

Any innovation will pass through existent passage points, as existing interests protect what is mandatory and what is not, or start new ones (Orssatto & Clegg 1999). The manner in which power relations are formed depends on the reproduction of particular obligatory ways of getting things done. Organisational routines, formal or not, establish illustrations; for instance, the standard used for selecting pollution control technology and for the assessment of corporate environmental performance.

4.6.1.8 Examination of power

The examination of power is a complicated issue. This examination of power discussed the organisational field as a 'dense and dynamic net of omnipresent relations' (Flyvbjerg 1998, p. 5). Power can be positive and it is not only the issue of specifying who controls the resource dependencies that determine where the centres of power are. It is not just an issue of power centres and of the state as a locus of power, however. A small minority possess real power and control of resources; the vast majority are powerless and do not even understand their loss. According to Clegg (1989), these are the mistakes and delusions of contemporary theorising. Contemplating the utilisation of power does not oblige one to disconnect power from knowledge; it guides rationality and advances to immerse and infuse it with its rationality. Moreover, it is inseparably linked to the capacity of agencies to make a difference. It is crucial to find the way through the circuits in which power shifts.

The framework of circuits of political ecology created by Clegg (1989) is used as the theoretical framework to analyse a specific business–environment relationship concern. Even though EGAT's environmental policies can partially explain the progression of the organisation in taking more environmental friendly approaches, it is still vital to examine business– environment relationships from the perspective of how power relations shaped and formed EGAT's environment.

In this chapter, many theoretical issues related to this case study are reviewed. However, it is still important to distil from the smorgasbord of theories relevant to environmental conflict in order to form the theoretical framework to analyse the case study. The theoretical framework of this research is used in other studies of political ecology (Orsato, Clegg & Falcão 2013; Orsato, Den Hond & Clegg 2002). Clegg (1989) adds the aspect of circuits of power and how these can be used to analyse relationships between organisations and environment.

This thesis reviewed a number of theoretical approaches to *unequal power relations and social conflict* before choosing *political ecology* as the theoretical lens to analyse the primary and secondary data collected during the fieldwork for this thesis. *Political ecology* enables an analysis of the Mae Moh environmental conflict in a way that situates the responses by EGAT within the economic, social, legal and political structures and relationships—formal and informal—of Thai society. EGAT was constrained by obligations to the Thai state and by the community struggles against the local environmental impact of the operation of the power plant. However, the *agency* of the local community was undermined by EGAT's ability to provide compensation in various forms to groups and individuals chosen by their relations of *patronage* to EGAT officials and local politicians.

Moreover, political ecology is the most useful theoretical framework for understanding the dynamics of the Mae Moh environmental conflict. This is because it allows an understanding of the way that unequal power relationships played out during the conflict and its resolution.

5 Research questions and methodology

This chapter will identify the research questions, objectives, theoretical stance and demonstrate the methodology to be used in order to obtain the answers to the research questions. It will also cover data collection and declare ethical considerations regarding the fieldwork.

Research questions are posed instead of hypotheses as the area of enquiry has not been studied vigorously and there is a scarcity of current research on the area of enquiry (University viewed 22/09 2015). Furthermore, Bryman & Bell (2015) state that a hypothesis is an informed judgement, and this is not feasible for the Mae Moh environmental conflict case study.

5.1 Research questions

Even though the literature on the relationship between business and NGOs is abundant, the aspect of the effect of NGOs' actions in a third world country such as Thailand has not yet been explored. The focus of this study is to examine how EGAT responded to local resistance and gained acceptance from the public. The central research question of this thesis is: 'How did EGAT respond to local resistance arising from the environmental impact of the Mae Moh coal-fired electricity generating power station and how did this response demonstrate the unequal power relations of the key players in the dispute?'

The central research question of this thesis relates to the way in which EGAT, a state enterprise providing electricity in Thailand, responded to the environmental conflict that has emerged over the past decades as a response to the pollution in Mae Moh. The major original contribution of this thesis will be the implications for management theory and ECR. This research question is addressed through the case study of the Mae Moh electric power plant in rural Thailand, the responses to this environmental conflict by the power plant, the Thai government and the local community and their NGO representatives. This research question thus addresses the way that contemporary environmental conflict impacts on managerial decision-making in less developed countries and the way that unequal power relations shape the dynamic of environmental conflict. The key issues raised in this research question are related to sustainability and managerial decision-making, management and the TBL and management and long-term sustainability. Hence, the central issue of this thesis is not just practical but also theoretical.

The subsidiary research questions therefore include (1) What was the environmental impact of the EGAT power station on Mae Moh residents and how did they respond? (2) What key management changes and other responses did EGAT bring to Mae Moh in response to the environmental conflict? (3) In what way does the Mae Moh case study demonstrate the agency of local villagers and show how unequal power shaped EGAT's response to environmental conflict? (4) What are the implications of environmental conflict at Mae Moh for the literature on environmental conflict and state-owned enterprises in less developed nations?

5.2 Research objectives

The central issue of this thesis is practical in nature. In order to address the above questions, this research aims to examine how conflicts between businesses and CSOs in Thailand are responded to by management. It also aims to explore the mechanisms used to manage conflicts between state enterprises and the third sector. Another purpose includes how social responsibility initiatives could lessen conflicts between corporations and local communities.

In the next part of this chapter, the researcher's theoretical stance will be explained as well as the methodology chosen. Qualitative case study research is selected as it is regarded as appropriate; supporting reasons are provided later in this chapter.

Case study qualitative research was chosen to analyse the Mae Moh environmental conflict and EGAT's responses to local resistance. Eisenhardt and Graebner (2007) emphasise the ability of qualitative data in offering insight into complex social processes. Moreover, Gray (2009) adds that qualitative research gives better insights into the context than quantitative research does. In addition to exploring the Mae Moh case study in this research, other methods are used to attain answers to the research questions; these are historical analysis, observation, stakeholder analysis and semi-structured interviews.

5.3 Critical theory

In order for a researcher to determine whether quantitative or qualitative methods would be suitable for the research, he/she must establish a theoretical paradigm (Kuhn 1970). Guba and Lincoln (1994, p. 105) describe a paradigm as the 'basic belief system or worldview that guides the investigator'. Bryman (1989) proposes that different research methods are related to different epistemological stances. Hence, a theoretical paradigm is the indication of the foundation to conduct a scientific investigation (Krauss 2005) or 'a loose collection of

logically held together assumptions, concepts, and propositions that orientates thinking and research’ (Bogdan & Bilken 1982, p. 30).

These basic beliefs are positivism, post-positivism, critical theory, constructivism and realism (Lincoln & Guba 2000). These theoretical paradigms concern the following philosophical assumptions: ontology; epistemology and methodology as displayed in Table 14.

Table 14: Theoretical paradigms

Issue	Positivism	Postpositivism	Critical Theory et al.	Constructivism	Participatory
Ontology	Naïve realism- “real” reality but apprehendable	Critical realism- “real” reality but only imperfectly and probabilistically apprehendable	Historical realism- virtual reality shaped by social, political, cultural, economic, ethnic, and gender values crystallised over time	Relativism-local and specific constructed realities	Participative reality- subjective-objective reality, co-created by mind and given cosmos
Epistemology	Dualist/ objectionist; findings true	Modified dualist/objectionist; critical tradition/community; findings probably true	Transactional subjectivist; valued- mediated findings	Transactional subjectivist; created findings	Critical subjectivity in participatory transaction with cosmos; extended epistemology of experiential, propositional, and practical knowing; co-created findings
Methodology	Experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental/ manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	Dialogic/dialectic	Hermeneutic/ dialectic	Political participation in collaborative action inquiry; primacy of the practical; use of language grounded in shared experiential context.

Source: Lincoln and Guba (2000: 168)

Critical theory is an umbrella concept depicting a group of alternative paradigms that involve neo-Marxism, feminism, materialism and participatory research (Guba & Lincoln 1994).

Kincheloe and McLauren (2000) suggest determinism and functionalist propositions, acknowledging the influence of power to drive, and from awareness, generate ideology and frame language and discourse.

Critical theory can be dissected into three categories: poststructuralism, postmodernism and a combination of both (Guba & Lincoln 1994). Critical theory argues that reality was once comprehensible but was moulded into a set of apparati by a variety of social, political, cultural, economic, ethnic and gender variables (Guba & Lincoln 1994). The researcher and object are presumably connected, with the researcher’s values impacting upon the inquiry. Therefore, Guba and Lincoln (1994) describe that findings are ‘value-mediated’. Even though

both constructivism and critical theory are based on values (Guba & Lincoln 1994), critical theory does not place the importance of people's interpretation higher than the wider long-term circumstance (Neuman 2003).

In critical theory, the researcher suggests that, in order for amendment to take place, there needs to be a comprehension *a priori* of which transformations are entailed.

5.3.1 Critical postmodernism

This approach integrates critical theory and the postmodern school of thought. These structures create conflict with consequences for social movements and civil liberty. Contradictions are perceived as foundations of exploitation that surface when hegemonic viewpoints obscure contradictions, causing unawareness of tacit scheme of existent domination and subjugation and provide understanding to assist social actions involuntarily receptive of their own capacity in the recreation of capitalist inequalities. It attempts to alter and enhance liberation from undesirable domination systems (Gephart 2004).

Critical postmodernism employs textual, literary and deconstructionist means to analyse materials. In comparison, postmodernism's assumption also accepts that realities are value-laden and imply conflicts. Nonetheless, postmodernism emphasises signs and symbols and the beliefs that they are detached from the realities they portray. Thus, postmodernism implies concentration on written documents that generate and reveal structured inequalities symbolically (Gephart 2004).

Critical theory employs dialogic and dialectic methods to surpass taken-for-granted realities (Lincoln & Guba 2000). Additionally, it follows the historical realist supposition that the formation of reality occurred from the crystallisation of various factors over time. As a result, the critical approach discloses the activities of power relations which are concealed to the public. Moreover, it assumes that there are a number of perspectives of the world. Interpretative methodologies are utilised to discover diverse meanings possessed by parties in power-laden relationships (Gephart 2004).

Critical theory enables the uncovering and examination of different fabricated realities and the views of numerous players associated with the Mae Moh power plant case study. Further, it considers the wider scope of aspects such as historical variables and their potential relationship with, and forces on, the choices made (Pratt 2007). The research question deals

with managerial reactions to environmental conflict, which is influenced by contextual forces.

At the same time, positivism ignores the influence of power relations (Christians 2000). In addition, it implies that knowledge is context free and timeless (Neuman 2003). The purpose of positivism is to test hypotheses. Similarly, the purpose of post-positivism is to falsify rather than prove existing hypotheses (Guba & Lincoln 1994). Guba and Lincoln (1994) further state that post-positivism is often utilised for prediction more than control. Like positivism, post-positivism also perceives knowledge as value free (Pratt 2007).

In comparison with constructivism, criticalism favours the discovery and investigation of divergent constructed realities and perceptions of various players associated with EGAT's management's responses to environmental conflict. Moreover, critical theory supports the attention to the broader area and historical components and their possible association with, and impact upon, individual choices (Pratt 2007). This researcher's research questions require the broader context to be considered, along with EGAT's particular reactions to the environment, as it is a state enterprise.

5.4 Qualitative research

Different types of research enable us to perceive different occurrences and different intentions (Deetz 1996). The methodology selected relies upon what the research is attempting to accomplish instead of an obligation to a specific model (Cavaye 1996). Therefore, the methodology adopted must match the exact event of interest. Different events may demand the application of various methodologies. Researchers may choose suitable methodologies for their investigations by targeting the phenomenon under investigation (Falconer & Mackay 1999).

Qualitative research has the exclusive objective of simplifying the meaning creation process. The intricacy of meaning has a great deal to do with how meaning is assigned to various articles, people and life occurrences. Erikson (1963) divides meaning into two subclasses: shared meanings and unique meanings. Unique meanings deal with the creation process and the several different elements that form it. This is the unique achievement of qualitative research and data analysis. It is to determine the contributor to a person's (or groups') distinctive meaning (Krauss 2005).

This research is interested in answering the questions of how and what. Yin (1994) and Merriam (1990) state that qualitative research is appropriate to answer such questions. Additionally, Eisenhardt and Graebner (2007) add that qualitative data offers insight into complex and social processes, while Gray (2009) states that qualitative research can give better insights into the context than quantitative research. Even so, some may dispute that qualitative studies do not benefit from generalisation. Firestone (1993) claims that qualitative research is best for comprehending the processes and perceptions involving a situation.

Krauss (2005) argues that the core of the quantitative/qualitative 'debate' is philosophical rather than methodological. Some qualitative research begins from various epistemological assumptions from quantitative research. Moreover, some qualitative research produces numerous ontological assumptions regarding the world. Generally, qualitative research is founded on a relativistic, constructivist ontology that presumes that there is not an objective fact. However, there are many facts created by human beings that include various concerns. People established rules in the world that are understood to form purposes that are located in cognition, not in details, independent from us. Knowledge intruding into our cognitive system is protected, interpreted, developed and perhaps dismissed by the information existing in the structure. As a result, knowledge is peculiar and is calculatedly shaped (Lythcott & Duschl 1990).

As opposed to attempting to identify external causes or *laws* for behaviour as positivist and post-positivist paradigms do, qualitative research emphasises people's apprehensions and interpretations (Ticehurst & Veal 2000). In addition, this strategy is compatible with critical theory, which concentrates on an extension of individual thoughts within the context of an expansive arena (Berti 2014).

Gephart (2004) stresses that qualitative research documents arising from expansive, continuous research projects possess more tendencies to generate meaningful new wisdom since they recognise diverse questions and contain substantial data to analyse. Further, Gephart (2004) elaborates that qualitative research usually progresses the arena by offering individual, crucial, socially significant and theoretically essential contributions to academic dialogue and organisational growth.

Firestone (1993) also notes qualitative researches' emphasis on explaining the environment of the research and the characterisations of those contexts constructed by those in the

environment. This method specifically aligns with critical theory, that is, the paradigm that highlights a magnitude of separate understandings within the environment of a large terrain.

Since little is understood about the research topic (Thai state enterprise's responses to environmental conflict), qualitative methodologies are well suited for the purpose as they can reveal and offer insights into the underlying variables behind any phenomena where little is known (Strauss & Corbin 1990).

5.4.1 Case study qualitative research

In this section, the justification for choosing a case study approach is provided, as well as why the case study qualitative approach was considered appropriate for the Mae Moh power plant project.

This research relies on an in-depth explorative case study concerning the environmental conflict in Mae Moh and how management's decision-making in EGAT Mae Moh has been affected, including its structure and policies, by the NGO movement. This method of discovering answers to the principal research questions is preferable in this context since it allows the investigation of the interaction between the ideas, interests and stances of key players in the conflict resolution processes. The researcher considered the case study approach appropriate in a situation where the researcher had no control over the variables but had an interest in explaining and analysing the matters (Gray 2009). By using this method, various sources of data could be collected, such as interviews, archives and so on. In addition, Gray (2009) states that internal validity can be strengthened if a case study methodology is adopted by pattern matching, explanation creating and time-series analysis. In order to strengthen reliability, multiple replications of the same or similar cases can be used. According to Andersen (2005), the main strength of the case study strategy is that it can be used as a tool to develop theory through its substantial description, allowing researchers to make comparisons to create theoretical agreement.

A main characteristic of the case study is that it allows researchers to choose from a range of methods that are applicable to a designated and predetermined research topic (Pratt 2007). The methods will be explained later in the data collection and analysis strategy part of this thesis.

There are abundant arguments as to why a case study is the right strategy for this qualitative research. Firstly, it could facilitate the knowledge creation process. Stake (1994) suggests that

the qualitative method is especially suitable for functioning within a framework that complements a constructivist model, such as the critical theory to be used in this case study. Kincheloe and McLaren (2000) also mention the necessity of apprehending the use of related procedures within a critical theory foundation on a case by case basis.

Case study research pursues comprehensive depiction and clarification, and is appropriate for circumstances where it is impractical to remove the event factors from their situation (Merriam 1990; Yin 1994). Dunkerly (1988) affirms that case study utilisation would facilitate the explanation of circumstantial and historical background. Further, Yin (1991) advocates that a case study approach is highly appropriate where the research attempts to understand ‘how’ and ‘why’, especially with the emphasis on context.

A case study approach is preferable for studying current incidents and when the applicable action cannot be influenced (Yin 1994). Yin believes that the case study method is effective in illustrating justifications as to why an issue occurred and its circumstances.

Kincheloe and McLaren (2000) propose that case study strategies are beneficial in capturing processes over time in a critical theory paradigm, as Bryman (1989) explains that case study qualitative research has the strength of being capable of seizing procedures over time.

Next, Merriam (1990) explained that multiple case studies can enhance theory. Peshkin (1993) and Strauss & Corbin (1998) believe that the researcher may translate the data to establish a theory. Yin (1994) clarifies that the case study strategy is suitable if the research tries to construct a common description which is appropriate for each case, although there are differences in certain aspects.

Eisenhardt (1989) adds that case study strategies can assist in producing unique theories by analysing opposing perspectives. She explains that such theories are expected to be practically credible and provable because they are so closely linked to the proof (Eisenhardt 1989; Miles & Huberman 1994).

Further, Berti (2014) elaborates that the case study strategy encourages a detailed contextual analysis of a restricted amount of events and their relationships while placing an emphasis ‘on the dynamics present within a single setting’ (Eisenhardt 1989, p. 534).

Finally, Silverman (2010) comments that case studies are often preferred due to their ease of access. Yin (1993) explains that a case study is an empirical study that examines a modern

occurrence in its real-life situation, identifies a place where the borders between the situation and context are not obvious and relies on several sources of evidence.

Case studies are important in this research method. A case study 'is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, addresses a situation in which the boundaries between phenomenon and context are not clearly evident, and uses multiple sources of evidence' (Yin 1993, p. 59).

Yin (2009) stresses that case studies may provide a description of a real-life situation in a causal relationship, display certain compositions and display a condition when outputs are unclear. He adds that theoretical ideas are also significant in case study methodologies and regularly evolve during the preceding data collection because they lead the category of data gathered.

The ideas should be related events or traits and capabilities in an operational core and are influential in describing the sophisticated outcomes. Yin (2009, p. 52) trusts that they are 'eminently justifiable' in many situations. This includes critical theory testing, rare phenomena and common matters that are disclosed over time or demand observation and data gathering over time. Moreover, he proposes while there could be only one single case, more cases are more enlightening due to their potential to reproduce findings and test opposing views.

In addition, evidence can be derived from multiple sources, such as archival evidence or structured interviews, to conduct triangulation (Yin 2009). Moreover, Yin (2009), an acknowledged principal theorist in the case study strategy, highlights that case studies could be helpful for illustrating presupposed causal connections between factors that are considered too complex for surveys or experiments. In addition, case studies could explain reality in a causal sequence, display certain concepts and shed light on an event when outcomes are unclear.

In case study design, theoretical notions are essential. They may be 'stories' that present events as a formation, or depict characteristics and capabilities in a fundamental framework, but, at the same time, be influential in analysing complicated outcomes. In case study design, the researcher must apply creative wisdom and accurate translation to understand and demonstrate findings that are, and are not, observed. Additionally, evidence may be derived from various origins, for example archival evidences, documents, open or structured

interviews, different categories of observation and physical evidence (Yin 2009). If a case study approach is followed well, it should generate ‘engagement, excitement, and seduction’ (p. 190).

Those who wish to pursue a case study strategy are probably not attempting to generalise their findings, as compared to telling a story. Often, the story is filled with rich narrative features and may suggest understandings concerning complicated procedures impossible to obtain through a large survey (Suter 2012).

Case study readers frequently discover valuable concepts in the rich descriptions: they may investigate old queries with new approaches. Generally, researchers who adopt a case study approach discover their research *generalises* to the degree that others can *use* concepts ingrained in the descriptions in some other setting (Suter 2012).

The next section discusses the fieldwork for this research. The fieldwork is divided into two phases. The first trip is the scoping exercise where the researcher was introduced to potential informants as well as identified key informants. In the second phase, the researcher interviewed key informants indicated from the first trip. The informants are selected from opportunistic sampling. Bryman and Bell (2015) clarify that this type of sampling is based on opportunities to accumulate data from certain people who could contribute to the examined topic. In addition, McLeod (2014) elaborates that the main element of this type of sampling is convenience, and that it is a fast and simple approach in selecting participants.

5.4.1.1 Interviewing

Interviewing is one of the most significant sources of information in a case study. The researcher followed a consistent line of inquiry; however, the actual flow of questions was not rigid (Rubin & Rubin 1995). The interview questions from the first phase of data collection for management, villagers and NGO representatives are attached in Appendices 1–3, respectively. Interview guides for the different groups of interviewees in the second phase are attached in Appendices 4–6. Yin (2009) specifies that throughout the process of interviewing, the interviewer has two tasks: to follow their own guideline of questions; and to ask the questions without any biases.

In-depth interviews gives the researcher the chance to ask key participants about the facts and their opinions concerning the topic. If possible, the interviewer will ask the respondents to advise their own understanding of some events that can be used to generate further queries.

Therefore, the process of interviewing may take place over an increased period of time, not merely a single session. Furthermore, the participant could also introduce more respondents to the researcher (Yin 2009).

The aim of the first phase of interviewing was to carry out 15 individual interviews and collect information from informants from EGAT Mae Moh, civil society and the government. In this phase, the researcher interviewed 15 participants in total: five informants each from EGAT, government officials and the third sector. Next, in the second phase the researcher interviewed 21 interviewees from the third sector and five government officials (including EGAT employees). Initially, the plan was to interview 20 informants from the third sector. The reason that it was decided to interview a larger group of third-sector informants than in the first phase was because after transcribing their interviews, it was noticed that several interviewees were not able to comment on many questions, therefore, it was necessary to interview more local residents in the hope of gaining greater insight for the case study. The individual interviews took approximately 45 minutes per session. The interviews were held in safe locations suggested by interviewees and recorded if consent was obtained, otherwise field notes were taken.

In order to ensure that the interviewees were asked all the appropriate, important and relevant questions, all interviews were semi-structured, with guidelines to follow. Moreover, by adopting the semi-structured interview approach, the conversations were not fixed allowing the respondents to suggest interesting and critical information that could lead to new knowledge concerning the conflict and the relationship between EGAT and the local communities. The questions that the participants were asked followed Yin's (2009) guidelines for five levels of questions: Level 1 (questions about specific interviewees); Level 2 (questions about the case itself); Level 3 (questions concerning the pattern of findings across multiple cases); Level 4 (questions regarding the whole research) and Level 5 (questions about suggestions and consummation).

The interviews were considered essential due to the explanatory nature of the questions posed: the answers to these questions are not available from secondary sources. First, it was important to specify the organisations and the individuals involved with this environmental dispute in order to identify informative participants for the interviews. In addition, the principal purpose of interviewing is to gather various outlooks on the pollution situation and knowledge on the administrative means of resolving the disagreement. Key informants such

as NGO representatives, EGAT's management and some of the government officials involved (from Department of Environmental Quality Promotion, Ministry of Energy and PCD and so on) were interviewed regarding how conflicts between the NGOs and EGAT Mae Moh were resolved in the past and what changes were made after the conflict, including changes in structure and policies. In order to minimise any travel for the participants, all interviews were held in places convenient to where the subjects either lived or worked.

The interview data was supported by data collected from other sources to increase the findings' validity (Yin 2009). The interviews were recorded using recording devices. According to Yin (2009), an audio recorder is appropriate because it offers a more precise version of the interview than other means. Nonetheless, for the participants who did not grant permission to be recorded, their interview sessions were not recorded, and the researcher only took field notes.

All types of data collection tend to have complications. One of the main features of qualitative interviewing is that the direction and length of the session is quite open. As a result, the interviewer should be flexible if the interviews take longer than expected, for example, preparing extra recording tapes (David & Sutton 2004).

5.4.2 Research topics

In order to seek answers to the research questions, the researcher collected data on the following issues:

- The environmental impacts villagers experienced
- Other impacts of EGAT's establishment in Mae Moh
- Villagers' and NGOs' responses to environmental impacts
- The villagers' and NGOs' complaints and demands
- Major issues disputed between EGAT and the local residents
- The causes of the conflict
- EGAT's disclosure of information
- Who EGAT's oppositions were
- The importance EGAT gives to environmental conservation
- EGAT's attempts to react to the environmental impacts
- EGAT's responses to villagers' and NGOs' movements in response to the adverse impacts

- The Thai government's efforts in resolving the conflict
- Elements that shape EGAT's strategy in responding to the environmental impacts
- The implications of environmental conflict at Mae Moh for the literature on state-owned enterprise responses to environmental conflict in less developed nations
- Parties benefiting from third-sector movements
- What villagers and NGOs think of EGAT's attempts to be accepted
- The best approach to resolve the conflict
- Current situation of the conflict
- The Administrative Court's decisions and their consequences
- The results of the conflict for EGAT
- The communities' power in influencing EGAT's decision-making
- Possible conflict prevention

Questions regarding the environmental impacts local villagers faced, key issues disputed between EGAT and the third sector, the causes of the conflict, the villagers' and NGOs' responses, complaints, demands made to EGAT and EGAT's opponents and the third sector's responses to these impacts can offer answers to Subsidiary Research Question 1. Moreover, questions inquiring into the other impacts (beside environmental) that villagers encountered, EGAT's dedication to environmental conservation, and its responses to the environmental impacts, can give insight into answering Subsidiary Research Question 2. In addition, questions concerning the causes of the conflict, EGAT's disclosure of information, its opponents, its dedication to environmental conservation, its reactions towards the movements of the third sector, the Thai government's attempts in helping to resolve this dispute, factors influencing EGAT's responses to the adverse impacts, beneficiaries from the third sector's activities, the effectiveness of EGAT's strategy in response to the environmental impacts, the possible best approach in settling the conflict, the conflict's current status, the Administrative Court's verdict and consequences, the outcomes of the conflict for EGAT, the communities' influence on EGAT's decision-making and possible prevention of conflict, can lead to answers to Subsidiary Research Question 3. Questions relating to EGAT's commitment to environmental conservation, its reactions to the environmental impacts and the villagers' and NGOs' responses to them, the Thai government's efforts in resolving the conflict, factors that shaped EGAT's approach in responding to the environmental impacts, beneficiaries from the third sector's activities, villagers' and NGOs' opinions of EGAT's reactions to the impacts, the best resolution of the conflict, the conflict's current status, the Administrative Court's

verdict and consequences, the outcomes of the conflict for EGAT, the communities' abilities in influencing EGAT's decision-making, and possible prevention of conflict, assisted the researcher in creating answers for Subsidiary Research Question 4. Finally, all the questions, along with the framework of political economy, facilitated the researcher in answering the key research question.

5.4.2.1 Data collection

Data collected includes results from the interviews of key informants representing the Mah Moh power plant, health and environmental officers, experts, as well as the local residents of Mae Moh in this dispute. Archive data from EGAT, media, technical assessment reports, policy documents, laws and regulations concerning businesses, environment and health, as well as other secondary data was also collected. To achieve this, field trips to Thailand and the conflict site were required.

5.4.2.2 Textual data

The analysis of documents gives researchers the opportunity to review the data that otherwise would not be accessed. Private and government entities keep records of routines and of special events. These records sometimes are available for the public; for example, via archives or publication, although it is possible some have been destroyed or not disclosed. Additionally, the media produces massive collections of textual data, which normally are open to public access. Textual data collection helped the researcher avoid practical and ethical difficulties associating with interviewing and field research. However, textual data collection presents inherent difficulties of distance and detachment (David & Sutton 2004).

5.4.2.3 Transcription

According to David (2004), the approximate amount of time it usually takes to transcribe an interview is three to six times the duration of the recorded interview. All interviews were transcribed and translated by the researcher. David and Sutton (2004) indicate that the hours of listening needed to transcribe a tape are often the best way of acquiring a fine-grained knowledge of the data. Personal identities were kept separately from the data collected and stored in a separate format that was not disclosed to others (David & Sutton 2004). Both interview recordings and transcribed data are kept in a locked cabinet in a research lab in Australia, where PIN access is needed, while the informants and all parties involved reside in Thailand.

In-depth interviews reveal personal details of those from whom they are collected. Therefore, ethical implications were considered and the only others who might have access to the data were limited to the supervisory panel and the researcher.

As the research questions have been identified, the researcher finds that a qualitative methodology is suitable for examining the answers to the research questions and the process of data analysis. Lastly, this section ends with ethical considerations, in accordance with the selected methodology, and possible implications of the field work.

5.4.3 Research instruments

The research instruments used were a tape recorder, interview guides, information sheets, participant information statements and consent forms. These tools assist in ensuring that the questions asked are appropriate as well as minimising the risks for both interviewer and interviewees. The consent form will assure non-professional participants that their identities will not be disclosed. Additionally, the information presented in publications will not provide any identifying details of them. The information sheet provides the informants with basic information on the research such as the aim of thesis and their roles in participating. It also discusses their possible concerns and provides contact information on the supervisory panel and research ethics officers in case the interviewees have further enquiries or concerns.

After establishing the research questions and appropriate methodology for the Mae Moh case study, one more topic that needs to be addressed is ethical considerations. This part of the thesis will explain how certain risks involving this research are acknowledged and how they could be minimised.

5.4.4 Ethical considerations

This research involves human participants and sensitive matters that some participants might feel concerned about discussing with an outsider. In response, this study is in accordance with University of Technology Sydney's guidelines of ethical considerations. Furthermore, in order to protect human participants, this research was evaluated by the Human Research Ethics Committee (HREC) and the Human Research Ethics Advisory (HREA). As a result, the researcher was granted ethics approval. The approval number is UTS HREC REF No. 2012363A.

5.4.5 Funding

The researcher did not receive any funding for this study. Hence there is no potential conflict of interest, neither are there any constraints due to the issue of funding arrangements.

5.4.6 Participants

5.4.6.1 Recruitment

Research participants were recruited through different means: emails, organisations, telephone and personal contacts. In the first phase, the researcher interviewed 15 informants in total. Within the group of 15 informants, five were from the civil society, five were from EGAT Mae Moh and five were Thai government officials from the Department of Environmental Quality Promotion, Office of Energy Regulatory Commission, Ministry of Energy and Pollution Control Department. Five interviewees were recruited from each party in order to give the same weight to each side. Even though the Office of Energy Regulatory Commission is an independent agency, the research counts it as being in the public sector as it is responsible for supervising regulations concerning electricity systems.

In the second phase, the researcher interviewed 31 participants consisting of 21 from the civil society, six government officials and four from EGAT (three from EGAT Mae Moh and one from the operation's metropolitan unit). The reason for recruiting more informants from the civil society in the second phase was that, in the first phase, the villagers tended not to have much to say and had problems answering questions, for unknown reasons. Therefore, to enhance data gathering, 31 interviewees were interviewed for the second phase.

For both phases, the basic logic behind the chosen number of research participants was one of supporting qualitative research as opposed to quantitative research, that is, it focuses on the depth of the study rather than generalisation (David & Sutton 2004). The essential facet of this research is content: to explore social and political relations, and why and how decision-making inside EGAT Mae Moh is influenced by local resistance. Qualitative research can give better insights into context than the quantitative research (Gray 2009). Therefore, the number selected portrays key components that the researcher aims to study. For this research, the context is considered more important than the size of the sample group. The number of interviewees chosen, nevertheless, was designed to be sufficient to assure credible results.

5.4.7 Requirements

Individual interviews took approximately an hour per session. The interviewer should hold these interviews in a safe place. The sensitive nature of the subject matter suggests that these interviews should not be held in public spaces.

5.4.8 Travel & compensation

In the first trip to Thailand, none of the participants were required to travel to be interviewed. The interviews were carried out in their offices or in a school where the People's Forum was held, and they were already present for that forum. However, in the second trip, some interviewees had to travel for the interview, and in this case they were compensated with an appropriate amount of money.

5.4.9 Pre-existing relationships

Some of the informants had pre-existing relationships with the researcher. These pre-existing relationships may have caused some participants to feel pressured to take part in the research and could also have influenced some participants not to give complete, honest answers. The researcher made sure that their decision to participate in this study was purely voluntary. Moreover, if there was any hint of compulsion, the interview would be stopped, but this did not emerge as an issue. It was explained clearly to the participants that their inputs would be anonymous and kept separately from any form of identification (Gray 2009).

5.4.10 Risks

Anonymity and consent means that the risk to informants is minimal. Nonetheless, the participants might fear that the information would not be confidential. It is the researcher's responsibility to ensure that it is a priority to keep the information confidential. Finally, the informants that are EGAT's employees or government officials may be scared of the risk of losing their employment. In order to circumvent this concern, I indicated I would not to reveal any information that would help identify the informants. Further, I would not share any information received with EGAT, or the government. The system used kept the information from interviews separate from any identifying information of the informants from the recordings of their interviews. The related information was assigned a number instead of the participant's name.

Therefore, the potential risk is negligible because none of the informants is identified by name or position and information they provide is confidential and not reported to other

informants. Moreover, the potential risk was limited to inconvenience, though I minimised this by arranging interviews at a place and time convenient for the informant.

5.4.11 Consent and special issues

In order to minimise risk, the researcher decided to use informed consent. Participants had full rights to withdraw from the project at any stage without any consequences. The consent form also informed the interviewees that they could ask any question or mention anything prior making the decision to get involved in this research.

One special issue of this research is that it was conducted in Thai. However, a translator was not required as the researcher has a thorough command of the Thai language having lived in Thailand up until the age of 21 and been educated in Thai schools and a Thai university. The researcher conducted the interviews in Thai and translated the consent form, approval letter and information sheet into Thai. Finally, the researcher transcribed the interviews in Thai and translated them into English.

The risk from participating in this research was classified as minimal because the researcher ensured that the information about the participants remains confidential. Participants did not need to state their names or answer any questions they did not wish to. Most importantly, the potential of the researcher to experience any harm was considered unlikely. If the researcher noticed that there was a risk, the researcher would stop the data collection until such a time that action was taken to prevent it, or that it was deemed safe for the researcher to continue the data collection.

5.4.12 Involvement of another institution or organisation or community group

This research involved representatives from local non-governmental organisations and local communities. These representatives were merely involved as participants, no other roles were included.

The next section of thesis displays primary data from the research fieldwork.

6 Primary data

Central to any analysis of the environmental conflict at Mae Moh is the need to understand, as a point of departure, that the major players in the conflict—the villagers and their CSOs, EGAT and the Thai government and legal institutions and processes—will have very different impressions of what happened and what should happen as a result of the power plant and its impact. The essence of environmental conflict is that it involves a conflict about the nature of the environmental impact at a particular site, and about the adequacy of the response to this impact. Opposing sides will give conflicting analyses at all stages of the environmental conflict. The fieldwork (data collected) for this thesis was designed to give ‘voice’, in particular to the villagers and their CSOs, and to EGAT officials. This is the only way to demonstrate how the unequal power relationship of EGAT and the villagers played out at Mae Moh. EGAT is not only an enterprise that produces electricity for profit but it also is associated with the public sector as a state enterprise. Therefore, it has the ability to persuade the government to provide it assistance in order for EGAT to gain acceptance in Mae Moh.

The fieldwork data (data collected) helps to explain the key aspects that are central to the research questions addressed by this thesis: the environmental impacts of the EGAT power station in Mae Moh according to the villagers, EGAT and the Thai government (Subsidiary Research Question 1); the responses to these environmental impacts from local villagers (Subsidiary Research Question 1); the changes introduced by EGAT in response to the environmental impact and conflict (Subsidiary Research Question 2); and the broader theoretical implications that emerge out of the case of the Mae Moh power plant of how state-owned enterprises respond to environmental conflict and local resistance in developing nations (Subsidiary Research Questions 3 and 4). Finally, these points together assist in answering the key research questions.

This chapter addresses, in particular, three major issues arising from this research’s fieldwork: the environmental impacts of the EGAT power station on Mae Moh; the local community assessment of these impacts, and their demands and responses, including the way that NGOs represent the villagers in this process; and EGAT’s subsequent responses to these demands, including the development of their CSR plans. In the final chapter, the broader theoretical implications that emerge out of the case of the Mae Moh power plant for management theory in relation to environmental conflict and local resistance in developing nations will be addressed.

The first major theme in the chapter demonstrates the types of pollution resulting from EGAT's electricity generation; namely, sulphur dioxide, dust, water sources, noise, vibration, smoke, deforestation and odour, and their effects on the local residents' health, properties, livestock and plants. As a consequence, these types of pollution led the villagers to develop health concerns. Next, the second key theme in the chapter examines the demands villagers made in response to the impacts of EGAT's operation in Mae Moh. The demands vary from those regarding the environment, to medical assistance, relocation, monetary compensation, assistance, employment and welfare. Here, an important distinction is made between the peaceful and non-peaceful methods of villager responses to the environmental impacts of the EGAT power station. Lastly, the chapter outlines EGAT's reaction to the responses from villagers and their attempts to gain acceptance of these responses from the local communities. Central to EGAT's efforts in this regard are: establishing trust and understanding with local communities, introducing extensive funding or compensation schemes, introducing resettlement programmes for some villagers, and introducing environmental policy changes within the management of EGAT itself. In addition, this section also discusses the social and economic changes introduced as outcomes of EGAT's establishment at Mae Moh.

Most of the material from this chapter is derived from the fieldwork in the Mae Moh region of Thailand. The voices of informants from the key players in the conflict are recounted in order to provide their subjective takes on the conflict, and EGAT's response to it. The chapter reveals opinions on the environmental impacts EGAT is believed to have created in Mae Moh. Moreover, it reviews villagers' responses to the changes introduced to Mae Moh, and EGAT's responses to villagers' reactions to their attempts to be accepted in Mae Moh. The data presented demonstrates that EGAT and the villagers have a number of opposing opinions on the environmental impacts of the power plant, on the appropriate actions to be taken, and on the adequacy of EGAT's response. At play here are the unequal power relations at the heart of political ecology theory explored in the theory chapter, and in the review of Weapons of the Weak on environment conflict. By studying the different responses of villagers, both the agency of the villagers in fighting the environmental impact, and such a powerful body such as EGAT, and the multi-vocal nature of the villagers can be seen in a way that is consistent with the regulation theory outlined in the theory chapter. In this chapter the development of the environmental conflict at Mae Moh and how it changes over time is discussed and it can be seen, albeit with the passage of time, that EGAT and the villagers have come closer to a negotiated agreement but that not all villagers agree. This disagreement

is, in part, determined by the extent to which villagers share in the largesse or compensation provided by EGAT. Here, we see unequal relations of power within the villagers themselves.

6.1 Pollution

The pollution from EGAT's operation in Mae Moh harms not only human well-being and health but also affects their farm animals, crops and land holdings. Many types of pollution originate from EGAT Mae Moh, including sulphur dioxide, water pollution, noise, dust, odour, vibration and smoke. The various types of pollution function as the case study's environmental-contingent factors since they function to promote or restrict the acceptance of environmental strategies. This pollution drives the change of environmental strategies in the organisational field. Therefore, they are the environmental-contingent factors. The degradation of the environment will be investigated in this section of the thesis.

According to Clegg (1989) organisational players are capable of shaping the regulatory framework. In this case study, it should be easier for EGAT to shape the regulatory framework, and to influence the law overseeing changes at Mae Moh, as it is a state enterprise. Sitthipongpanich (2004) agrees with this perception by indicating that government is fundamental in the development of industrialisation legislation, and that relationships with government can provide a business with advantages and security. Further, McCarthy and Wolfson (1996) suggest that the elites of developing countries usually are substantial stakeholders in subsidiary financing. Finally, Phipatseritham and Yoshihara (1983) argue that businesses rely on government officials to pass legislation or to acquire approval for proposals. Consequently, it is possible to determine that EGAT is, to a degree, in control of the legal standards for pollution.

6.1.1 Sulphur dioxide

The first type of pollution to be mentioned is sulphur dioxide. Sulphur dioxide not only damages the villagers' health but also their crops. Sulphur dioxide was the cause of the environmental crises connected to EGAT Mae Moh in 1992 and 1998. EGAT installed FGD systems to decrease the emission of sulphur dioxide from the power plant as a result of these crises. It has been acknowledged by the Supreme Administrative Court judge that EGAT did not succeed in eliminating sulphur dioxide (see the next chapter). The function of the FGD systems will be elaborated later in this chapter.

M2.4, a local politician confirms that EGAT did not have systems to control sulphur dioxide:

From producing electricity from the beginning they [EGAT's contractor] were opening the ground's surface [open-pit mining]. They [EGAT] didn't have systems to control sulphur dioxide or odour or noises. In 1992 once and in 1998 once. There was a leak in Mae Moh power plant which caused sulphur dioxide to come out and led to acid rain and harmed many things; namely, life, plants, people became sick, plants died, stopped growing. The serious impact was respiratory disease. It is continuous in the people.

N27.1, a government official from the PCD points out that villagers were concerned about their health because EGAT did not have FGD systems to control sulphur dioxide emission:

EGAT did not install FGD systems at first, not in the first three units, that's 125 MW in total. Not in 4–7 either. Including the landscape and winter, poor circulation of air. The plant was expelling high volumes of sulphur dioxide and the pollution occurred. The villagers worried about their health.

Similar views were expressed by three other informants. In addition, sulphur dioxide reportedly caused a burning sensation. **M3.7**, a Maekieng villager, explains: 'We used to feel the burn in our noses before they installed FGD systems. After the installation, then better.'

M3.9, a Wiengsawan villager elaborates that the burning sensation occurs to the eyes too:

Yes, and eyes too in winter. People that suffer heavily would be Sob Prad residents. Very little impact here. If the wind doesn't blow we wouldn't smell it. No other impacts now. Only initially.

M2.6, a Sob Prad villager, explains that a villager lost his life from being exposed to sulphur dioxide:

My father was very sick when sulphur dioxide was leaked during 1992. He passed away in 1996. He had pulmonary emphysema but he didn't smoke ... However, some people are really affected i.e., my father suffered from the impact of sulphur dioxide. It was bad in 1992. His condition worsened then, he couldn't breathe when it was cold. It was a torture. We went to see the doctors in Bangkok at the Central Chest Institute of Thailand. We came back but continued the treatment there. We could only prolong his life for two years. He passed away in 1996.

Two informants shared similar sentiments. Moreover, it was mentioned earlier by **M2.4** that sulphur dioxide led to acid rain, which damages not only villagers' health but their crops as well.

M2.6 reveals further that sulphur dioxide turns their vegetables yellow and that the villagers need to buy vegetables because of this:

One more thing, in the past, in our community, economic plants such as kung that we said we couldn't continue growing. We can no longer pick vegetables, wash and cook. The vegetables turned out yellow when sulphur dioxide leaked. We couldn't grow them ourselves and needed to buy.

N20 illustrates that sulphur dioxide causes damage to crops. 'The crops were affected by sulphur dioxide.'

M2.4 is concerned that sulphur dioxide is not eliminated but spread a further distance from the power plant. ‘Sulphur dioxide is not spread in areas next to the power plant but it will be spread somewhere 30, 40 kilometres further. These areas get the impacts.’

From secondary sources, sulphur dioxide is the type of pollution with the richest data relating to it.

It has been acknowledged by a Supreme Administrative Court judge that EGAT did not succeed in eliminating sulphur dioxide. A news article (Wipatayotin 2014) states:

He [Judge Sumeth Deuisres] said the EGAT had failed to curb sulphur dioxide emissions as reports showed only two of eight sulphur dioxide filters at the power plant were working in 2008, resulting in excessive amounts of the toxic substance being released into the air and affecting peoples’ health ... The judge said studies confirmed the plant polluted the area, so the operator should be responsible and must compensate those affected.

A news article (Matichon 2013) published Mr Mitree Thungploy’s statement and request to EGAT which shows that his father suffered from sulphur dioxide’s impacts:

His father, Mr Thum Thungploy, had been suffering for a long time from the impacts of sulphur dioxide from EGAT. Although he tried to exercise to be healthy ... The family would like to beg EGAT to take care of us and other patients that are waiting to be treated more. We also would like the Supreme Administrative Court to speed up the progress of the case and to order EGAT to pay compensation. If they are paid compensation, it would be spent on treatment because he and his mother suffer from the impacts of sulphur dioxide too.

The Administrative Court (*Decided case 60-77/2552 and 68/2548 2009*) stated that EGAT must compensate villagers for the health impacts of sulphur dioxide as it exceeded the safe level:

Lieutenant Commander Doctor Pornperm Prommas testified that if one is exposed to sulphur dioxide for a long time, it could affect his/her health negatively. Even though it is not related to the diseases of the claimants, it must be considered that the claimants of 19 cases are affected by sulphur dioxide. Consequently, the defendant has to compensate the claimants according to Section 96 of the Enhancement and Protection Environment Act B.E. 2535 and it is a violation of the defendant.

In the lawsuit, the villagers wanted EGAT to stop using lignite to produce electricity until it could completely prevent dust and sulphur dioxide from spreading (*Decided case 60-77/2552 and 68/2548 2009*):

For the defendant to stop generating electricity using lignite fuel in its plant in Mae Moh tambon Mae Moh district, Lampang until EGAT can completely prevent dust and sulphur dioxide from spreading.

According to a court document (*Decided case 60-77/2552 and 68/2548 2009*), sulphur dioxide could not spread in winter:

In the beginning of winter, the air pressure is high, low airflow, the sulphur dioxide content does not rise above which result in higher level of sulphur dioxide than standard specified at times but this only happens in short periods of time. No more than 2–3 hours. Natural situation is regarded as inevitable.

This section has revealed that sulphur dioxide can be harmful to those living close to the EGAT site in Lampang and their crops and livestock. Some villagers do not believe that sulphur dioxide is eliminated by pollution controls but spread far from the power plant. As a result, they perceive sulphur dioxide as problematic in another domain.

The next component of this chapter will discuss dust and its adverse impacts.

6.1.2 Dust

Villagers describe the pollution as much better managed now compared to in the past. Nonetheless, dust is regarded as another main issue for which EGAT is responsible. The dust matter will be investigated in this section. First, **M3.5**, a Chanlongrat villager states: ‘Dust, severe. In the past, measure to prevent is not as serious as now. If houses don’t have ceilings, we will wake up with dry throats.’ Next, **M3.9** explains his/her experience with dust in Mae Moh:

Adverse impacts when they do surface mining. It affected me because I lived in Moo1 Huayped. We experienced dust problem ... Bad because we lived close to [generating] Plant 12, 13. My oldest child still has respiratory problem. He has allergies and blood defect. But we never complained, we think we moved here and the father works for EGAT. For tables, we could draw on the table. If we leave the window opened for a day. It’s been better since EGAT installed FGD and started spraying water. We were suffering from the dust for 5–6 years.

M3.3, a village leader insists that the dust issue still continues in Mae Moh. ‘Yes, there are still noises, dust and water pollution because there are different elements.’ **N27.1** suggests that dust is a remaining issue caused by the mine. ‘On the environment side of things, it is quite completed. But the problem later is still being dealt with continuously. Dust from surface mining.’ Ten interviewees expressed similar opinions to this statement.

D5, an Occupational Health Patient Rights Network member indicates that dust was one of the reasons his/her group sued EGAT:

Every day there was blasting, there was dust, odour, noise and vibration disturbing me. At the time, I was a student, I felt that EGAT was taking my resources and creating annoyance for me. Therefore, I should be able to speak my mind. That’s the idea that made us decide to demand the Administrative Court to shut down the mine. The Administrative Court ruled that EGAT had to shut it down.

D6.1, a village leader argued that the dust it is created by local residents rather than EGAT’s production. ‘Dust, smoke, being surrounded by forest: bush fire. EGAT should be able to

coordinate with Royal Forest Department. The Royal Forest Department tells the villagers to look after it themselves.’

In this last statement, an informant mentioned dust along with other types of pollution. A news article (Decha 2005) in which Ms. Maliwan Nakwiroj, president of the Occupational Health Patient Rights Network, was interviewed stated that the soil, water, forests, dust, odour, vibration, health, lives and traditional lifestyles are impacted by electricity production using lignite:

As a representative of the Occupational Health Patient Rights Network, I would like to advise Thai society that lignite-fuelled electricity production has impacts on the environment, including soil, water, forests, dust, odour, vibration, health, lives and traditional lifestyles that faded away and had to be changed ... Coal mining creates pollution from digging and transportation, for example, dust from explosions, odour from coal burning and noises from machines. Vibration goes on all day, all night from explosion to attain coal.

A news article (Decha 2005) indicated, further, that dust was caused by coal-fuelled electricity production, specifically from the mine:

The digging and transportation of coal created environmental impacts from the function of big machines, for example dust from opening the ground surface/odour from the burning of coal/noises from the machines that transport coal all day all night/vibration from explosions to open the ground surface.

6.1.3 Water sources

Villagers believe that EGAT is responsible for water pollution in two ways: cutting natural water sources and contributing to the odour in water tanks. This made the villagers change their way of life as they can no longer live off natural water sources. **M3.3** illustrates how EGAT has caused water pollution:

Even though EGAT filters or measures but there is still residue mixed in the water. In my village, we suffer from water pollution. It's a dish that the water from the plant flows into. It's still a problem today. The water in the tank becomes rotten and smells. EGAT is trying to solve but it takes very long. 20–40–50 years.

EGAT is regarded as having demolished the natural water sources that the villagers had previously relied on. **M3.6**, a Maekieng villager, says:

Before we used natural water sources, streams. When they opened the mine, natural water sources disappeared. The beginning of water sources is disconnected. When we use water, it must be through EGAT's tank. Nowadays, we use water that EGAT gives us.

M3.3 clarifies that in the past villagers could rely on natural water sources but due to water pollution, that is no longer feasible:

Old people, back in the day, used to eat and live with water. We could use it to make a living. After a long time, it's built up, mud and so on. And it doesn't get treated. Water in the tank became rotten. Dr Junkasem's wife of the royal project conducted a research. Fish can be eaten but we have to clean them the best you can. If we eat fish it's like eating mud since then villagers are too scared to eat local fish. Our water smells rotten now.

In addition, **M3.3** discloses that villagers now have to rely on EGAT to provide water, and they now have to pay for water, due to their relocation and the loss of a natural water supply. This has led to a change in their traditional lifestyle:

We used to use natural water but not anymore. EGAT provides water for us to use but we have to buy if we exceed the limit. Now there are more people. We submitted the document, asking EGAT to raise the limit. There were only 100 households, now we have 200. The impact is water in agriculture. We don't have crops to consume, we are in need. We have to buy everything.

For the tank, when the old village leader was in position, I don't know if they coordinated but when I became village leader in 2002, I consulted with the villagers and started to proceed. EGAT took the weed out but not the mud ... There was also a drastic change in lifestyle. From being used to making a living in the dish, we had everything. Prawns, shellfish, crabs, fish. But now we can't find them from here. Now we can't wash clothes in the river. We must buy water from Maejang dam. We must buy everything. Water price is now more expensive too.

According to this, it can be noticed that EGAT did not take actions against water pollution until approached by the village leader. Three informants shared the same experience that the villagers' lifestyles had to change.

D7.4, an EGAT staff member, specified that water pollution is one of the problems that need to be solved. 'The concerns that need to be dealt with are dust, noise and water pollution.' Another informant concedes that water pollution is still a problem.

Another problem associated with water pollution is odour. Unfortunately, a significant budget is necessary to remove the odour from the tank. **M3.3** mentions:

There are many meetings regarding the budget. The tank issue requires a big budget. Nowadays the cause of smell is under water. Municipality, Members of the House of Representatives and others had meetings. Dr Kasem Junkaew established that the best way is to dig the mud out using the pulley so the water is clean. And we can return to our traditional lifestyle. Now there is water in the tank but it couldn't be used. We are too scared to have fish from there. When someone brings fish, we ask where the fish is from and they say from there. No one would buy.

This statement implies that local fish are not edible anymore due to water pollution.

D7.4 declares that the water is much less polluted now in Mae Moh but the explosions still occur. 'Much better than before. Air quality, water pollution, smell and explosion. Some of them haven't been fixed completely, such as water explosion.' **D7.4** further states, 'They (EGAT) do not care if they pollute the water.' **D7.4** continues, 'Nothing can be eliminated

100 per cent, maybe 99.5 per cent. It also depends on which emission we are looking at. If water, we (EGAT) let go. Dust and sulphur dioxide both leave the exhaust but they are lower than the standards.’ This declaration explains that certain types of pollution are not taken care of because they are already lower than standards specify.

A secondary source also gives insight into the water pollution issue. Ms. Maliwan Nakwiroj, president of the Occupational Health Patient Rights Network, was interviewed. She reaffirmed that water pollution is caused by coal-fuelled electricity production (Decha 2005):

The scariest impact is that underground water and surface water are tainted. For example, sulphate, manganese, copper and arsenious acid that are created from releasing water from the mine to public water streams.

Nonetheless, the following quotes give justifications as to why EGAT follow a condition in the patent permit for water management. First, EGAT explained that the water system in its patent permit condition was no longer necessary (*Decided case 44-59/2552 2009*):

Which is rehabilitated by growing trees and plants to cover the soil which is predicted not to cause the diffusion of dust from the pile of soil. Thus, it can be noticed that the water curtain is no longer necessary.

Second, the Administrative Court stated that EGAT did not follow a condition of its patent permit because it did not request any changes to the patent permit (*Decided case 44-59/2552 2009*):

The actions as mentioned of EGAT therefore is the actions that are different from the prevention and improvement environmental impacts measures and the prevention and improvement environmental impacts measures set by [the] Office of Natural Resources and Environmental Policy and Planning where it does not appear that EGAT requested to have the conditions changed at all which is a violation of Provision 57 of the Act of Minerals B.E. 2510.

The discussion of water pollution concludes that EGAT pollutes the water and has disconnected water sources in Mae Moh. This led the villagers to make significant adjustments in their lifestyle, from not being able to eat local produce to having to earn money to buy commodities. Moreover, it was believed that EGAT did not care if it polluted water. EGAT considers everything as acceptable as long as the pollution is under the legal standards.

The next part of this chapter will explore noise pollution.

6.1.4 Noise

Noise pollution does not affect the villagers as much as the problems with water pollution. Nevertheless, it is still an ongoing issue and creates annoyance for villagers.

D5 comments that noise pollution is an everyday struggle. ‘Every day there was blasting, there was dust, odour, noise and vibration disturbing me.’ **M3.6**, president of the Municipal Parliament, revealed that houses close to the site are still affected from noise pollution:

My house is close. I experience vibration, dust, noises of machines operating at night. The unit had meetings with us. We notified, they became careful periodically... Mostly, it is the noises that come from machines that operate at night. They’re very loud. If we are sleeping, and we wake up, we can’t go back to sleep. Sometimes, they send signals using horns. It’s irritating. We can’t sleep. I asked EGAT before, that why don’t they use light instead. Sometimes, I complain, then it would get better for a while, then back to normal.

Eight other informants also accept that people living close to the site experience noise pollution.

Nevertheless, **M3.4**, a Hanghung villager, states that the noise is tolerable. ‘Noise and odour are bearable.’ **D6.1**, a village leader, suggests that EGAT should stop its production after midnight to diminish the noise level: ‘EGAT should decrease the noises and stop after midnight.’ **M2.4** observes that EGAT did not have a system for controlling noise:

From producing electricity from the beginning they [EGAT’s contractor] were opening the ground’s surface. They didn’t have systems to control sulphur dioxide or odour or noises ... They tried solving the problem using engineers. However, today the problem that the community is facing and being heavily affected by those who reside close to where the digging and soil dumping happens. The site is open. Nothing can be controlled even there are whatever methods, this includes odour, noises.

In this explanation, **M2.4** also mentions that people living close to the site suffer severely from the impacts of EGAT’s activities and that noise cannot be controlled.

Overall it is clear that the villager informants agree that noise is an ongoing problem in Mae Moh. The noise levels are loud enough to wake them up and it was reported that EGAT carried out these activities during the night. EGAT informants, not surprisingly, took a different view. **D7.3**, an EGAT staff member, stated that there will always be new types of pollution waiting for EGAT.

Never-ending. After noises are gone, vibration starts. They want to resettle because their friends are gone ... New problems and other types of pollution: noise and vibration. They did not use to complain about noises. Old problems are gone, new ones emerge.

From this proclamation, it can be understood that EGAT's view is that the villagers opportunistically raise issues about different types of pollution to demand resettlement.

6.1.5 Vibration

The negative effects of vibration do not impact upon the locals' crops and food sources, but the vibration has damaged the homes of numerous families, according to the informants. Like noise pollution, vibration from the Mae Moh plant is a daily event that ignites opposition from the villagers and it is still recognised as a current issue.

D5 and another informant recall that villagers sensed vibration daily. 'Every day there was blasting, there was dust, odour, noise and vibration disturbing me.' Moreover, **M4.1**, an EGAT staff member, discloses that the villages of Baan Dong, Hang Hung and Sob Prad experience vibration. 'Baan Dong, Sob Prad and Hang Hung suffered from the impacts of vibration. Houses were damaged.' Two interviewees agree with this proclamation.

D4 also argued that vibration caused cracks in houses in Huay King. 'Vibration, broken houses in Huay King.' **D7.4** notes that there is conflict relating to vibration. 'Now, there is some conflict in regards to dust, noise, vibration, explosion in communities near the power plant. Not sulphur dioxide.'

M3.4, a Hanghung villager, lists vibration as an unresolved issue:

There is also dust, noise and vibration. Vibration is bad. Houses have cracks. I had to fix twice last year ... If vibration is bad, we notify EGAT. EGAT will order its contracted company to tone it down. It only gets better periodically. When we are unaware, it gets worse.

Another informant shares a similar point of view. Despite the fact that EGAT would notify its contractor that the operation is creating annoyance for the local residents, nevertheless, the vibration would continue.

However, not all villagers agree about the severity of the environmental impact of the Mae Moh plant. For example, **D7.2** feels that some pollution complaints could be an excuse to request resettlement:

Other issues: environmental impacts, complaints from villagers, dust, noise, vibration, migration, separation. One wants to move, the other doesn't. Those who migrated received money to start new occupations. Some don't wish to move. Not sure if that's an excuse.

Another informant is in agreement with **D7.2**.

Overall many of the villager interviewees confirmed that vibration was still a problem. They explained that vibration caused damage in Baan Dong, Hang Hung and Sob Prad villages. In their experience the vibration and noise pollution impact would be lessened temporarily if they (the villagers) made complaints. In this sense, their opposition was worthwhile, at least in the short term. On the other hand, not all villagers agreed about the severity of the vibration and noise pollution impact and the legitimacy of those villagers who took actions to mobilise against EGAT.

6.1.6 Odour

Odour originates from EGAT's mine and water tanks. It is an outcome of explosions and water pollution. It was still a problem during winter even after villagers had resettled further away. This section will explore this type of pollution.

D5 illustrates that before relocation, odour was something villagers faced every day. 'Every day there was blasting, there was dust, odour, noise and vibration disturbing me.' **D7.1**, an EGAT staff member, named odour as a current issue: 'Noise, odour and dust.' **M3.11**, a Mohluang villager, concedes that odour is still an issue in winter after resettlement:

I moved very far. Eight kilometres away from the mine. I only sense the odour in winter when air pressure is low. Even in my new house. Not a lot like the old house. I didn't feel my nose burning or anything.

M2.4 notified the researcher that, in the past, EGAT did not have a system to control odour. 'From producing electricity from the beginning they [EGAT's contractor] were opening the ground's surface. They didn't have systems to control sulphur dioxide or odour or noises.' It is important to note that the odour comes from the burning of hydrocarbons in the lignite, as does the sulphur dioxide. **M2.4** then claims that odour cannot be controlled:

They tried solving the problem using engineers. However, today the problem that the communities are facing and being heavily affected by are those who reside close to where the digging and soil dumping happens. The sites are open. Nothing can be controlled even there are whatever methods, this includes odour, noises.

Additionally, **D7.4** acknowledges that odour is not as bad as before. 'Much better than before. Air quality, water pollution, smell and explosion.'

M3.4, a Hanghung villager, accepts that odour issue is considered tolerable: 'Noise and smell are bearable.'

According to **M3.3**, odour also comes from water tanks:

There are many meetings regarding the budget. The tank issue requires a big budget. Nowadays the cause of smell is under water. Municipality, Members of the House of Representatives and others had meetings. Dr Kasem Junkaew established that the best way is to dig the mud out using the pulley so the water is clean. And we can return to our traditional lifestyle. Now there is water in the tank but it couldn't be used.

It has been affirmed that odour remains a problem for Mae Moh villagers. Moreover, it can be noted that odour emerges from water tanks and explosions in the mine. Odour is a challenging issue to resolve as it requires a large budget to do so. The next environmental impact to be considered is smoke.

6.1.7 Smoke

Smoke, along with other types of pollution, continues to be a problem in Mae Moh, though it is unclear whether it comes from the power plant or bushfires, according to interviewees.

M4.2, an EGAT staff member, divulges that smoke is one of the major issues in Mae Moh. 'The environment, the climate and the villagers' well-being, dust, smoke or any pollution.' Moreover, **D6.1** argues that EGAT contends that it is not dust and smoke, but he/she is still doubtful. 'Dust and smoke. EGAT claims it's steam but I cannot prove it.' **D6.1** elaborates that the fact that villages are surrounded by forests could lead to villagers experiencing smoke from bushfires. 'Dust, smoke, being surrounded by forest: bush fire. EGAT should be able to coordinate with Royal Forest Department. The Royal Forest Department tells the villagers to look after it themselves.'

Deforestation

Other than the environmental impacts noted, deforestation is another impact of EGAT's operation. Ms. Nakwiroj (2005) declares that coal-fuelled electricity production requires *deforestation*:

Furthermore, over 10,000 rai of deforestation would take place to open the ground's surface, dig lignite to use as fuel in electricity production which erased the traditional lifestyle where villagers obtained food from forests.

Additionally, the Occupational Health Patient Rights Network filed a lawsuit against EGAT at the Chiang Mai Administrative Court (ASTVผู้จัดการออนไลน์ 2009):

At Chiang Mai Administrative Court, approximately 300 of the Occupational Health Patient Rights Network from Mae Moh district, Lampang which are affected by EGAT's coal-fuelled power station. Together they filed a lawsuit against EGAT and associating organisation on the basis of negligence.

Regardless, in the court case EGAT ensured that the environmental conditions from its patent permit were specified in the contract it has with its contractor (*Decided case 44-59/2552 2009*):

EGAT has brought the measures that the private company is responsible for directly which are integrated in the contract as comprehensive as possible, for example, obligation to the law, control of environmental impacts, safety control and proceedings according to environmental standards which demonstrates that [EGAT] complied with the patent permit conditions strictly.

Moreover, EGAT explained that it conducted environment audits as specified in the patent permit's conditions (*Decided case 44-59/2552 2009*):

Next, EGAT employed Chiang Mai University to write (a document) after it was completed, it was sent to the Office of Natural Resources and Environmental Policy and Planning to present the expert committee to consider which can be accepted that EGAT has complied with this condition of the patent permit completely.

As an outcome, the Central Administrative Court did not revoke EGAT's mining licence (The Nation 2015):

They also appealed when the Central Administrative Court did not completely rule in their favour. For example, the court did not revoke EGAT's licence to operate a coal mine in the province to supply fuel to the power plant.

However, the Administrative Court stated that EGAT did not rehabilitate the land as the patent permit specified (ASTVผู้จัดการออนไลน์ 2009):

Where [EGAT] built a golf course on the area where plants are supposed to be grown, the measure indicates clearly that [EGAT] has to grow plants for replacement. Hence, plants must be grown where EGAT built a golf course.

The court document (*Decided case 44-59/2552 2009*), (ASTVผู้จัดการออนไลน์ 2009)

illustrated the same information.

The Supreme Administrative Court ordered EGAT to minimise its environmental impacts, to install water curtains, to set up a committee to assist the relocated villagers and to rehabilitate the mine site as close to its natural condition as possible (The Nation 2015):

The Supreme Administrative Court yesterday ordered the Mae Moh lignite-fired power plant in Lampang province to minimise its harsh impact on the local environment and residents.

This station, run by the EGAT, has been blamed for polluting the environment and harming the health of locals.

The Supreme Administrative Court ordered EGAT to rehabilitate the mine site as close to its natural condition as possible.

The Supreme Administrative Court upheld the essence of the lower court's ruling and just made minor changes to improve environmental measures. For example, it ordered EGAT to install 800-metre-long water curtains between its mine and villages. It also required EGAT to set up a committee to help locals whose properties and lives are seriously affected by pollution to relocate out of an area within five kilometres of the mine. ... EGAT was ordered to rehabilitate the mine site and return it to as close to natural condition as possible.

There could be other factors that contribute to the pollution in Mae Moh. The environmental impacts led villagers to develop concerns for their health. These concerns will be addressed in the following section.

6.2 Health concerns

The various types of pollution explored above, and in particular sulphur dioxide emissions, have led to health concerns among villagers. **M4.1**, an EGAT staff member, further reports that villagers' objections are based on health issues. 'Their objections [the villagers] are issues concerning health. The communities are affected by health problems, the impacts of sulphur dioxide. After that, there were impacts of the dust, noise, vibration.'

Three other informants shared the same view. **N27.1** states that villagers are worried about their health because initially, EGAT did not have FGD systems:

EGAT did not install FGD systems at first, not in first three units, that's 125 MW in total. Not in 4-7 either. Including the landscape and winter, poor circulation of air. The plant was expelling high volumes of sulphur dioxide and the pollution occurred. The villagers worried about their health.

N20, an informant from the Department of Environmental Quality Promotion, specifies the health concerns are caused by smoke and dust: 'Health concerns. Smoke from the exhaust, dust from the coal mine.' However, **M3.8**, a Pongchai villager, suggests that health concerns are caused by local residents. 'Most of Pongchai village doesn't have any problems with EGAT. The environmental impact nowadays happens from the villagers' actions, not from EGAT.' This declaration is contested by other informants who hold EGAT responsible for environmental degradation. This is once again an indication of the contested nature of villagers' claims and an indication of a lack of unanimity among local residents on environmental issues.

Additionally, **M2.4** expresses that sulphur dioxide is spread in a sphere further from EGAT's site: 'Sulphur dioxide is not spread in areas next to the power plant but it will be spread somewhere 30, 40 kilometres further. These areas get the impacts.' Therefore, residents of areas from many kilometres away from the power plant could experience health impacts from its operations, as well.

The health issues of Mae Moh villagers are caused by a range of pollution types. It was acknowledged that villagers had suffered because in the beginning EGAT did not have appropriate measures in place to manage the environmental impacts. Even though many concur that the environment has been improved, some are convinced that pollution takes place far away from EGAT Mae Moh. As a consequence, people in that domain are affected by the environmental impacts. Health concerns are adopted as a suitable reason to make demands.

6.3 Villagers' demands

One of the main aims of the fieldwork conducted in Thailand for this thesis is to understand the nature of the environmental conflict at the Mae Moh power station—one part of this is to understand the environmental impact of the power plant. Given the different vested interests of EGAT, and the villagers and the different power relations that lay behind this conflict, we expected the precise nature of the environmental impact to be contested. The preceding section gave voice to many informants and the way that they were impacted. This section looks at the subsequent demands that villagers made on EGAT as a consequence of this environmental impact.

The villagers demonstrate their agency—their ability to contest their circumstances by struggle even though they have little power relative to EGAT—by making demands on EGAT to shape the outcomes of the Mae Moh power plant conflict. The villagers have power over EGAT because EGAT needs their approval in the People's Forums in order to remain in the area, or to proceed with any new projects.

These villager demands include: environmental improvement, medical assistance, relocation, monetary compensation, assistance and welfare. They will be elaborated in this section, which also provides a window into the agency of villagers in the ways that they attempted to challenge EGAT and struggled to reduce the environmental impact of the power plant and/or to obtain compensation from EGAT. The role of the law courts and the Thai state at play in mediating this conflict are also considered.

6.3.1 Environment

Requests made to EGAT are related to the environment. For example, N28, a government official from the PCD, mentions pollution control as one of the demands. 'Pollution control, managing impacts [Power Development Fund], resettlement and expense, compensation, money, resettling fees but demand to stay in the same district and social aspect [occupation].'

N20 expresses that one of the villagers' demands is clean air. 'Clean air, compensation, welfare and medical expenses.' In addition, villagers wanted EGAT to stop producing electricity using lignite until it could prevent dust and sulphur dioxide, according to a court document (*Decided case 60-77/2552 and 68/2548 2009*):

For the defendant to stop producing electricity using lignite as fuel in factories of the defendant in Mae Moh tambon Mae Moh district Lampang until it could prevent *electrostatic precipitator* and sulphur dioxide from spreading completely.

Maison (2012) elaborated on how EGAT is pressured by printing Ms. Nakwiroj's speech:

I would like to request the president of Energy Committee, members of House of Representatives and human rights commissioners to investigate the meeting of stakeholders held by EGAT to open the new phase of Mae Moh mine on 18 August 2012, which villagers disagree with because existing problems have not been solved.

6.3.2 Medical demands

The villagers also asked EGAT to grant medical assistances and transportation. **N27.1** states: 'They [the villagers] need transportation and medical expenses for patients.' Further, **M7.4**, an EGAT employee, illustrates: 'They want to get treated at Mae Moh. The medicine here is better than in hospitals.'

6.3.3 Relocation

The next demand that is directly related to environmental impacts is relocation. **D6.1** informed the interviewer that villagers from villages nearby requested to relocate. 'Two to three villages nearby asked for relocation.' **M3.3** reports that some villagers would like to relocate because some environmental impacts are stronger in winter. 'In regards to health, some of the villagers want to move because the impact is the worst in winter. The air pressure is low and the smell is strong.' Another interviewee agrees with this comment.

N19, an Energy Regulatory Commission staff member, suggests that villagers demanded to receive the same amount of compensation after resettlement:

Many things from representative selection, village tambon already complained. So did the five kilometres area. The people outside that area want it to expand therefore, we need to discuss academic results or villagers are going to disagree among each other.

One informant expressed a similar point of view.

D7.2 suggests that EGAT must relocate villagers out of a five kilometre radius to stop villagers from complaining. 'We must migrate everyone out of a five kilometre radius. There shouldn't be any communities there because if there are then they wouldn't stop

complaining.’ **M3.5**, a relocated villager who currently lives in Chanlongrat, reveals that in the past villagers demanded to receive assistance with relocation with the help of the Occupational Health Patient Rights Network. Once, they resettled, the villagers did not make further demands:

In the past, we demanded together but afterwards, our opinions are not the same. We already moved. It’s over for us. We are happy with this. We are not demanding that we must get this we must get that. We build ourselves even though we didn’t get 100 per cent of what we asked.

Additionally, the Bangkok Post (2004) disclosed that some villagers would like the government to offer them lands for agriculture and accommodation. ‘The affected villagers wanted the state to give them new plots of land for housing and farming.’

6.3.4 Monetary compensation

M3.12, a Mohluang villager, insists that villagers would like to receive monetary compensation and if they do not receive it, they will protest. ‘Now we demand money. When we don’t get what we demand, we protest.’ **N20** suggests that some villagers requested monetary compensation for medical treatment. ‘Clean air, compensation, welfare and medical expenses.’ Another informant made a similar remark.

The demand by villagers to receive monetary compensation from EGAT met strong criticism from EGAT officials. **N30**, a government official from the Ministry of Energy, gives his/her opinion that villagers might be asking for resettlement to receive monetary compensation:

Another demand is for moving. There are 1,300 households next to the mine. They claim they want to move but it seems like they would rather get paid than really want to relocate. I want a middle man to determine the right measures to reimburse. They are demanding things using past incidents and being unfair to EGAT resulting in the rise of electricity fees.

Furthermore, **M2.6** explains that after villagers received their monetary compensation, they no longer had a motivation to oppose EGAT:

At first, there are groups of villagers that gathered. I was one of them, demanding and won the court case and got my compensation with people in my village and they are okay.

M4.1 specifies that one of the demands villagers made was to receive monetary compensation:

For welfare, they [villagers] requested that if we [EGAT] are building a new plant, they would like to receive specific things, such as, salary and so on. In the documents they specify their demands. EGAT didn’t respond, we have to go to court. It is political.

D6.4, an EGAT employee, informed the interviewer that local leaders are those who demand the monetary compensation:

Those who want monetary compensation, such as the Occupational Health Patient Rights Network of Mae Moh and leaders of some communities that claimed they are affected because they are close to our [EGAT's] site.

M4.3, an EGAT staff member, said that villagers made demands of EGAT for large amounts of money:

They demanded a lot of money but EGAT has to pay according to the verdict for many people, comes up to approximately 30 million baht only. The court did order EGAT to pay as much as they demanded.

The Supreme Administrative Court ruled that EGAT should compensate affected villagers who filed the lawsuit against it, as published in the Bangkok Post (Sattha 2015):

The Supreme Administrative Court has upheld a lower court ruling that ordered the Electricity Generating Authority of Thailand (EGAT) to compensate villagers affected by pollutants from its Mae Moh lignite power plant. Wednesday's ruling, which supported that of the Chiang Mai Administrative Court, grants a total of 25 million baht to 131 victims, both alive and dead, the villagers' lawyer Thirasak Chihunthot said ... The compensation is to help relieve years of suffering after they were exposed to dust and sulphur dioxide emissions from EGAT coal-fired plants in Lampang's Mae Moh district, he said ... The villagers will receive between 20,000 to 240,000 baht each, depending on the severity of their illnesses, he said.

Additionally, according to the court document (*Decided case 60-77/2552 and 68/2548 2009*), villagers were awarded a range of monetary compensation from EGAT:

The litigant to compensate the prosecutors of the undecided case number 140/2546 for 102,000,000 baht, to compensate the prosecutors of the undecided case number 141/2546 for 102,000,000 baht, to compensate the prosecutors of the undecided case number 142/2546 for 102,000,000 baht, to compensate the first, second and third prosecutors of the undecided case number 190/2546 for 102,000 baht, 102,000 baht and 101,800,000 baht in order ... With 15 per cent interest annually of initial payments from the day after the court case until the payments are completed.

To compensate the first to the tenth prosecutors of the undecided case number 60/2548 for 3,407,500 baht, 4,810,750 baht, 7,133,125 baht, 1,120,000 baht, 1,120,000 baht, 1,600,000 baht, 5,233,750, 7,568,500 baht, 8,612,500 baht in order ... With 7.5 per cent interest annually of the initial payment from the day after the court hearing until the completion of payments.

As the appeal would delay the compensation process, local residents did not want EGAT to appeal (ASTVผู้จัดการออนไลน์ 2009):

We would like to beg EGAT that it should not appeal this case and follow Chiang Mai Administrative Court's verdict by having sympathy for the villagers who have been suffering and struggling until many villagers passed away. The villagers do not wish to face anymore losses. But if EGAT will appeal, they will keep fighting to request and protect their rights best.

In a news article (Thaipost 2011), it was noted that protestors requested the governor to revert back to the old system of administration of the Power Development Fund division, to investigate the Power Development Fund due to the committee's misconduct and to transfer the Mae Moh sheriff:

Villagers from four tambons, over 1,000 villagers in Mae Moh Lampang led by Mr Suntorn Jaikaew (President of Sob Prad Subdistrict Administration Organisation), Mr Prajoon Chai Keaw (President of Jang Neu Subdistrict Administration Organisation), Mr Pisit Taksinapimuk (President of Na Sak Subdistrict Administration Organisation) and Mr Suk Thaithanasukan (President of Baan Dong Subdistrict Administration Organisation) requested the province to examine the misconduct of the Power Development.

The group of protestors requested the allocation of the Power Development Fund to be altered back according to its old requirements by dividing (the communities) into six parts, meaning, granting a part each to five Subdistrict Administration Organisations and a part to the management fund which makes 42 million baht per year. Moreover, they demanded the inspection of the purchase and employment from the Power Development Fund in the past and to transfer the Mae Moh sheriff elsewhere.

The Stop Global Warming Association and the Occupation Health Patient Rights Network also wanted an answer as to whether the Power Development Fund should continue to operate as it was originally intended to, or whether interests groups should be allowed to dominate it (ASTVผู้จัดการออนไลน์ 2011):

To find the conclusion that if the [Power Development] fund should continue to operate with the initial purpose or not and how should the guidelines be or leave the operation to fate or to the power and requirements of different interest groups.

This statement implies that the Power Development Fund's management is dominated by interests groups and that personal gains could come from the Power Development Fund.

The Stop Global Warming Association and the Occupational Health Patient Rights Network requested that the Supreme Administrative Court order the Power Development Fund's provincial committee, and the Energy Regulatory Commission, to improve the approval process for projects, and to order the Power Development Fund's provincial committee and the Energy Regulatory Commission to withdraw resolutions of projects that are inconsistent with the Energy Regulatory Commission's rules (Maison 2012):

Demand for the Court to rule or order the Power Development Fund's provincial committee and the Energy Regulatory Commission to withdraw the solutions regarding projects which are inconsistent with the Energy Regulatory Commission's rules concerning the Power Development Fund to develop or rehabilitate communities that are affected by EGAT's operation 2010 and the Energy Industry Act 2007.

Demand for the Court to rule or order the Power Development Fund's provincial committee to proceed according to the intentions of the Energy Regulatory Commission's rules by bringing the

projects of 11 owners to consider and re-approve as the Energy Regulatory Commission's rules entail.

For the court to order suspension of the approval of budgets for projects that are not consistent with the rules.

6.3.5 Assistance

Villagers made other requests for assistance from EGAT in compensation for the environmental degradation. **M3.6** points out that EGAT would build anything villagers request them to. 'Mainly, they built whatever we demanded.' Additionally, **M3.8** told the researcher that some villagers requested EGAT install streetlights for them. 'Yes, road, lights. They [EGAT] just started. The medicine here is better than in hospitals.' Villagers utilised environmental impacts to legitimise demands for assistance from EGAT. In terms of assistance, villagers would like EGAT to provide them with streetlights, roads, to investigate accidents and provide transportation. The next demand EGAT had to respond to was employment.

6.3.6 Employment

Villagers also began to make demands concerning employment because they claim they are affected by environmental impacts and resettlement which caused them challenges in making a living. **N28** mentioned earlier in this section that one of the demands is concerning employment. 'Pollution control, managing impacts [the Power Development Fund], resettlement and expense, compensation, money, resettling fees but demand to stay in the same district and social aspect [occupation].' In addition, **M3.2**, a Sob Pad villager, illustrates that villagers would protest for employment:

There were kids that work for EGAT but not as employees, only as contractors. They wanted to become EGAT staff. They protested, eventually two of them had to quit ... Children get to work here close to home. No need to go anywhere. Now is okay and should give jobs to people in Mae Moh first, give us about 50 per cent.

According to interviewees, EGAT has made it a policy to employ Mae Moh villagers before labourers from other areas. Furthermore, local staff help EGAT find out what local residents need and how to fulfil those needs.

6.3.7 Welfare

M4.1 goes on to insist that making demands is political and villagers also demand welfare:

For welfare, they [villagers] requested that if we are building a new plant, they would like to receive specific things, such as, salary and so on. In the documents they specify their demands. EGAT didn't respond, we have to go to court. It is political.

Some villagers do not wish to make demands as they feel others demand for too much. **M2.6** reveals:

We never made demands with EGAT from another point of view, they [EGAT] are trying to help but some people demand for too much. Millions. How many millions for one person? Some NGO members gave false hope to other members, saying they would receive 30 million. Five million each. Some people are subconsciously greedy. When some people go and say we must get it because we are sick. Yes it's true but not to the extent when you can't survive, going to die, there are ways to cure and EGAT is helping. In several manners and they are trying to improve. I'm not taking sides.

Nonetheless, not all villagers regard their demands as too great as they are convinced that EGAT is responsible for the environmental impacts. Therefore, villagers react to this environmental conflict differently.

Villagers made demands to EGAT concerning many things: the environment, medical attention, relocation, monetary compensation, assistance, employment representative selection and a five kilometre radius. The next component will describe the means villagers used to make demands from EGAT.

Villagers had a wide range of concerns about the EGAT plant and its impact on their lives. They also differed on how best to respond to these issues, as the following responses from villager informants indicate. There are differences in how to organise responses to EGAT and the benefits of the different actions that they might take. Some favour formal written submissions to EGAT. Some wanted to participate in EGAT activities and use this as a vehicle to engage EGAT with their demands. Others wanted to protest via the Occupation Heath Patient Rights Network. Others wanted to use more direct action, such as roadblocks of the EGAT plant.

6.4 Peaceful and non-peaceful methods of protest

In environmental struggles protestors utilise a range of tactics and strategies to press their issues and achieve either the halting of, or modification of, the environmental hazard that they are opposing. Because environmental protestors are usually opposing large and powerful corporations or government organisations or instrumentalities they have to be persistent, innovative and often militant to gain publicity for their cause in the first instance, and to eventually gain victory or concessions. Certain methods of demand are considered more effective. These methods can be classified as peaceful and non-peaceful. Each environmental conflict has its own specific dynamics, shaped by the political ecology of each instance. This

section outlines the ways that villagers responded to the negative environmental impact at the Mae Moh power plant.

Miall, Ramsbotham and Woodhouse (1999) introduce the concept of *exchange power*, which is linked to negotiation and evident in the outcomes of negotiation to resolve conflict such as that experienced at Mae Moh. The negotiation over the environmental conflict is that EGAT fulfils *some* of the requests of local residents in return for giving EGAT their approval in civil society's forums. Examples of how villagers employed their exchange power are listed in this segment.

Peaceful methods include making demands through leaders, document submissions, phone calls, participation in EGAT's activities and coordination with the Occupation Heath Patient Rights Network.

Some demands are expressed through leaders of collective action. First, **D7.1** demonstrates how demands were made:

Presented through subdistrict headmen, village leaders, subdistrict municipality or the Subdistrict Administration Organisation, for example, defective roads, they [villagers] asked EGAT to lay crushed stones there, making documents through community leaders then through local leaders, subdistrict headmen and village leaders.

Second, **N27.1** describes that villagers also made demands through their group representatives. 'First, protest at organisations, second, submitting documents to the Office of Prime Minister and Ministries, third group representatives, fourth, road blocking and fifth, legal action.' A formal method to make demands to EGAT is to submit documents. This is a method selected by villages as **D6.1** answers 'documents' when asked how villagers make demands. This is supported by **N27.1** quoted above: 'Submitting documents to the Office of Prime Minister and Ministries.'

D6.3, a villager, reports that documents were submitted to different parties in order to get demands met:

Submitting documents to the Prime Minister, politicians, representatives from two houses: the House of Representatives and Senates, Human Rights Commissioners, Administrative Court, Courts of Justice, Ombudsmen. Meeting commissioners to clarify.

M3.1, a former EGAT employee, clarifies that, in the past, villagers would either submit documents or make demands at EGAT or its provincial office rather than adopt more drastic measures:

I think mainly, in the beginning, they were sincere. Firstly, they didn't block the roads or do anything drastic. They handed in a document and went to EGAT and provincial office.

Some villagers relied on phone calls to make demands. **D6.1** simply responds 'phone calls' when asked how villagers made demands.

D6.1 elaborates that some villagers made demands by participating in EGAT's activities. 'By participating in EGAT's activities and asking EGAT to cooperate.'

Other methods of making demands are *non-peaceful*. Non-peaceful tactics usually include those that make an issue public. These approaches include roadblocks and protests. It could be considered that villagers exercise threat power when selecting these methods in making demands, in contrast to exchange power where they would do something EGAT wants if their demands are satisfied. As for threat power, if EGAT does not satisfy the villagers' demands, they would do something that EGAT does not want. This section offers examples of demands made using non-peaceful methods.

D7.3 states that the demand approaches were effective where EGAT agreed to the request, and this was most often the case where the villagers managed to create a common issue and used non-peaceful methods. 'The demanding methods are effective. Mostly EGAT grant the requests. They demanded by road blocking, protesting. When it becomes a common issue, EGAT must resolve it.'

M3.7 accepts that one of the causes of road blocking is employment. 'In the past, village leaders blocked the road but they haven't compensated us yet. We tried to get EGAT to recruit our children.' Further, **N27.1** endorses this, stating 'road blocking' was one of the tactics used to make demands and **D7.1** also acknowledged that road blocking was an option for making demands by villagers. It was a popular option because EGAT tended to give villagers what they requested when villagers disrupted others' activities:

The communities have high expectations. We do our best with our main duty. When they [Huay King villagers] block the roads, we tried to terminate this issue because it was creating trouble and they demanded money. We quickly pay them to solve this disruption. This makes villagers think that that it is the way to get what they want. Therefore, this happens often.

In addition, **D6.3** accepts that villagers resort to road blocking when they make demands but that it is not an appropriate measure: 'If submitting documents by road blocking, threatening, pressuring. Then it is not right.'

From this statement, **D6.3** further confirms that villagers also make threats when making demands.

Protesting is a drastic measure and the Mae Moh residents did protest around some demands. **D6.1** notes the reasons for protesting for some villagers: ‘Protesting other villages that asked for migration. EGAT listened, arranged for the listening stage. Protesting soil dumping last time. EGAT responded well with a tax.’

Again, this was included in **N27.1**’s list of demand methods: ‘Protest at organisations’. **N27.1** also reveals that villagers are willing to take legal remedies: ‘Legal action’. **M3.12** discloses that villagers would resort to protesting when their demands are not met. ‘Now we demand money. When we don’t get what we demand we protest.’

M3.5 mentions that previously a group of villagers made demands with the Occupational Health Patient Rights Network. This could be considered a more effective approach due to the NGO’s involvement. Furthermore, the interviewee emphasises that he/she is not a member of an NGO:

In the past, we demanded together but afterwards, our opinions are not the same. We already moved. It’s over for us ... We only united for our common goal but we are not NGO members.

Because non-peaceful methods cause common problems, they tend to be more effective. According to interviewees, these methods are used for demands relating to monetary compensation. Some of these requests are labelled irrational. Criticisms of demands made to EGAT will be listed in the next section of this thesis. As Murphy and Bendell (1999) cited in Chapter 3, the primary pattern in conflict between the private and the third sector is that relationships remain hostile between both parties during the course of the dispute. As a consequence, the demands of residents are characterised as irrational by EGAT employees and a representative from the Energy Regulatory Commission. As **D6.3** states:

Sometimes, people demand beyond reasonable appropriateness and science which influence the public and business sector to purchase electricity from other countries more, which does not solve global warming. Electricity price would rise. NGOs’ roles that demand and weak government. Extreme or irrational NGOs will push the nation into poverty and not solve environmental problems. It is not good to purchase electricity from other nations ... Local residents perceive EGAT as a big, wealthy organisation. They [EGAT] can’t do anything underground, so they are using the legal channels. Sometimes villagers’ requests are too much and not rational. EGAT should not be being threatened. There should be a middle man evaluating the damage. Bangkok-siders live there, where there are oil fuelled and sulphur power plants for a long period. However, they (villagers) are not short lived either. They are acting like they are dying tomorrow. They need to find the balance.

Moreover, **D7.1** expresses that villagers' demands are never-ending:

People's demands are never-ending. Interests groups are involved. Engineers focus on our main duty but CSR is not as important to them. The communities have high expectation. We [EGAT] do our best with our main duty. When they [villagers] blocked roads, we tried to terminate this issue because it is creating trouble and they demanded for money. We quickly paid them to solve this disruption. This makes villagers think that it is the way to get what they want. Therefore, this happens often.

A similar argument is stated by another interviewee. The perspective that environmental conservation is not EGAT's top priority will be illustrated later in the chapter.

A news article (Maison 2012) demonstrated that some parties would pressure EGAT to make demands. For example, the Occupational Health Patient Rights Network would demand the President of the Energy Committee, House of Representatives and National Human Rights Committee to examine the upcoming EIA:

Moreover, we [the Occupational Health Patient Rights Network] will demand the President of the Energy Committee, House of Representatives and National Human Rights Committee to quickly examine the matter that EGAT is conducting an EIA for stakeholders to open the new mine on 18 August 2013, which villagers disagree with the plan because old problems remain unresolved.

N19 supports that the demands would not stop being made until the allocation of compensation is sorted out:

Until the benefit division is sorted out, the conflict will continue. Some villagers won't stop demanding. At first, they might have demanded for the community but after a while they started thinking about personal gains. They want forever, without putting any effort in.

M4.1 recounts that villagers made demands for salary, roads, lands, title deeds, monetary compensation and welfare:

Sob Prad's resident group, they demanded monthly salaries and many more. Over ten requests, roads and lands. They asked for financial compensation and welfare and title deeds after migration. In the first ten years of migration, they are given local maintenance tax, meaning they cannot trade the land. After ten years, they will receive the title deeds so they can trade the land. But now, slowly, they are getting the title deeds ... They made demands for easy lives. It also has something to do with electoral base. That's how he won the election. First he almost lost. The court ordered his imprisonment due to fraud. He wants to drag EGAT down with him.

Villagers made different demands from EGAT, an important reminder of the fact that villagers are not homogenous, a fact utilised by EGAT in appeasing the demands of some groups of protestors and rejecting the demands of others. Relations of patronage and kinship often underlie these dynamics. Some villagers demanded relocation and monetary compensation, while others made demands relating to the environment, assistance, medical assistance, representative selection and welfare. These will be elaborated in this section,

which also provides a window into the agency of villagers and the ways that they attempted to challenge EGAT and struggled to reduce the environmental impact of the power plant and/or get compensation from EGAT. The role the law courts and the Thai state played in mediating this conflict is also shown.

A key demand is of course to stop or reduce the pollution from the Mae Moh plant. For example, **N28**, a government official from the PCD, mentions pollution control as one of the demands. ‘Pollution control, managing impacts [Power Development Fund], resettlement and expense, compensation, money, resettling fees but demand to stay in the same district and social aspects [occupation].’ Additionally, **N20** expresses that one of the villagers’ demands is clean air. ‘Clean air, compensation, welfare and medical expenses’. Villagers also asked EGAT to grant medical assistance and transportation. **N27.1** states: ‘They [villagers] need transportation and medical expenses for patients.’ Further, **M7.4**, an EGAT employee, illustrates: ‘They want to get treated at Mae Moh. The medicine here is better than in hospitals.’

Relocation of villagers to areas away from the worst pollution effects is a common demand. **D6.1** informed the interviewer that villagers from villages nearby requested to relocate. ‘Two–three villages nearby asked for relocation.’ **M3.3** reports that some villagers would like to relocate because some environmental impacts are stronger in winter. ‘In regards to health, some of the villagers want to move because the impact is the worst in winter. The air pressure is low and the smell is strong.’

N19, an Energy Regulatory Commission staff member, states that villagers have demanded to receive the same amount of compensation after resettlement:

Many things from representative selection, village tambon already complained. So did the five kilometre area. The people outside that area want it to expand therefore, we need to discuss academic results or villagers are going to disagree among each other.

D7.2 suggests that EGAT must relocate villagers out of the five kilometre radius to stop villagers from complaining. ‘We must migrate every one out of the five kilometre radius. There shouldn’t be any communities there because if there are then they won’t stop complaining.’ **M3.5**, a relocated villager who currently lives in Chanlongrat, reveals that in the past villagers demanded to receive assistance with relocation with the help of the Occupational Health Patient Rights Network. Once, they resettled, the villagers were finished with making demands:

In the past, we demanded together but afterwards, our opinions are not the same. We already moved. It's over for us. We are happy with this. We are not demanding that we must get this we must get that. We build ourselves even though we didn't get 100 per cent of what we asked.

Nevertheless, **N30**, a government official from the Ministry of Energy gives his/her opinion that villagers might be asking for resettlement to receive *monetary compensation*:

Another demand is for moving. There are one 1,300 households next to the mine. They claim they want to move but it seems like they would rather get paid than really want to relocate. I want a middle man to determine the right measures to reimburse. They are demanding things using past incidents and being unfair to EGAT resulting in the rise of electricity fees.

Furthermore, **M2.6** explains that after villagers received their monetary compensation, they no longer have motivations to oppose of EGAT:

At first, there are groups of villagers that gathered. I was one of them, demanding and won the court case and got my compensation with people in my village and they are okay.

M4.1 specifies that one of the demands villagers made is to receive monetary compensation:

For welfare, they [villagers] requested that if we [EGAT] are building a new plant, they would like to receive specific things, such as, salary and so on. In the documents they specify their demands. EGAT didn't respond, we have to go to court. It is political.

Similar sentiments are mentioned by three other interviewees. **M3.12**, a Mohluang villager, insists that villagers would protest if they did not receive monetary compensation: 'Now we demand money. When we don't get what we demand we protest.' **N20** conveys that some villagers requested for monetary compensation for medical treatment. 'Clean air, compensation, welfare and medical expenses.' **D6.4**, an EGAT employee, indicates that it is the local leaders who demand monetary compensation:

Those who want monetary compensation, such as the Occupational Health Patient Rights Network of Mae Moh and leaders of some communities that claimed they are affected because they are close to our [EGAT's] site.

M4.3, an EGAT staff member, admits that villagers demanded a large amount of money from EGAT:

They demanded a lot of money but EGAT has to pay according to the verdict for many people, comes up to approximately 30 million baht only. The court did order EGAT to pay as much as they demanded.

As environmental degradation is recognised as caused by EGAT, villagers think it would be reasonable to request for assistance from EGAT. This section will discuss various demands that villagers made.

M3.6 points out that EGAT would build anything villagers request them to. ‘Mainly, they built whatever we demanded.’ Additionally, **M3.8** told the researcher that some villagers requested EGAT to install streetlights for them.

Villagers utilised environmental impacts to legitimise demands for assistance from EGAT. In terms of assistance, villagers would like EGAT to provide them with streetlights, roads, to investigate accidents and provide transportation. The next demand EGAT had to respond to is employment.

Other villagers began to make demands concerning *employment* because they claim they are affected by environmental impacts, and resettlement, which caused challenges for making a living.

N28 mentioned earlier in this section that one of the demands concerns employment.

‘Pollution control, managing impacts [the Power Development Fund], resettlement and expense, compensation, money, resettling fees but demand to stay in the same district and social aspect [occupation].’ In addition, **M3.2**, a Sob Pad villager, illustrates that villagers would protest for employment:

There were kids that work for EGAT but not as employees, only as contractors. They wanted to become EGAT staff. They protested, eventually two of them had to quit ... Children get to work here close to home. No need to go anywhere. Now is okay and should give jobs to people in Mae Moh first, give us about 50 per cent.

According to interviewees, EGAT has made it a policy to employ Mae Moh villagers before labourers from other areas. Furthermore, local staff help EGAT find out what local residents need and how to fulfil those needs.

Other demands were made by villagers, as **N19** describes. These demands were around representative selection and the five kilometre radius:

Many things from representative selection, village tambon already complained. So did the five kilometre area. People outside that area want it to expand therefore, we need to discuss academic results or villagers are going to disagree among each other.

Some villagers may have requested that the five kilometres be extended because the residents of that area receive special treatment from EGAT, including special assistance and funding.

M4.1 goes on to insist that making demands is political and villagers also demand welfare:

For welfare, they [villagers] requested that if we are building a new plant, they would like to receive specific things, such as, salary and so on. In the documents they specify their demands. EGAT didn't respond, we have to go to court. It is political.

Some villagers do not wish to make demands as they feel others demand for too much. **M2.6** reveals:

We never made demands with EGAT from another point of view, they [EGAT] are trying to help but some people demand for too much. Millions. How many millions for one person? Some NGO members gave false hope to other members, saying they would receive 30 million. Five million each. Some people are subconsciously greedy. When some people go and say we must get it because we are sick. Yes it's true but not to the extent when you can't survive, going to die, there are ways to cure and EGAT is helping. In several manners and they are trying to improve. I'm not taking sides.

Nonetheless, not all villagers regard their demands as too great as they are convinced that EGAT is responsible for the environmental impacts. Therefore, villagers react to this environmental conflict differently.

M3.5 mentions that, previously, a group of villagers made demands with the Occupational Health Patient Rights Network. This could be considered a more effective approach due to the NGO's involvement. Furthermore, the interviewee emphasises that he/she is not a member of an NGO:

In the past, we demanded together but afterwards, our opinions are not the same. We already moved. It's over for us ... We only united for our common goal but we are not NGO members.

6.5 EGAT's responses

EGAT's responses to the villagers' actions and demands outlined above could be explained as utilising multiple notions, as outlined in the theoretical insights chapter. First: *inclusion*, the process where a broad range of both internal and external stakeholders are progressively incorporated along with their concerns and their reasonable demands are implemented. Second: *institutionalising conflict management*, which EGAT achieved through regularisation and standardisation of conflict management alternatives. Chumporn and Kamolvej (2015) reveal that EGAT utilises negotiation to ease the tension around the power plant dispute. In addition, Fisher and Ury (1981) express the view that alternative conflict management commonly means including non-adversarial negotiations with interest in the focal point. Furthermore, the adjustment from hostile to collective interest-based negotiations may involve attitude adaption of the conflict and utilisation of new skills by the numerous disputing participants. Third: *system integration*, a concept that deals with the ways innovation could encourage or resist different agents' relative skills. In system integration,

when there are modifications, not only do they change the technical assignments, they also transform the relations of agents in organisational arenas. As for social integration, it prevails over system integration. As Orssatto and Clegg (1999) argue, existing connections of definitions and group membership could assist or hamper the way villagers' demands were accepted and responded to. Examples of EGAT's exertion of economic power can be observed from its various forms of responding to Mae Moh residents: some had their monetary and non-monetary demands accepted, others refused. Finally, the foundation of a voluntary unit by EGAT allowed it to exercise its social power by encouraging residents to develop loyalty to EGAT. Underling family relations between villagers and EGAT officials were difficult to document, yet were clearly at play in the uneven response by EGAT to the demands of different cohorts of protesting villagers.

One interesting question under study in this thesis is the way that state instrumentalities in developing nations like Thailand respond to the local opposition and environmental campaigns that develop in response to their (the instrumentalities') investment decisions. While the power relations are clearly uneven, given that the that state instrumentalities have the support of the state and the locals lack formal power structures to fight back, the EGAT case study shows that ignoring the demands of locals is not an option. A struggle develops in the form of a long, ongoing environmental conflict that leads state instrumentalities like EGAT to make concessions and respond to the environmental conflict. This section outlines how EGAT has responded to environmental conflict by building relationships with local residents, providing free medical attention, improving its environmental control measures, indirectly influencing social and economic changes, funding and resettlement. Also of interest is how EGAT's management CSR policy and planning developed and changed over time in direct response to this environmental conflict. These responses will be examined in this part of the chapter.

A key EGAT management strategy in play in response to the environmental conflict was to put great emphasis on developing relationships, trust and understanding with (some of) the Mae Moh residents. In order to accomplish these goals, EGAT socialised with villagers, developed their CSR policy, formed a voluntary unit, introduced staff rotations and took part in local activities and open houses. These different responses will be examined in detail in this section.

Firstly, EGAT's efforts in *establishing relationships with villagers* were a high priority. EGAT argued that they had put a lot of effort into building relationships with local villagers. EGAT's efforts covered many activities, including providing moral support for medical patients, participating in and hosting social activities with villagers, checking if help is needed by villagers, and installing light bulbs in local villages.

D7.1 claims that EGAT has improved its relationship with local communities and that EGAT had been interactive with them:

For coordinating work with the community, being friends with the community and at the same time help the community as they ask according to EGAT's rules. The communities have good relationship with us all along since 1992. We know this from evaluation from four criteria e.g., level of organisation image, level of relationship with the communities, level of communication and level of acceptance by community. In the first evaluation, the level of communication was low but other criteria were at the baseline value. At the same time, our annual activities have been conducted all along. Year 2 and 3 the tendencies of these criteria are better. We are monitoring now for the third party to evaluate.

Six informants expressed similar accounts.

M3.3 understands that EGAT is willing to help villagers when requests are reasonable:

I think (they) try to improve the best they can. No organisations want to fight with the host. If you demand too much, it's unlikely you'd get it. If it's a reasonable request, then EGAT would try to help.

N28 describes that lack of trust is a major issue. 'It started from EGAT creating impacts which led to the lack of trust in every part when it comes to problem-solving.' **D7.2** discloses that in the past, EGAT only discussed numbers with villagers which they could not understand:

Before we started CSR, management only talked numbers, telling the villagers that the results are below the standards allow but they did not understand and had doubts. They claimed they were sick. We were not speaking the same language. At the end, the projects include 'Sor wore' [senior] open house. Try to be neighbours [provide assistance to each other when needed].

N27.1 believes that villagers did not trust EGAT in the past:

EGAT did not install FGD systems at first, not in first three units, that's 125 MW in total. Not in 4-7 either. Including the landscape and winter, poor circulation of air. The plant was expelling high volumes of sulphur dioxide and the pollution occurred. The villagers worried about their health. They did not trust and feared EGAT. The emission has decreased, they (EGAT) reduced the production power as well as utilising better fuel but the villagers are still unsure. They still continuously have health issues but there could be other factors.

Three interviewees conveyed similar opinions.

M4.2 stresses that it is crucial for EGAT to develop good understanding with local residents:

EGAT follows CSR to establish good understanding with villagers, give back profits to society and community and form alliances because if EGAT exists without the community as the base of the operation it would be difficult for EGAT stay. I think it is an important gate, if anyone wants to destroy EGAT through the local community EGAT will be dead. Now EGAT tries to strengthen their local base as much as it can.

Two interviewees agreed with this proclamation. **M3.8** maintains that EGAT puts more effort into establishing relationships with villagers nowadays:

In the past, they barely associated with us but at the end, they came in the field. Especially, management, they visit the villages directly. Ms Sailada and seniors from EGAT. Most people from my village work for EGAT too. We help each other out.

Similar views are asserted by two informants. **M4.3**, an EGAT staff member, illustrates that EGAT adopts various means to develop understanding with local residents:

Build understanding. It is technical. We must explain in technical aspect. More importantly, I think it's about trust. If we trust each other, little things can be overlooked. Therefore, we focus on community relations. I admit that technical facet, measuring of pollution, we obey the law but the community's trust is what we need to work on continuously ... Mainly is to build understanding, show necessity in increasing production source, build understanding that we cannot use natural gas too much. We must use other fuel to decrease the risks; imported coals are unclear ... If people in Mae Moh and Lampang trust us. Other groups won't be able to do anything. It takes time. We have been doing it continuously. We used TV commercials, travelling to Mae Moh festival, open Mae Moh so people come visit, we do not have anything to hide. Mae Moh is not the land of pollution. Community radio, TV, newspaper, now we are building understanding in online media. We are aiming to use feedback, Line, Instagram in online media. We are trying to build understanding or Thailand might have energy issues ... It is participating and building good relationship with the community to build trust. Jit-asa is CSR after-process but don't forget we focus on in-process. If we put a lot of effort into after-process then the society will question if it's because we do bad things. We must get in-process first. Everything must be under the standard. After-process is about familiarity and trust but mainly it must be in-process.

Another informant concurs with this comment. **M3.7** mentions that EGAT would do anything to be understood:

They send mobile doctors. They do everything to be understood. They are very nice to the community now. In the past, they were bad. No use of media. When we invite them to come to activities they come. Sometimes, they donate money for activities in future ... They do everything. They approach the community. The past 2–3 years, they are very nice. They try to please the locals.

Another informant expresses a similar account. **D6.4** explains that EGAT tries to build understanding to prevent conflict. In addition, **D6.4** insists that villagers understand EGAT better now even though they are not informed properly:

Build more understanding and initiate communication more. Misunderstanding leads to conflict ... At the end, villagers start to understand ... Many measures to cure cost a big chunk of money. But

sometimes, the money stays with the community leaders or interest groups. They want continuous benefit. Therefore, even though you cured it and it's become fact but the interest groups do not want good news. They want us to be inefficient and still urge villagers all the time. As a result, old villagers and those that are not educated, feel that they are still in danger.

Four informants indicated similar outlooks. **M3.1** implies that EGAT staff make known that they understand villagers better now, and that it helps that some staff have married local villagers:

Now I also notice that EGAT created awareness so that workers understand villagers more. EGAT staff now do not attract jealousy. They blend in with the villagers. EGAT workers also marry locals and start families with them. Some of the locals also become EGAT staff.

M3.1 contends that local staff assist EGAT in realising local needs:

They are smart. They reunited local people to be mechanics, electricians. These staff help building understanding and brought other benefits such as Village Health Volunteer Foundation, help in schools, gifts and did good things to the community, arranged mobile doctors, Phapa, Khatin. The villagers appreciate it and this helps relax the tension. EGAT also gives scholarship and so on. The local people also find out what the community needs and EGAT can help fulfil it. Hence, the villagers accept us due to the help too.

M2.6 explains that it takes time to build trust:

Normally, villagers have good hearts. When people come we welcome as normal. We could talk but understanding and trusting takes time. Takes time to be 100 per cent with them ... Honestly, we are not sure they truly want to help us. There aren't any good guarantees. There's still misunderstanding and dishonesty between EGAT and the community. We're still unsure. Some people are still not sincere with us. They just come due to duty.

Another informant agreed with this notion.

Another managerial response by EGAT to the conflict is that it established a *voluntary unit*. This is an example of social power and social integration. EGAT perceived that it is essential to establish a good understanding with the local communities. Hence, it put serious effort into communication with the villagers. Its core unit that was established to communicate and engage with the local communities is the voluntary unit. The voluntary unit is the former Upatham (helping) unit. The name was updated in order to give the villagers the perception that EGAT staff deeply care for the well-being and happiness of the local communities. This unit greatly assisted EGAT in forming relationships with local residents. The unit's responsibilities will be elaborated in this section.

M3.6 explained the responsibilities of the community relations unit:

They [EGAT] use community relations and spread news, PR and help the community as much as they can. They use the radio, journal and PR in villages sending representatives to talk to subdistrict headmen, village leaders. TV to publicise how the air is in Mae Moh. Local

newspapers. When EGAT has a project and is welcoming visitors from other provinces. Open house.

Five informants suggested similar explanations. **M3.2** concurred that EGAT management used to neglect villagers and added that, currently, management counts villagers as a part of their families and that the efforts from EGAT have been noticed:

Management did not use to associate with the locals and we didn't know each other but now management says we're the same family. We always participate in each other's activities. They help when we ask for help and are respectful to community leaders. Now there is the Power Development Fund. Environment is better. The roads have lights now ... EGAT gives us a budget to help, they sent in representatives to see what the villagers want to do. Now EGAT wants to coexist with the communities and be friend with the community. If there are problems and we need help. They help if they can, e.g., crush rocks.

Similar impressions were presented by three other interviewees. **M4.1** stated that EGAT staff intended to change villagers' perceptions of EGAT by forming relationships, and that building relationships is a major part of EGAT's strategy:

We open up to the villagers so they can see that the power plant is not dangerous or scary. In the past, we hardly mixed with the villagers like neighbours. But a great number of their children work for us by now. When we are recruiting we try to take in local people more in high vocational level, engineers, more local workers. Latest almost one hundred local workers ... Mostly, we focus on CSR and activities with the community.

D6.4 illustrates that EGAT encourages its staff to look after villagers closely and that it focuses on participation in local activities:

Need good communication to resolve and build relationships. Need to be built continuously. One department of voluntary unit per one village to let EGAT staffs take care of the community closely. In the past, we have been taking care of temples and schools for ten years. Now we focus on participating with community. Feedback in a lot of villages is better. Make us a family with direct communication.

Similar opinions are shared by four other interviewees. **M2.4** discloses that the unit also contributes to monetary compensation. 'Other compensations are: the rehabilitation fund, budget from the community relations unit that EGAT is in charge of to support development. EGAT invests its own budget in the area.' Two informants provided the same information as well.

M3.3 clarifies that the voluntary unit did not exist in the past and it helps with marketing local products. It is truly involved with local communities. Moreover, it enables EGAT staff and villagers to communicate directly. In addition, it gives villagers opportunities to get to know management as well as management to show support for them. Lastly, **M3.3** maintains that there is a commissioner to represent each village:

What doesn't require funding, they do it. They ask about our well-being when they come to attend meetings ... Voluntary unit helped me make Derndin map [piping underground layout]. We coordinate all the time ... Management founded voluntary unit. Management acknowledges villagers' problems showing us that they do not hate us. In the past, management didn't come. Representatives were sent. EGAT staff is better. Villagers get to know management. In the past, we didn't get to know anyone ... One representative per village in the committee. Not necessary village leader. If there are many people interested, we vote. If not many, we submit the names.

Further, **M2.4** mentions that EGAT aims to build relationships with the Occupational Health Patient Rights Network:

EGAT tries and pushes the Occupational Health Patient Rights Network to take part by sending academics of EGAT, compensation, prizes or budget to manage. Tries to have a relationship with the Occupational Health Patient Rights Network to reduce the conflict. I saw a lot of NGO members. They changed a lot.

Lastly, **M4.3** insists that even though EGAT has a community relations unit, it still focuses on being friendly to the environment, and that it is responsible for the creation trust and understanding between EGAT and local residents:

Community relations unit is CSR after-process but don't forget we focus on in-process. If we put a lot of effort into after-process then the society will question if it's because we do bad things. We must get in-process first. Everything must be under the standard. After-process is about familiarity and trust but mainly it must be in-process ... Their job is to build relationship, take care and help them to create trust.

M3.8 also declares that EGAT creates a positive impact because of the voluntary unit:

My village is further from EGAT. It's not all negative. There are good things as well. Our district wouldn't have been well developed if we didn't have EGAT. There is a unit that's responsible for our village. Most of Pongchai village doesn't have any problems with EGAT. The environmental impact nowadays happens from the villagers not from EGAT.

Socially, EGAT helps with everything. Every day now we have voluntary unit to help. Also budgets, e.g., tradition budget. Yesterday they helped with Tongchai temple. They help with everything. Quite good.

M3.6 had noticed an improvement of the unit: 'They respond quicker and better.'

M3.7 illustrates that most of EGAT's representatives are from the voluntary unit.

'Representatives are mostly from voluntary unit.' Further, **M3.7** responded 'yes and yes' when asked if the voluntary unit helps, and whether that help was provided promptly. **M3.9** reports that EGAT did not have a voluntary unit in the past:

In the past, EGAT was not involved with this. Not sure if it's because the communities were too afraid to demand. Before, EGAT did not have voluntary unit. In the past, 2–3 years, EGAT has improved a lot.

M3.1 declared that there is more honesty from EGAT now. ‘They have a voluntary unit, like NGO unit, got the information and established understanding with local people. There is more honesty.’

Some villagers think that it would be a good idea to put the voluntary unit in charge of the PDA, as **M2.6** suggests:

EGAT by itself has a voluntary unit. People that develop the communities or give it to Subdistrict Administrative Organisation because Subdistrict Administrative Organisation is close to the communities. Subdistrict Administrative Organisation has been improving the community seniors, they know the details. Instead of using the money to hire PDA. You give Subdistrict Administrative Organisation of each Tanbom. Must be better, the villagers are close to Subdistrict Administrative Organisation. If they can open up. The villagers don’t talk to PDA, what does PDA know?

D6.4 emphasised that the voluntary unit was needed to support local communities and that it was not founded for local leaders, further, **D6.4** added that the unit participates in open house activities:

We need someone with a heart to do good things in the community. At least the voluntary unit won over some villagers overall. We are not doing it for any leaders. We should focus on the voluntary unit more. Improve schools and temples. Build pahiew [morgues], toilets, donate jackets in winter and adopt kids [paying money annually from personal funds]. This is continuous and we got villagers hearts ... When we know old people are worried we had an open house day and young people too. So they can see the production system and problem-solving in engineering facet and go home and tell their families. We pick them up, they view the presentation then the voluntary unit had lunch with them. There is singing and dancing.

The voluntary unit’s members are only involved voluntarily and the unit made an immense positive difference for EGAT. Villagers appear to rely on the unit and have good relationships with the unit’s members.

EGAT initiated open houses for the public to observe their operation and to provide information on environmental standards in order to earn the trust of the public. EGAT hopes that this activity can terminate the distrust villagers have for EGAT.

D7.1 mentioned that EGAT hosts open houses for senior citizens and those who attend also benefit from the open house. Further, EGAT plans to arrange open houses for the public:

We do open house for seniors. Over 90 per cent are satisfied to come. They really liked it so we continue with the second time for everyone in Mae Moh and kids. Next year we will open for general public. We try to organise open houses for them to see our working processes. They are pleased. Those who come, receive money. Must ask for approval according to EGAT’s rules.

M4.2 accords that open houses are a part of EGAT’s effort in gaining the locals’ trust:

They also hold open house for people to see how things are. At present, Lampang is the hub when it comes to energy. I try to inform Mae Moh EGAT that, I want to see Mae Moh EGAT as an energy learning source which is not only when it comes to coal but also solar cells, wind power and biomass or so on. If we can accomplish this, visitors to Mae Moh can view so many things.

Four informants gave similar perceptions.

6.5.1 Corporate social responsibility

In Western countries many corporations and government instrumentalities have introduced CSR as part of their corporate strategy to respond to social and environmental issues in the societies where their businesses are located. There is a debate in the management literature over the extent to which CSR represents a genuine concern on the part of corporations and government instrumentalities about these issues or whether it is merely clever spin doctoring, a form of advertising to reinforce the ‘brand name’ of the organisation. As companies in Asia begin to pay more attention to areas involving environmental, social and governance issues, CSR Asia announced that government bodies and regional exchanges are also taking the lead in advocating sustainability (Anonymous 2011). Srinivasan (2011) argues that, even though CSR has gained momentum globally, there is only a little information on it in the South and South-East Asian areas. It seems that CSR research is insufficient in this territory. Nevertheless, in recent years Asian firms and governmental institutions have developed interests in sustainability as they are confronted with expanding pressure to discuss societal issues and to be accountable (Anonymous 2011; Visser & Matten 2008). Visser and Matten (2008) state that governments are progressively engaging in the promotion and support of CSR.

Although, CSR’s origin is in the Anglo-American corporate community and the Western management literature, Visser and Matten (2008) argue that CSR has grown considerably in Japan, South Korea and Taiwan, while India and China, both now emerged as major nations in the international economy, have placed CSR substantially on their agenda.

Welford (2008) explained that in the Asia Pacific, various elements of CSR are less developed. Over the past two decades, multiple large companies have been attacked for keeping sweatshops in Asia. Therefore, CSR in Asia focuses on labour standards. It has become evident that firms that outsource have taken the initiative in justifying their supply chains (Welford 2008). This has caused numerous factories to cheat in order to give the perception of following codes of conduct and the law.

Nonetheless, CSR in Asia is broadening to encompass community investment, the environment and health schemes. Enterprises have started using stakeholder dialogue,

statements and disclosure to encourage superior practice. Additionally, developing consideration is being given to corporate governance. Various reputable CSR operations are not conducted solely by individual businesses but incorporate other businesses, CSOs and the public sector. Numerous tripartite partnerships in Asia have been established to stimulate good CSR practices (Welford 2008).

Although there are apparent benefits, CSR development in certain nations is slower than in others. Welford (2008) believes that key problems concern: an unawareness of CSR matters and operations, the costs of involvement, a shortage of properly trained and skilled human resources practitioners, incompetent management apparatuses, contesting codes of conduct, too much attention on factory reviews, corruption and inefficient procurement practices. He (2008) proposes more training courses, commitment, activities for awareness promotion that include society groups, protest programmes, industry-wide stakeholder communications, satisfactory practice handbooks and better connections with industry associations, NGOs and government.

CSR has been a central part of the EGAT management's response to the Mae Moh environmental conflict and a central example of EGAT's social integration, as this section outlines. As **M4.2** acknowledges CSR as only a social trend:

It is a social trend, CSR, as we know, both public and private sector can adopt CSR. EGAT follows CSR to establish good understanding with villagers, give back profits to society and community and form alliances because if EGAT exists without the community as the base of the operation it would be difficult for EGAT to stay. I think it is an important gate, if anyone wants to destroy EGAT through the local community EGAT will be dead. Now EGAT tries to strengthen their local base as much as it can.

If there is anything that needs to be taken care of, EGAT's CSR department will investigate it first, as **M3.1** explains:

CSR is actually common for big companies from Europe and America. EGAT established a unit to handle people. They even have a department, taking care of the mass and CSR. Even an assistant governor of community relations works on projects too. If there is anything, CSR department went first. The unit was established within the past 10 years. They had Rove's strategy unit, like NGO unit, got the information and established understanding with local people. There is more honesty. In the end, the villagers didn't know but when there is resistance, we need to think where we are going to operate. Must establish a unit to 'take action' here. And give a lot of budget, enough. I think it is a considerably big budget. Maybe not at first but I think lately so much.

Next, **D7.1** confirms that, at present, EGAT is expanding its CSR. A part of its CSR is following various standards:

Improve internal process to create quality and environmental friendliness. Currently, internally, we are okay. We try to expand CSR. Cooperation with the communities, we integrate more ... We [EGAT] adopt ISO 2006, principles of Ministry of Industry in different categories, whether it is labour law, human rights, developing communities, ISO. I can't remember all of it. There are six or seven principles, good governance, the governor's policy ... Environmental principle is that all the plants must follow ISO 10004, ISO 1001. When it comes to quality of the environment, Mae Moh EGAT received this award since a long time ago namely ISO 20000, ISO 9001, ISO 10004, Thai Industry Standards Institution 10008. Quality tools are adopted by EGAT integrative.

Three other informants provide similar testimonies. **N30** indicates that EGAT's CSR helps EGAT gain acceptance in Mae Moh, and that EGAT is truly dedicated to conserving the environment:

EGAT has adopted CSR and been contributing to the communities for over a decade. There is a survey annually to evaluate the people surrounding the plant's satisfaction with the business being there. More than 80 per cent are satisfied, 20 per cent are not. The level of dissatisfaction could be high or low. They might not be happy because they still haven't got what they demanded for ... It (EGAT) tries to, 30 years ago, EGAT conserved the environment better than other organisations. Since Kasem Jatiwanich, Thailand's pioneer in CSR.

Another informant made a similar suggestion. Nevertheless, **D7.2** expressed that EGAT's CSR is considered more out-process focused, while EGAT's vision statement states that EGAT's production is environmental friendly:

The concerns that need to be dealt with are dust, noise and water pollution. It is more of a policy issue. The point is 'how much does management want to invest in solving this problem?' Because our [EGAT's] CSR every day, it is more of out-process, not in-process, not truly 'CSR in-process' CSR, how it relates to the environment. They do not care if they pollute the water. There's still a lot of skill building to do ... Must look at vision. Electricity production while being environmentally-friendly, accepted by the society, try to reach all the groups from kids. There are so many activities, up to seven-eight.

This comment supports **D7.1**'s opinion earlier that environmental conservation is not EGAT's first concern. **M3.2** notes that EGAT takes care of communities surrounding the plant. 'They take care of villagers around the plant.' EGAT seeks to resolve the conflict in Mae Moh by building relationships with local residents and the voluntary unit has been founded to directly handle local needs, as well as managing local relationships. On top of those efforts, EGAT also engages in CSR commitments. **D7.3** recalled that EGAT did not practice CSR in the beginning but it does now. 'EGAT tries to adopt CSR but CSR was not used in the beginning.'

Additionally, **M3.1** disclosed that EGAT's assistant governor was in charge of EGAT's CSR department and that the voluntary unit was formed from the CSR budget:

CSR department has been founded and has the assistant governor in charge. Activity relations department at the level of assistant governor, supporting department, task staff from PR and who

did community relations before. Moreover, EGAT provided bigger budget to help the villagers ... At first, they didn't know voluntary unit volunteer. Only followed responsibilities. EGAT started voluntary unit when they started CSR. There were volunteers but the voluntary unit didn't exist. EGAT established the voluntary unit by using its CSR budget. It is a part of encouraging staff to be voluntary unit members. We have examples from Srinakarin Dam Governor Weerawat Weerachon. He had the staff chip in to start a fund to help the villagers. One department is responsible for one village. EGAT helped with funds as well as donations from staff. The staff get to know what each village wants and help them with it. But not in a competitive way, for example, building tanks there, they started encouraging volunteering by leaders who were former governors. Model of Srinakarin Dam was effective. Voluntary unit came in the picture as management was urging workers to associate with villagers and the workers were happy to do so. This way they established friendship with villagers. In the end, EGAT's idea changed to 'wherever we are going, we would help the quality of life of the local people to become close to ours.'

Additionally, **D7.2** adds that EGAT attempted to use CSR to resolve conflicts and that the engineering department had a difficult time finding spaces in the newspaper because CSR stories were taking up all the space:

If I were in management, I would take a different approach in solving the problem. Look in the newspaper, the pages are dominated by CSR stories. The engineering department can't acquire any space in the newspaper. If CSR is not good enough, the power plant can't survive and we can't build new ones due to the opposition. We try to use this as a driving mechanism to resolving conflicts.

M6, an Energy Regulatory Commission staff member, elaborates that EGAT's CSR is extensive and that EGAT has experience in CSR:

They listen to the people. They [EGAT] had academics informing people, the benefits of the plant and coal mine, the environment and proving different pollution indicators. They installed the system in front of the plant, hospital. It's always on. I went to see. They try but I'm not sure if the local residents are fully satisfied. They used the media a lot, radio, TV and hosting different events. Reporting research results to people, creating understanding with the people, a lot of CSR ... I think they have experience when it comes to CSR.

M4.1 reveals that EGAT's CSR does not only entail offering to help villagers but also to educate them. However, the interviewee suggested that EGAT's CSR focuses more on out-process CSR as operational line staff still need to develop realisation:

We [EGAT] have long-term plans for 45 years. We have plans from our organisations and what the villagers demanded. For CSR, we have seven plans. This is not about lights and roads. We also educate the old people on pollution standards. We also installed monitors in different villages to report the air quality. When we adjust/modify the measuring tools, we invite them to come and witness too ... We emphasise out-process, activities more, events ... But in the production process, we can reduce the pollution considerably. Nonetheless, we can't truly reach zero emissions. We haven't created realisation for operational line staff. They just do their jobs.

Moreover, **M4.1** stresses that now EGAT concentrates more on CSR:

We follow legal procedures and we put more effort into CSR, establishing understanding with the community. We have about seven projects annually, for example open house for senior citizens, building the Meo dam, encourage the community to take part.

Two other interviewees present similar views.

EGAT co-organised an international workshop as a part of its CSR as published on the CCOPs website (2015):

The CCOP Technical Secretariat, together with Department of Mineral Resources (DMR) and Electricity Generating Authority of Thailand (EGAT), has successfully co-organised the Technical Workshop on Clean & Green Mining on 21–24 January 2015 in EGAT Mae Moh, Lampang, Thailand. There were 36 local participants and organisers, four resource persons from the Geological Survey of Finland (GTK), International Atomic Energy Agency (IAEA), Federal Institute for Geosciences and Natural Resources (BGR), Germany and EGAT, seven CCOP Member Countries (Cambodia, China, Indonesia, Lao PDR, Malaysia, Thailand, Vietnam and Myanmar) and four CCOP TS attending the two-day technical seminar and two-day excursion in Mae Moh Mine, Lampang and Siam Cement Group (SCG), Chaehom District, Lampang.

EGAT promoted LED lights as an example of efficient electricity consumption as they are energy efficient and help decrease carbon dioxide emissions (ASTVผู้จัดการออนไลน์ 2014b):

Changing road lamps to LED project of EGAT Mae Moh is one of the pioneering projects that EGAT has conducted to become an exemplary organisation in campaigning for consuming energy cost effectively. ... There is a plan to expand the results to every organisation in every part that consume large amounts of light which will help in decreasing electricity usage approximately 3.6 million units per year. This can save over 10.8 million baht and can decrease 1,860 tonnes a year of carbon dioxide.

It can be recognised that EGAT used this project to demonstrate a commitment to CSR. สำนัก

ข่าวไทย TNA News (2013) promoted EGAT's project thus publicising the EGAT's CSR efforts:

EGAT with impact and MEX Exhibitions invest 20 million baht to host LED Expo Thailand 2014. In the exhibition, there would be the display of LED innovation from over 300 companies globally.

In conclusion, CSR has received attention from many organisations worldwide. Even though the concept began in the Anglo-American context, it has gained popularity in Asia.

Nevertheless, CSR in Asia requires further growth due to multiple factors. It seems that EGAT started adopting CSR as a strategy to obtain acceptance, rather than it is a genuine effort—**M4.2** (an EGAT employee) saw CSR as a merely social trend. EGAT's CSR has evolved over time as the informants described. In accordance to Welford's (2008) statement, EGAT does engage in community investment. To an extent, local villagers were successful in influencing EGAT to address their concerns via CSR, judging from **D7.2**'s comment that EGAT's CSR is out-process focused, and **D7.4**'s revelation that EGAT feels that it is acceptable to create environmental impacts as long as the pollution/impact levels meet specified standards.

6.5.2 Medical assistance

A central part of the EGAT management strategy in response to the environmental conflict was to provide medical assistance for some of the illnesses generated by their power plant. EGAT arranged for a mobile doctor unit for villagers with no charges for the services and enhanced the performance of the Mae Moh hospital in order to promote the health of Mae Moh residents.

D7.2 states that villagers wished to receive treatment at the Mae Moh (hospital). ‘They want to get treated at Mae Moh. The medicine here is better than in other hospitals.’ In addition, **D7.2** explains that mobile doctors take care of Sob Prad villagers. ‘The villagers are okay, they are looked after well by EGAT. We have mobile doctors at Sob Prad.’

EGAT organised a mobile doctor unit to examine Mae Moh residents at no cost to the villagers and supported the improvement of the Mae Moh hospital. In addition, to medical care, EGAT also heighten its environmental performance in order to prevent future impacts from its transactions.

M3.1 stated that EGAT founded a Village Health Volunteer Foundation:

EGAT local staff help building understanding and have brought other benefits such as the Village Health Volunteer Foundation, help in schools, gifts and do good things for the community, arrange mobile doctors, Phapa, Khatin.

M3.7 also noted that the EGAT-organised mobile doctor unit helped villagers handle their respiratory issues. ‘They [EGAT] send mobile doctors. They do everything to be understood. They are very nice to the community now.’

Two other informants presented similar opinions.

Moreover, in court (*Decided case 60-77/2552 and 68/2548 2009*), EGAT’s representative revealed that EGAT provided medical assistance and compensation to the Mae Moh villagers. ‘The defendant arranged for mobile doctor unit to examine the health of Mae Moh residents including paying for hospital expenses and transportation when they seek treatment from public hospitals (*Decided case 60-77/2552 and 68/2548 2009*).’

6.5.3 Media

Another central part of the EGAT management strategy in response to the environmental conflict was a carefully planned media strategy. EGAT utilised Sawasdee Mae Moh, TV commercials, local radio stations and newspapers for PR purposes. This allowed it to

communicate its view of the condition of the environment in Mae Moh, its responsibilities regarding Mae Moh activities, as well as to promote Mae Moh tourism. The details of the media's role are covered in this section.

M3.5 explained that EGAT adopted Sawasdee Mae Moh and local radio as a part of the media strategy. 'Building understanding. Open house so we villagers can see what they do. They used the media by using Sawasdee Mae Moh, local radio.' **M4.3** stressed that EGAT seeks to use online media as a part of its strategy:

PR. If people in Mae Moh and Lampang trust us. Other groups won't be able to do anything. It takes time. We have been doing it continuously. We used TV commercials, travelling to Mae Moh festival, open Mae Moh so people come visit, we do not have anything to hide. Mae Moh is not the land of pollution. Community radio, TV, newspaper, now we are building understanding in online media. We are aiming to use feedback, Line, Instagram in online media. We are trying to build understanding or Thailand might have energy issues.

Four interviewees offered similar perspectives.

M4.1 describes that EGAT illustrates the air quality of Mae Moh in the media. In addition, **M4.1** highlights that EGAT uses the media heavily to gain local residents' trust:

EGAT uses the media heavily, I can't see the national campaign actually. Mostly, they tried to gain acceptance from people in the area. Nationwide that's up to the central EGAT. EGAT uses the media about Mae Moh's air quality.

M3.1 also noted that EGAT communicates through the media. 'EGAT uses the press to explain how we [EGAT] function to villagers. We are now more open for the press to get more information.' **M3.7** acknowledges that, in the past, EGAT did not use the media. 'In the past, they (EGAT) were bad. No use of media.'

EGAT has shown its dedication to developing relationships, trust and understanding through multiple methods, namely: the voluntary unit; CSR projects; participation in local activities, rotation of staff; open houses and utilisation of the media. In all, EGAT's efforts to attain approval in Mae Moh are very comprehensive. In order to investigate EGAT's responses to the Mae Moh environmental conflict, EGAT's funding of projects will be reviewed.

6.5.4 Funding

Another component of the EGAT management strategy in response to the environmental conflict was to offer funding to Mae Moh villagers through various funding institutions. The funds offered are distributed through the PDA, the Mae Moh Development Association and

the Power Development Fund. These funds, and monetary the compensation they provided, will be explored. The funds are examples of EGAT's utilisation of its economic power.

M2.5, a villager, comments that villagers do not wish to demand for anything extra after being offered annual compensation:

They gave us everything. The villagers are compromising because they [EGAT] follow the conditions in the past. In 1992, Sob Prad villagers demanded for compensation and they granted Kongtunpattankunnaphabcheewit [National Office for Empowerment of Persons with Disabilities Fund], they give us 30 million per year. Now I don't think the villagers want to demand for anything.

M2.4 states that EGAT tried to resolve conflict by sending academics to discuss compensation schemes with villagers:

EGAT tries to push the NGOs to take part by sending academics of EGAT, compensation, prizes or budget to manage. Tries to have relationships with NGOs to reduce the conflict. I saw a lot of NGO members. They changed a lot.

M4.1 revealed that EGAT gives local villagers special treatment, for example through food and employment:

We [EGAT] give the villagers money for food, OTOP. Like SCG or general power plants. LCPs. When we are hiring, we give priority to local people first for jobs that require labour, not knowledge. We have the rule that mainly we have to hire local labourers.

6.5.5 The Population and Community Development Association

EGAT created the PDA as part of its CSR policy. The PDA is a NGO founded in 2004 to improve occupational conditions, stimulate involvement in local development and complement the local residents' capabilities in sustainable development (Eley et al. 2008). The is a national-level organisation but it has been operating in Mae Moh since 2004 too (EGAT 2014).

The PDA was contracted to facilitate EGAT in granting funds for local projects. EGAT provides 20 million baht annually to the PDA (Theerawongsakul 2013). The PDA was established by a national politician, Mechai Viravaidya, with the initial purpose of popularising family planning in Thailand as a non-governmental organisation (PDA viewed 12/07 2013).

M2.6 raised the point that EGAT might select the PDA's assistance due to personal relationships, and that this action is only beneficial to a group of people:

One more issue, why must they employ the PDA instead of using the money to pay the PDA 10 million to manage. People in the area, there are those who want to improve, have the capacity to but why do you use this money to hire them and it takes too long for the money to reach the community. This group doesn't improve the most it could or the PDA, what we can see is only the bank, for occupation, that they are trying to promote, it doesn't work. The community fails a lot with the money that EGAT gave them, then we go back and ask the Mae Moh Development Association that's located opposite from Mae Moh district. I think in one year, they get 40–50 million. This only is beneficial to a specific group. Why don't do it themselves? We wonder why instead of developing right away, you spend the money on hiring help. The PDA's case perhaps due to personal relations. But for Mae Moh Development Association at first, I don't think so. In Chiangmai, Chiangrai, he (Mr Viravaidya, the PDA founder) has shops, restaurants and businesses. If he's a businessman, he must be thinking of personal interests, he must be thinking of income from expenses.

This statement also indicates that the founder of the PDA is a businessman and this leads villagers to doubt the PDA's intentions.

Another informant disclosed a similar viewpoint.

M3.9 told the researcher that EGAT grants funding for the PDA annually and that the PDA promotes occupation directly. **M3.9** clarified this, stating that the PDA does not receive the same amount of money from EGAT every year:

30 million a year. The PDA with Mr Mechai. This fund here supports occupation directly. We also get Power Development Fund. Ms Panida and Mr Viravaidya's funds are supported by EGAT ... Not enough for development. The PDA's funding from EGAT is not the same every time.

This statement is consistent with four other interviewees' opinions.

M2.6 reports that when the PDA guides villagers to failure, villagers turn to the Mae Moh Development Association and **M2.6** is unsure about the PDA's contribution as it does not truly helps with development and that it would be better if villagers get to manage funding themselves. In addition, the PDA receives 40–50 million each year from EGAT. Moreover, **M2.6** complains that the PDA only benefits villagers who gathered:

EGAT, if you think, you are hiring these organisations, to improve the people's quality of life, you don't think the local have the competency to develop their area. The young people that graduated for the local villagers, support them instead of wasting your money here. Support villagers or groups in the community. The PDA only supports the villagers that have already gathered, they don't just take villagers and help with occupation. I want them to reconsider because the PDA's contract is finishing this year (2013).

This testimony denotes that villagers do not accept the PDA.

6.5.6 The Mae Moh Development Association

The Mae Moh Development Association was created by the villagers in 2000 to improve the well-being of those residing in Mae Moh, and increase the level of understanding between

EGAT and local villagers (Eley et al. 2008). It was formerly known as the Quality of Life Development Association (Eley et al. 2008). In 2005, it was renamed as the Mae Moh Development Association (Theerawongsakul 2013). The heart of the Mae Moh Development Association's function is educational support and care for the elderly and the less fortunate.

The Mae Moh Development Association is another non-governmental organisation employed by EGAT to assist with local development projects. It is chaired by Panida Thaksinapimuk, sister of Pisit Taksinapimuk (President of Na Sak's Subdistrict Organisation). EGAT provides a yearly budget of 30 million baht to the association to fund local projects that acquire approval (Theerawongsakul 2013) (EGAT 2015b). However, multiple informants disagree about how much EGAT actually contributes to Mae Moh Development Association annually.

D7.2 believed that the Mae Moh Development Association received more than 100 million baht annually from EGAT. 'Annually, we [EGAT] gave Ms Panida 100–120 million baht.' On the other hand, **M3.12** stated that the Mae Moh Development Association received 30 million baht per year. 'Mae Moh Development Association 30 million per year.' **D6.4** thought it was much larger sum, stating EGAT provide the Mae Moh Development Association with 300 million baht per year to improve the villagers' quality of life. In addition, **D6.4** indicated that the Mae Moh Development Association also looks after social aspect on behalf of EGAT:

We can't focus on social aspect so we choose Mae Moh Development Association. Our main work is to produce electricity but this association receives three hundred million a year from us. They manage the money themselves. We hope it's the right thing ... The first organisation [Mae Moh Development Association] improves their quality of lives ... We can't focus on social aspect so we choose Mae Moh Development Association. Our main work is to produce electricity but this assembly receives 300 million a year from us. They manage the money themselves. We hope it's the right thing.

M3.5 declared that the PDA is not enough as the village is still developing. 'The PDA. Not enough. Still building new village.' **M3.9** disclosed that EGAT supported both the PDA and the Mae Moh Development Association financially. 'Ms Panida and Mr Viravaidya's funds are supported by EGAT.' **D6.1** confirms that the Mae Moh Development Association does expend its budget on local communities. 'Mae Moh Development Association really spends on the tambons.'

M2.4 confirmed that EGAT invests in funding Mae Moh, and that this budget is used to facilitate EGAT in forming relationships:

Other compensations are the rehabilitation fund, budget from community relations unit that EGAT is in charge of to support development. EGAT invests its own budget in the area ... Management will use budget and other things that facilitate people and organisations that they wish to build good relationship with. They will help every way they can. So it might result in people's attitude changing. They look at certain groups. Try to get on with them to help with their image. That's how it is, they didn't fix the law or policy but use strategies that cater specific groups.

D5 declares that EGAT spends money as an attempt to resolve the conflict:

The conflict is more of a conflict between communities. If it is a big community, EGAT supports it by providing money, welfare or so on. However, communities that do not agree with EGAT, EGAT will overlook and neglect when it comes to funding and treat us as black sheep.

M2.4 thinks that compensation is a part of EGAT's strategy in managing the Mae Moh conflict, and that compensation is not considered enough for Baan Dong villagers:

It can be seen from the compensation, salary, bonus, so many times of monthly salary and special fees that each department and group have to divide. Improving their own [EGAT's] capacity so much of these budgets ... For Baan Dong, not enough. Not worth it with someone who suffers from the impacts directly. If it is far, people in Mae Moh municipality it is worth it. No soil dumping, no dust, odour and they receive the allocated digging tax because legally, they calculate the digging area but no tax for dumping. Mae Moh get 90, 100, 120 million when there is no digging in Baan Dong. Baan Dong won't get this tax at all. If there is a bit of digging, we [Baan Dong residents] get about 6, 12 million. For areas that has digging and dumping, I want the law to be changed to be just as National Human Rights Commissioner points out that industry changes they noticed of soil dumping areas into mine areas. In dumping and mine areas, no less than 100 million baht. If they (EGAT) edit this, there will be justice in this area. They shouldn't do anything anymore. For the country to develop further, they must exchange. Buying as well, no buying leaders. In the past, they bought leaders, leaders became managers, local council, local administrators, local governance, subdistrict headmen, village leaders. They bought the leaders, the leaders would say 'there are no problems'. It is not effective in this era.

A similar opinion is held by another interviewee.

N20 asserts that EGAT has paid compensation as well as made arrangements for resettlement. 'EGAT took care of compensation and migration. The villagers actually received treatment.' Another interviewee provides a similar remark. Additionally, **M2.4** stated that the government compensates villagers who reside in the patent permit area with royalties by answering 'royalties' when asked what the compensation from the government was. On the other side, **N30** notes that EGAT should not spend Thai citizens' money unfairly or without proper accountability. Money from EGAT must benefit communities instead of just some people:

Depends on the villagers but EGAT must obey the law. We cannot give Thai people's money to an irrational minority. If villagers are reasonable and affected, we will pay. After the payment, it should end there. Should not ask for more ... On the other hand, if it cannot be proven, there must be a negotiation or it cannot happen, it may be against the principles because we cannot give the government's money to those who do not deserve it ... Try not to have villagers ask for money

because the villagers are afraid we won't do it. Giving money must only go to projects that are helpful to the community. Not to get in someone's pocket.

M3.4 admitted that only a part of Hang Hung benefits from the royalty from the patent permit but claims that funds in Mae Moh are distributed fairly. Also, **M3.4** noted that the monetary compensation EGAT paid for damage his/her house was close to the actual cost incurred, but that others did not get adequate recompense:

Some of Hang Hung get patent permit area. Not a lot but the civil society's forum passed us ... The project owner manages the fund. Not necessarily the village leader. Village leaders are not involved. Only give signature to approve the project. Yes, fair ... Only those who relocated. Some households did not receive enough money to repair their houses. I don't know how the valuers work, even my house. I paid the difference myself. The valuers are EGAT's employees. However, the amount was close to the amount that I actually spent.

Lockwood (1964) explains that legitimisation could be achieved through social and system integration. It can be observed that commonly EGAT has accomplished this from receiving approval at civil society's forums. This is an example of where EGAT relies on local residents' approval for its actions in order to have influence in (1) taking advantage of the Royal Forest Department Regulations that can grant permission to reside in the national preserved forests B.E. 2548 (2005) and (2) the regulation of the Department of Primary Industries and Mines in granting licence concessions, renewals and transfers (no. 8) B.E. 2558. Both these are considered as the obligatory passage points of the case study where political actors are used to protect their (EGAT's) interests.

M4.1 indicated that EGAT also offers local villagers money for their OTOP projects but, then **M4.1** also reported that the Baan Dong villagers do not feel they are being granted a lot of money from EGAT, an opinion **M4.1** disagreed with. **M4.1** also believed that monetary compensation was a source of conflict. Six informants demonstrated similar assertions. Moreover, **M4.1** explains that the voluntary unit donates money to villages on special occasions:

We give the villagers money for food, OTOP. Like SCG or general power plants. LCPs ... In Baan Dong, we must dig the ground to get coal. We [EGAT] dump the soil in their area but when we divide Power Development Fund, they do not receive a lot. It's about the portion of the fund. The fund is divided by areas of a five kilometre, ten kilometre radius and outside of ten kilometres. Mae Moh is the centre. In 70 they do not receive a lot according to them but I don't know how it's a small amount ... For welfare, they requested that if we are building a new plant, they would like to receive specific things, such as, salary and so on. In the documents they specify their demands. EGAT didn't respond, we have to go to court. It is political ... They have 40,000 for village annually for us to spend, each unit, that's how much my unit gets for Huay Rakmai village. It is from internal funding to units to have activities with the community, e.g., or for villagers to cook for special occasions, children's day. The villages do not receive the money, unless it is something

like candlelight processions, then we donate money. Blankets or robes offering funding would come from central funding.

M3.2 explains that Baan Dong received compensation because its villagers suffered from environmental impacts. Furthermore, different villages take advantage of funding differently:

But the village that faces impacts such as Baan Dong. They got 20 million but NGO [the Occupational Health Patient Rights Network members] are not those from the community ... We get from both government and local organisation to fulfil the communities so that the qualities of life and development is better. It is up to usage too, some villages get the same budget but are less developed.

M3.3 affirmed that Baan Dong received compensation from EGAT and that villagers did not receive enough funding. 'Some of us see Huay King like Baan Dong why are they getting money. I don't know how they're being looked after. The budget is not enough.' In addition, **M3.3** responded 'Not yet' when asked if he/she was satisfied with the money granted by EGAT. Another informant had a similar outlook. **N27.1** agreed that compensation was a cause of the conflict and announced that giving money is an option for the government:

Compensation and the adverse effects ... After controlling the pollution but the villagers haven't accepted because of other causes. The leaders are very strong; unsatisfied about profit dividends and request for relocation but only in the same district for compensation. Note that they also get compensation for resettlement too ... On the positive side, they really try to please the local residents. Sometimes, that can't be achieved. There should be principals. Sometimes, villagers are against them. For example, smoke and dust, the government said to take action. If not, then offer money.

D6.4 argued that EGAT staff cannot tell village leaders what to do with the money they receive from EGAT, although EGAT wanted to support occupation development. 'We [EGAT] transfer funds to leaders. They manage the money. We look at evaluation but can't tell them what to do.' **M3.11** stated that, at first, compensation funds did not exist in Mae Moh and when they were established, they were not distributed thoroughly, although **M3.11** conceded that EGAT gave villagers money for their lands and trees:

Firstly, the funding did not exist. Not distributed thoroughly. Mae Moh people now do not spend the money on the project seriously and the outcome is not fair, e.g., my village has 3,000 people. Over 1,000 households. It's not enough for us. Big village. Small village can get things done in one year. But not for us ... Money for land, trees. All this from EGAT. Nothing from the government.

M3.9 complained that Mae Moh did not receive enough funding for development, but conceded that there is some cash funding given directly to community leaders to support village activities:

Not enough for development. The PDA's funding from EGAT is not the same every time ... Yes, there's another part that EGAT gives directly. Cash for development. EGAT gives us 40,000 per

village. Different from Power Development Fund because EGAT is giving directly to community leader to develop tradition, culture, religion or youth. EGAT gives to community leaders.

M3.12 suggested that his/her village does not receive enough funding for their sacrifices, and that villagers would protest to demand for more money:

No just want EGAT to keep in mind that people in my village made sacrifices ... Now we demand money. When we don't get what we demand we protest.

M3.9 and **M3.12** both do not trust that the funds are distributed fairly. **M3.9** informed the interviewer: 'Fair? In Thai society, there are people that have close relationships.' At the same time **M3.12** proclaimed:

Fair? When I had small land they gave me an amount according to that. It depends on what project the community will present. The community wants EGAT to help with occupation and basic foundation. Depends on the community. They approve what we present.

Another interviewee had similar experience. **M2.6** declared that EGAT provide more than enough funding for Mae Moh but that the way it was distributed meant it did not always meet local needs. While the villagers were compensated for the impacts they faced, **M2.6** noted this motivated some villagers to gather together because of the money. Further, **M2.6** added that EGAT paid compensation once it was ordered to by court:

More than enough. There is nowhere else that gets this much money. But when it is being distributed, it is not according to the real needs of the locals ... Real villagers know that some of them were affected in the past and compensation has been given but you want more and make demands again as an organised group. The latest issue: relocation from Baan Dong, EGAT organised for relocation, they moved to Chalongrat ... In Mae Moh, everyone is sick. It's only to the extent of how sick but you want special rights just for you. Five million each. They used this amount of money to attract these people to unite ... At first, there are groups of villagers that gathered. I was one of them, demanding and won the court case and got my compensation with people in my village and they are okay.

Kerkvliet (2013) describes that collective power can be used to attract external resources. From this quote, it can be recognised that villagers used their collective power to obtain capital. **D7.2** pointed out that EGAT's CSR favoured offering material things. 'Our CSR focuses on giving material things.' **M3.6** noted that people who complained through village leaders or subdistrict headmen were compensated:

They compensated people who notified through subdistrict headmen, village leaders. They brought EGAT's valuers came and evaluated the price. We hire our own contractors this time. I don't know if the villagers are satisfied.

M3.7 stated that EGAT offers financial support for future activities in Mae Moh, and that if villages requested special financial assistance, EGAT would give the money to village leaders:

Sometimes, they [EGAT] donate money for future activities ... If we [villagers] need a supporting budget or funds for the village, they help. They give us 50,000 in one tambon to share in each village for activities. They give the money to leaders. They respond in letters.

N19 indicated that some people expected to receive money without conditions:

Benefit division. Fight for wealth. Some groups can't access the wealth but the people that are close to the communities or NGO leaders have the opportunity to get some of the money. Local communities are used to getting 200–300 baht or freebies from gatherings. There are villagers that really need changes and those who hope to get compensation. The leaders have connections countrywide. Thai society is a patron-client society. Politicians expect votes. I work for Power Development Fund, I see everything. I try to make progress and help the people get access to the money, have opportunity to voice their opinions. They must be able to access the money without their leaders but would we succeed?

Two other informants supported this viewpoint.

Vichit-Vadakan (2005) implies that in the past five centuries the patron-client relationship has influenced Thai society. From the quote, the politicians in this case study have this type of relationship with the villagers. Hence, it is credible that politicians utilise voters as tools, as **M4.1** mentions. In addition, this statement also endorses Vichit-Vadakan's statement (2005) that NGOs have the elite as advocates initially. This can be considered the situation in the present case as Thai society is prominently vertically connected. Although the quote does not specifically mention the elite, it does note that the NGO leaders have connections all over the nation.

M3.1 implies that EGAT gave monetary compensation to villagers due to the fact that the villagers had difficulties pursuing farming, although the compensation did not solve their adjustment issues. In addition, **M3.1** added that it would only satisfy the demand from villagers who expected money only. Finally, **M3.1** revealed that relocation divided villagers into three groups:

Especially, in managing agricultural lands, I think EGAT is not very efficient in Mae Moh. The lands aren't close to water sources. They should have built new schools, district office. In addition, I think EGAT didn't select lands with nutritious soil for villagers to conduct agricultural activities. EGAT might have thought it was better because the lands provided are close to the main roads. If it were up to me, I would choose the lands just like the old ones. So they could continue with their occupation. If they use the same model as Chiewlang, they would have already planted the same type of trees for the villagers in the same amount. If EGAT had chosen to use this model, they wouldn't have to struggle with changing occupations. But in reality, they need to get new occupations, hard for them to adjust. If you pay the villagers, they do not have financial consultants, they would spend money and give to their children. This is the weakness because they never received big chunks of money before and that's why they are not capable of creating income from that money. EGAT should consider all facets, not only moving villagers. EGAT thought just moving and paying them once was enough but their ways of life must survive. They should be able to continue with their agricultural activities. If not, EGAT should provide them with assistance in

starting a new one ... I think mainly, in the beginning, they (villagers) were sincere. Firstly, they didn't block the roads or do anything drastic. They handed in a document and went to EGAT and province. They had a problem sticking together in the beginning because some were not satisfied, some were. I think there were three groups: 1) didn't want to move; 2) compromising and 3) okay, we get the money. The upset group couldn't stick together too much.

M4.2 reported that EGAT supported certain groups financially and that EGAT preferred that the Occupational Health Patient Rights Network received funding from the Power Development Fund:

Before I came, Ms Maliwan's group received supporting funds from the Power Development Fund of over a million baht for their projects of career support and so on. Mr Prasai was granted 1.2 million for transporting and treating patients at Chiang Mai hospital ... EGAT already gave Power Development Fund money. EGAT wants them to receive the money from there. But in certain matters, EGAT has its own budget, if they make a proposal and EGAT approves, then there shouldn't be any problem.

According to **M3.10**, a villager, the Occupational Health Patient Rights Network manages the monetary compensation by itself. 'They take the money they receive from demanding to manage among them. From what I know, EGAT takes care of them. EGAT assigned people to look after the patients.'

6.5.7 The Power Development Fund

In 2007, the Energy Industry Act was passed. Section 97(3) of the Act required the Power Development Fund to be created and managed by the Energy Regulatory Commission (ERC), which is under the management of the Ministry of Energy (Energy Policy and Planning Office 2013; Energy Regulatory Commission). Moreover, it specified that EGAT must transfer a part of its revenue monthly to the Power Development Fund (ERC). Annually, EGAT supplies 330 million baht to the Power Development Fund (Kunooatham). The purposes of this fund were mainly to compensate and rehabilitate the local communities around the power plant (Office of the ERC 2011).

M4.1 pointed out that subdistrict administrative organisations do not receive funding once a project is approved:

Money doesn't go to Subdistrict Administration Organisation. It's not direct. If they are not a Subdistrict Administration Organisation helping villages or customers, they would not stand a chance. Now the Subdistrict Administration Organisation is more influential than village leaders. Village leaders are from the public sector. The Subdistrict Administration Organisation is local. Three groups: subdistrict headmen, village leaders and sheriffs are now not as powerful as Subdistrict Administration Organisation. The Subdistrict Administration Organisation receives funding, drives four-wheel drives. Sheriffs drive cheap cars. Subdistrict Administration Organisation have a lot of money. If there are 12 villages and all of the projects pass, the commissioners sometimes arrange it beforehand. The village representatives won't disagree. The

Subdistrict Administration Organisation is from the outside, get benefits from outside. If there is a need for construction the people from there will take the jobs. That's Thai politics.

M3.7 states that there is only one commissioner for the Power Development Fund's provincial-level committee and that tambon- and provincial-level commissioners are selected in the People's Forums. Moreover, the provincial committee consists of 27 commissioners and villages can have up to two commissioners:

I'm not a commissioner, the commissioners are selected in each village. From two or three candidates, we only chose one for the provincial-level committee. The second one gets to be the tambon-level commissioner. The provincial committee consists of 27 commissioners. Provincial and tambon-level commissioners are chosen through people's forums. Two commissioners in some villages, one in others.

Moreover, **M3.7** commented that currently, the Power Development Fund has not received any funding from EGAT and he/she does not know whether the Power Development Fund is sufficient. **M3.7** also explained that villagers cannot receive the Power Development Fund as the governor is not approving their projects. Importantly, **M3.7** specified that the Power Development Fund monies are sent to contractors' bank accounts:

I don't know if it is enough. Currently, Mae Moh hasn't received any funding. The governor is not approving. The fund goes to the contractors' bank accounts. The contractors must have evaluated the cost beforehand. Project owners or village leaders do not get the money.

Similar testimonies were given by three other interviewees.

D7.3 feels that the Power Development Fund is a cause of the dispute. Then, **D7.3** elaborated that locally, the Power Development Fund's provincial- and tambon-level commissioners report to members of House of Representatives:

After the Power Development Fund was established, people wanted the money. This led people to struggle to understand ... Locally, members of House of Representatives look after provincial- and tambon-level commissioners. There should be support from local to national level. Politicians form alliances with leaders.

D7.2 pointed out that the Power Development Fund provided 450 million baht annually to Mae Moh, and that the Power Development Fund could be a cause of conflict. **D7.2** further noted that before the Power Development Fund was established, EGAT had been helping villagers improve their health through other associations. **D7.2** said that each tambon has its own representatives to look after the Power Development Fund, and that if a group had a problem with how the Power Development Fund was spent, it was their responsibility to investigate the issue. Next, **D7.2** declared that currently, roadblocks are related to the Power Development Fund, instead of EGAT. Finally, **D7.2** argued that the political problem is the

distribution of the Power Development Fund and that villagers do not trust how the Power Development Fund is spent and that only certain groups of people can access the money. Hence, they would like the Power Development Fund to be examined.

There must be leaders. They could be the Subdistrict Administration Organisation or President of Provincial Administration Organisation. I'm guessing at the local level. Interests could be from the Power Development Fund and compensation. The villagers are already receiving a part of the Power Development Fund. The money Mae Moh residents receive annually is at least 450 million baht. The new problem is conflict of interests (money) mainly ... Regarding health issues, before the Power Development Fund was started, EGAT had been helping different associations. Annually, we gave Ms Panida 100–120 million baht. Mr Viravaidya had received help directly from us too after the crisis. Before the crisis, we didn't help the villagers. We existed separately. We changed our roles in 1992 ... Each tambon and village has its own representatives that they choose. The groups that do not get to manage the money do not benefit from the funds. Sometimes they agree not to complain at the same time. If one group complains, others are quiet. It's their own responsibility to investigate ... The political problem is distribution. The Power Development Fund. One unit of electricity will contribute one satang to the Power Development Fund. Each year the amount of money being paid into the Power Development Fund is approximately 340 million baht. There are dividends in each village, tambon. When they (villagers) spend the money, they might spend it on construction, they may not spend it the right way which they do not blame EGAT. They [villagers] want us [EGAT] to investigate because they know it's their money like the government ... In the past, the majority blocked roads. They blocked the entrance of Huay King. I couldn't come to work. Had to go around. Recently, they blocked the road in front of the district office. In later years, it has nothing to do with EGAT. It is the Power Development Fund's problem. Not our operation. It's their own problem with EGAT as a player. If they are making this an issue, they use EGAT as an excuse ... It's normal. There are conflicts of interests on top of health issues, the Power Development Fund, spending the money. Some groups may have access to the fund and some don't. Politics and power.

M3.5 told the interviewer that anyone can become a Power Development Fund member.

Then, **M3.5** set forth that members of the Power Development Fund have access to capital with low interest rates. If you are not a member, you do not get access. 'Anyone can apply. You get capital with low interests. If you're not a member, you don't get the money.'

M4.1 explains that each village has to present their projects to the Power Development Fund:

Local organisations, the Subdistrict Administration Organisation, when considering each village's fund, they send two representatives and from the province. Each village presents their projects. The fund goes to the project's owner.

Two interviewees provided similar information. **D7.1** stated that EGAT did not manage the Power Development Fund and that the Power Development Fund came from an energy tax fund:

EGAT does not interfere with the fund management. EGAT only proposes ideas. How they would put the fund towards the Power Development Fund is ERC's responsibility ... Principally, over 300 million baht of the Power Development Fund, according to rules, EGAT must pay energy fund tax to the fund.

Firstly, **M2.6** acknowledged that EGAT gives money for the Power Development Fund to the Ministry of Energy. Additionally, **M2.6** stated that the Power Development Fund is made up of Thailand's 7 per cent FT (The Automatic Tariff Adjustment). Nevertheless, **M2.6** expressed that villagers were unsure whether the Power Development Fund commissioners wished to help them with development. **M2.6** mentioned that the governor is the president of the Power Development Fund committee and commented that if the Power Development Fund is managed well, the communities should be improved. Further, **M2.6** noted that, in the past, most of how the Power Development Fund was spent was not examined. It was easier for the Power Development Fund to reach the communities, and that the ERC did not exist. Further, **M2.6** expresses it was called the fund around the plant. **M2.6** repeats that, according to the ERC, the villagers did not follow the rules, consequently, it took long for the Power Development Fund to reach the communities, and, in addition, budgets of over 300,000 baht required the provincial committee's involvement (budgets of less than 300,000 baht go to the communities). **M2.6** expressed that villagers wondered if EGAT put the ERC in charge of the Power Development Fund so that villagers would disagree. **M2.6** contended that the Power Development Fund rules made everything slow, and the rules were not created with the villagers' input. **M2.6** added that the Power Development Fund structure was changed in Lampang's former governor's time. Next, **M2.6** revealed that the Power Development Fund for occupation development had started reaching the community. **M2.6** goes on to suggest that there was corruption among the old Power Development Fund committee members:

The Power Development Fund was created by FT 7 per cent of the whole country's electricity consumption. EGAT takes the money and gives it to [the] Ministry of Energy. ERC manages to the fund ... The commissioners are the ones who manage the fund. The government too, the governor is the president of the committee. There's the governor and district, representatives of each village. I don't know if they are honestly trying to help. I heard that the commissioners get several 10Ks a month. We think they only do this to get paid. Some of them hoped to be the commissioner, they must buy votes. 200–300 per person. Why do buy if you need to lose so much money. The money that you think is going to improve the village. How much is that going to develop the village but will go to the same pattern. The last set of committees, went overseas, what benefit do they get? Nothing. They don't need to study overseas. There are so many in our country. ERC said that they can't corrupt anymore. But the villagers know and see. They do not speak, they are fearful. They have invested in getting commissioner positions, they must try to gain money back ... Yes, the Power Development Fund. 360 million. Sometimes villagers wonder why EGAT doesn't manage it or let each village manage, why they must hire the Power Development people, which leads to conflict? They [EGAT] told us it is against the rules. I don't understand. Some groups state that EGAT is doing this so the villagers fight. So we overlook the plant, which lessens the tension between EGAT and the communities. If EGAT wants to solve problems, can't EGAT manage the money itself? If there is budget of 500,000 per tambon, 50,000 per village annually, EGAT should manage so that the budget truly gets to the villagers. It's up to the village if it has good management. If they manage well, then the communities would be improved ... In the past, EGAT didn't give to ERC. I'm confused and I don't understand. They used to just give the fund directly

to Power Development Fund. It used to be called the fund around the plant. Now it is development fund. It was easier in the past. It got to the community quickly but some money was spent and the majority was spent without being examined. The Office of the Auditor General of Thailand couldn't investigate. Now EGAT keeps FT and gives to ERC and goes to the fund ... The budget that is not more than 300,000 gets to the people. They manage themselves but budgets of 300,000 must have provincial committee to manage them too. The rules of the Power Development Fund were not created from the villagers' opinions. It is slow because according to them, the villagers didn't write the projects according to the rules. Before you write up rules, why don't you ask the community? The rules make everything slow. It's not easy like you think at the tambon and provincial levels and the community has headaches. The villagers don't know what tambon and provincial level mean ... The fund starts getting to the community in regards to occupation ... I used to be a commissioner but I quit to be village leader. The old committee was elected, the villagers didn't know, therefore, there was corruption and it was easy to cheat.

Four informants make similar proclamations.

M6 admits that the Mae Moh district office disapproves of many the processes the ERC established, but **M6** contends that the communities have the power, and the Power Development Fund's management is just, transparent and accountable. Another informant conveys a similar stance. **M6** says that there are no new Power Development Fund rules as far as **M6** is aware. However, the new rules could be local new rules. Then, **M6** insists that villagers definitely get to participate in the Power Development Fund decision-making at civil society forums:

Now our manual hasn't 'crystallised'. It has been presented to the board once. The board has approved, we are sending the manual to the district office that has to coordinate, there are several processes that they disagree with. The manual should be all done this year ... The power is with the communities but this is about people there are many groups, many ideologies but some of them, might not crystallise issues. Is there any feedback? I need to go to court to inform the human right commissioners, Senate, House of Representatives everywhere. The Occupational Health Patient Rights Network of Mae Moh complained everywhere or even the Administrative Court, when I prepare the information but with reasons, my processes are just, transparent, accountable and truly distribute the power to the community. They weren't successful with the lawsuit I have information, proof with the documents, photos or the people's signatures when they attended the People's Forums. But when they select any project, they must vote but the majority do not think like they do. So they complained, but things did go according to the rules. They can't agree and want us to interfere. Although, we can't force them ... No new changes ... My side as a national government component, I am just guiding them, educating them on practical side, e.g., they need to have receipts ... There are no new rules, if that is going to happens there must be a public hearing. Maybe it's something local ... It's possible they can't access the fund but certainly, they get to participate. They used the Power Development Fund too. Even though human rights commissioners, senate commissioners, House of Representatives. When they write a project, all the projects must start with public forum to really discover the needs of the people in the area. Their group did propose a project but when they did the rules here distribute the power to the community. They can request what they want through the community, they have the People's Forum. Then it goes through tambon-level committee. This level committee comes from their own election.

M4.2 complained that the Occupational Health Patient Rights Network's demands regarding the Power Development Fund were too much. Furthermore, **M4.2** indicated that when the

Power Development Fund released new rules, it is EGAT's responsibilities to explain them to villagers. **M4.2** stated that the Power Development Fund has a new set of rules, but its old rules were simpler. A point of difference is that the Power Development Fund's new guidelines require proof for expenses:

When I attended the meeting with Energy Committee of the Senate, the president of the committee asked Ms Maliwan's group how they could be helped. The response was that they would like the members to get treatment from the Power Development Fund or Mae Moh EGAT about or over 200,000 baht per person per year. The president asked if the amount is granted would that be their final demand. Her representative said annually until those patients pass away or the Power Development Fund dissolves. This leads to problems in management. It is an attached budget, a lot of patients, requires a massive budget. If this group gets this benefit, others will come running ... They have to dedicate an amount of money to provide funding for taking care of the communities around the plant area ... EGAT already gave the Power Development Fund money. EGAT wants them to receive the money from there. But in certain matters, EGAT has its own budget, if they make a proposal and EGAT approves, then there shouldn't be any problem ... It's EGAT's job to arrange for a speakers' team to explain ... Currently, the Power Development Fund has a new set of rules. Initially, they followed 'Yoodeekindee' of Community Development Department, the old policy did not specify much so it didn't require complicated procedures. The new policy is similar to the government's policy and all the processes need to go according to the rules. In requesting this fund they have to start at the tambon-level committee. Then provincial-level committee is responsible for the arrangement of civil society's forums and consider which projects are good and beneficial and prioritise significance and urgency to present provincial-level committee to consider ... Now they follow the new guidelines, the villagers are used to the old guidelines, which are easy and whatever, no checking. The new guidelines require checking. There are documents and proofs, they must submit. Sometimes there are delays, the villagers accuse the public sector of bullying and not helping by rushing the project. I try to explain that it's not slow from my part. If they have done everything accurately, I'll sign instantly. We must establish understanding. Before, they can only write if they want to buy pigs or build a pavilion and make a proposal and receive the budget. It's just the first year, it's normal ... Nowadays, they have to make a detailed proposal for example, how many poles will be used and how much for each of them, what kind of flooring, roof. Engineers calculate and design. Then from there, use the information to write the contract.

Another interviewee concurred that the Power Development Fund's guidelines specify that proof of expenses must be presented.

M2.4 reported that Lampang ERC manages the Power Development Fund. Furthermore, **M2.4** declared that the law concerning the Power Development Fund had not been passed:

Now, the ERC of Lampang manages the fund. For tambon-level, it is the subcommittee considering community organisation. The real management is the community surrounding the Power Plant Development Commission ... Legally, not everything is lawful and the law that enforces the right way to spend the fund still hasn't been passed.

N30 argued that if the Power Development Fund is well managed, the local residents would love the power plant. On the other hand, if it is not managed well, villagers would try to take money from each other:

Must strengthen the community. Show benefits of the power plant to surrounding communities and Thailand. People's qualities of life are better. Must be widespread. Not better because we give them money. They have better hospitals and schools than other places. Have better water sources, roads and social welfare and the air is not worse than others. Make it possible for people to coexist. Recently, there is the Power Development Fund five kilometre radius surrounding the power plant. If they are doing a good job then the community will love the power plant. If they do not do a good job then the community tries to take money from each other. Depends whether the villagers are good. Villagers consist of those who think well and expect profits.

M3.2 affirmed that village- and provincial-level commissioners manage the fund with commissioners from the public sector. 'Help and cure those who are affected. There is one commissioner per village, then province-level, manage with commissioners from public sector.'

N19 divulged that Ms. Nakwiroj's group surrounded the ERC building to submit the Power Development Fund documents. Furthermore, **N19** admitted that it is very difficult for members from the public sector of the Power Development Fund committee to remain in their positions due to pressure. **N19** informed the researcher that the Power Development Fund assists villagers a number of different ways:

Constitution giving citizens' rights, is it suitable for Thai culture? Relying on mass, sometimes villagers surround the building. Maliwan handed her document in a van ... Mae Moh has its own committees of Energy Policy and Planning Office in which representatives of villagers make up to two out of three ratios. Only one out of three comes from the government to help guide local representatives. The only fund in Thailand that the amount of local members up to two out of three. This committee finds it very hard to cooperate with members from the public sector. They want to quit due to the pressure. Seems like villagers buy things to give away, water filters, tents, pots, chickens, pigs and buffalos. They buy every year instead of letting them give births and share them. The project has everything a lot of basic infrastructure, building roads, water tanks, water filters. Everyone can get drinking water ... Everyone can get drinking water ... The fund covers career development, scholarships for overseas education. If they have health issues, they can send the next generation to study the environment. If hospitals are understaffed, they can send people to medical schools.

M3.4 noted that the Power Development Fund offers 3.5 baht million per village. 'We can get funding from the Power Development Fund but we must create projects; 3.5 million per village, five tambons, 42 villages.'

N28 commented that the Power Development Fund is a fund for complaints and demands from villagers. 'Pollution control, managing impacts [the Power Development Fund], resettlement and expense, compensation, money, resettling fees but demand to stay in the same district and social aspect [occupation].'

M3.5 also repeated the information that EGAT gives support to villagers. In addition, **M3.5** displayed a lack of understanding of the Power Development Fund's new rules. Finally, **M3.5** insisted that the Power Development Fund distribution is only fair for its members:

We still talk. We contact them to ask for what we lack, career support, drinking water in Chalongrat. We do lack in career development. The Power Development Fund, we can access because they give at village level now. We get money this year from 2012. We got the money in 2010 too. We got one water budget that year and two water filters and water tank and long drum for the pavilion. Every village has a long drum club ... Now there is the fund managers that have been elected. I don't understand ... For members, yes. If you're not a member, you don't get the money.

Two other informants also claimed that many people do not have the understanding of the Power Development Fund's new rules. **M3.8** clarified that the Power Development Fund is sufficient if used correctly. 'If we use it right, then yes.' **M3.3** considered that the Power Development Fund was very complicated and thought that the requirement to pay upfront and then claim reimbursement was unreasonable as the villagers do not have the money to pay for things beforehand:

Their system is very complicated. They want the villagers to start first but where are we going to get the money. We must have the receipts and proof so we can claim the expense. I want to fix the wire-broadcasting system. But for me to manage the projects into 2-3 parts so that the budget is under 300,000 and it's very complex.

M2.5 noted that the Power Development Fund has not been given to villagers since 2012. 'The villagers submit projects. Now I only see intangible. I haven't seen tangible yet. Since 2012 until now, there hasn't been one baht. In the process of arguing.' **M3.1** indicated that the Power Development Fund is a part of EGAT's CSR. 'The energy fund has just been established in the past few years. This is a part of CSR.' **D5** also claimed that the Power Development Fund was not appropriate because it comes from taxes:

Honesty from EGAT. We need facts that are true. Second, if they only respond to the major public they are just lying daily. Third, EGAT has taken advantage of resources quite a bit. One hundred billion annually. How are they going to repay the community in the way we deserve from this figure? Not only facilitating the government but the community should get this benefit too. This should not be included in the Power Development Fund because that comes from Thai citizens' tax money.

N19 commented that the Power Development Fund is the only fund in Thailand which local members make up a ratio of two out of three. Additionally, **N19** revealed that villagers spent the Power Development Fund on road and water tanks. 'The only fund in Thailand that the amount of local members up to two out of three ... They spent the money on roads and water tanks.'

M4.1 revealed that local organisations and the Subdistrict Administration Organisation are involved in examining village funds, and that the funding is sent to the project developer:

Local organisations, Subdistrict Administration Organisation when considering each village's fund, they send two representatives and from the province. Each village presents their projects. The fund goes to the project's owner.

M4.3 considers that the Power Development Fund was founded to rehabilitate and assist those affected by EGAT's operation, and for development. Additionally, villagers feel that the Power Development Fund's money is theirs:

It is an old story. They want money from the Power Development Fund. They feel that it's their money. One of the purposes of this fund is to treat the patients that were affected in the past but actually the Power Development Fund is established so that the community gets the money to develop the area around the plant. But these groups want the money to ease the issues from the past. There is still conflict.

Further, this explanation implies that the Occupational Health Patient Rights Network wants funding from the Power Development Fund and that the network receives money from the Power Development Fund for career programmes. Another informant supported this view.

M3.6 indicated that the Power Development Fund's tambon-level committee writes and provides details of projects, and coordinates projects. In addition, it assists villagers in developing projects and is responsible for scoring the projects:

We write and propose projects and provide details, coordinate ... People in the community as representatives. First we propose village's need through villagers' forums. The tambon-level committee helps in making plans and scores each project and sees how they can be achieved.

M3.2 informed the interviewer that the purposes of the Power Development Fund are to rehabilitate and assist those affected by EGAT's operation and that there is one commissioner per village.

According to the quotes in this part of chapter, EGAT formed an extensive funding scheme for Mae Moh villagers. EGAT's efforts have broadened its environmental policy, and this policy was designed to assist it in obtaining the local residents' trust, as well as to seek to prevent future environmental catastrophes. It can be considered that the Power Development Fund is another source of conflict in this case study even though its purpose is to facilitate those who face the impacts of EGAT's operation in Mae Moh. The examination of the role of the fund helps to the understanding EGAT's responses to the conflict.

Walker (2012) sees South-East Asia's modern democracy as a 'political society', where local residents anticipate they can acquire endorsement and protection through cooperation with government programmes. Walker (2012) claims that the government finances rural projects and these projects are viewed as sources of income by associating individuals. In addition, he

(2012) argues that the government also contributes to the construction of various rural infrastructure projects, leading to a marked development of the rural economy. It can be understood that the government supports the residents. Similar to Ban Tiam, Mae Moh villagers try to take part in projects the government sponsors to obtain legitimacy and funding and to form connections with officials, instead of objecting to new development projects.

6.5.8 Environmental policy

Another component EGAT's management strategy in response to the environmental conflict was to develop changes to their environmental policy and to modify their plant operations to reduce negative environmental impacts. EGAT introduced FGD systems and monitoring stations to control and monitor its environmental impacts from its practices to avoid environmental crises in the future and to achieve system integration. The condition of the environment as a result of these systems will be critiqued in this segment.

N27.1 revealed that, in the past, EGAT did not use clean coal. 'Previously we did not use clean energy, the coal was of low quality but we do have backup in Thailand. High stability. No need to order.' **N28** claimed that EGAT was not careful about the environment initially, but that global trends influenced EGAT to become more careful. 'Maybe careless at first but world trends made EGAT do it.'

D7.4 reported that there is a large environmental improvement, even though some of the issues are not completely resolved. 'Much better than before. Air quality, water pollution, smells and explosion. Some of them haven't been fixed completely, such as water explosions.' Eight informants shared similar perspectives.

By contrast, **M4.3** contended that all technical problems relating to environmental degradation have been solved:

All technical problems have been solved ... It takes time to solve. We [EGAT] had to buy equipment, they [villagers] sued us during the solving process. That's why the amount the court ordered EGAT to pay is very different from what they demanded. While there were problems, we reduced the load. We didn't operate to the maximum production power so that sulphur dioxide doesn't exceed the standard. But that happened in 1992. After that before we installed the equipment, we purchased coal with low sulphur, decreased the production power. So that sulphur dioxide doesn't exceed the limit.

One other informant agreed with this.

N30 was also very confident that EGAT's operation now does not create any environmental impacts. 'From now on, there must not be anyone who can accuse EGAT of creating

pollution which they have been avoiding continuously.’ Another interviewee displayed the same confidence in EGAT’s practice.

D6.4 informed that EGAT, along with other organisations, monitored sulphur dioxide online regularly but that engineers did not work towards quality, which is why the environmental crises occurred:

We constantly monitor sulphur dioxide online, several organisations are involved: PCD ... There was a problem with our ancient technology in 1992. EGAT did not know that the technology used cannot control pollution. Engineers did not work towards quality. They worked towards ‘fact’.

Another informant offered a similar account. **M4.2** maintained that EGAT is under the control of the Ministry of Industry and the Ministry of Natural Resources and Environment when it comes to environmental control:

At the moment, EGAT is trying to improve and change. We have controlling standard committee from Ministry of Industry and Ministry of Natural Resources and Environment come to monitor constantly.

M2.4 reported that EGAT improved based on the feedbacks it received:

Yes, they made improvements, for example, when they approach me, if there is an environmental committee meeting in inspecting the conditions of soil dumping area or mine, we test the noise, experience the dust, the burning, the conveyor, spraying system, soil transporting, the speed of the vehicle and the dust in the air. If we find anything, they will bring up in meetings.

M3.4 explained that EGAT would order its contractor to reduce vibration when the villagers complained, but that this was a temporary measure. ‘If vibration is bad, we notify EGAT. EGAT will order the contracted company to tone it down. It only gets better periodically. When we are unaware, it gets worse.’

N20 argued that EGAT tried not to create pollution:

The power plant is trying to filter the dust, growing trees and improving coal transportation. We filter almost 99 per cent, lower than the standard by nature. When FGD systems are broken, they stop.

D7.3 contended that the media misrepresented EGAT’s production as the cause of pollution:

A part of the emission from the exhaust is steam unlike in 1992. Now we use clean fuel gas. On TV, they made it appear like sulphur dioxide rather than steam. They are not 100 per cent honest. When there are gains involved, there are reasons to make it seem so.

M3.8 believed that health concerns were worse in the past and were now minor. ‘Although, when sulphur dioxide leaked in the past, we were affected too. Now, the health concerns are considered minor.’

FGD systems are used to reduce the level of sulphur dioxide gas released into the environment from the exhaust stack. According to a document tendered to the court (2009), EGAT chose a wet FGD system. In such systems the flue gas is wet in a water spray tower and passed through an alkaline slurry (e.g., of lime; calcium hydroxide) where it reacts and precipitates the solid calcium sulphite which drops to the base of the absorber to be collected and utilised as a by-product or disposed of (Environmental Protection Agency viewed 27/06 2014).

D6.4 noted that EGAT installed FGD systems right after the first environmental crisis.

Therefore, there is no more pollution:

After that, we installed FGD systems instantly finished in 1997–1998. The government invested over a billion for one power plant with a consultant company to take care and follow, estimate how many per cent it was effective. Now the consultant company and [the] PCD have proved scientifically that it filters 99.9. After installation, no more pollution.

Five informants provided similar explanations.

M3.3 suggested that FGD systems improved the environment:

First, EGAT didn't install FGD systems. The villagers had to suffer. There are good and bad impacts. Negatives impact is the health issue. Some people died because EGAT did not have systems. No one in my village died, I didn't migrate. After FGD systems installation, it got better. But we do sneeze, our noses are blocked. Could be the weather. It also depends on how healthy a person. Some people are okay.

Two informants shared similar statements. **M4.3** stated that before the FGD systems installation was successful, EGAT relied on reducing its production power and utilising coal with low sulphur dioxide to control the level of sulphur dioxide:

While there were problems, we reduced the load. We didn't operate to the maximum production power so that sulphur dioxide didn't exceed the standard. But that happened in 1992. After that before we installed the equipment, we purchased coal with low sulphur, decreased the production power. So that sulphur dioxide doesn't exceed the limit.

D7.3 maintained that EGAT did not install FGD systems initially but that the desulphurisation systems, and other pollution monitoring equipment, were later installed. Further, **D7.3** mentioned that production would be stopped immediately if the FGD systems broke down and could not be used to control pollution.

FGD systems were installed after ... Initially, short-term policy did not have FGD systems and it was on a daily basis. We looked at weather forecast to determine how much sulphur dioxide could be emitted. After FGD systems installation, the policy is clear. The measures are in details. If FGD systems are broken, production is stopped instantly ... FGD systems have been installed, as well as other pollution monitoring equipment.

Another informant also noted that, in the beginning, EGAT did not have FGD systems installed.

M3.9 was convinced that dust is less of a problem due to the installation of the FGD systems:

For tables, we could draw on tables, if we leave the window opened for a day. It's been better since EGAT installed FGD systems and spraying water. We were suffering from the dust for 5–6 years.

N19 stated that since EGAT installed the FGD systems pollution from the plant had ceased, but pollution now came from the mine:

The power plant does not create that effect but the mine creates dust. Power plant uses clean technology, no pollution, FGD systems have been installed and EGAT has online system.

The pollution originates from the mine. No impact from power plant. Dust could come from digging. We need to discuss academically because some villagers suffered from the pollution and some didn't.

N20 elaborated that EGAT is now careful not to create pollution:

The power plant is trying to filter the dust, growing trees and improving coal transportation. We filter almost 99 per cent, lower than the standard by nature. When FGD systems are broken, they stop.

Another response by EGAT to the environmental conflict is to establish monitoring stations so that the level and content of pollution generated by the plant can be measured. Moreover, **D6.4** confirms that EGAT monitors sulphur dioxide online as quoted previously. Also, three informants agreed that EGAT monitors sulphur dioxide online. **M2.6** highlighted that EGAT's system in controlling pollution was excellent:

There are chronic patients but as a part of monitoring system inspectors, their system is good. There is less sulphur dioxide. They [EGAT] spray water on the mine where they dig the lignite. If they do what we see, it's good. There could also be dust from burning forests.

D7.1 also noted that pollution monitoring stations were installed and that they could be viewed on the PCD's website:

In the past, environment degradation was caused by EGAT. We have 11 controlling stations monitoring the environmental conditions reporting to PCD in real time ... You can look at the PCD's monitor on the website. Anyone can look at it. We adopt transparency, hide nothing. This is after the crisis.

M6 pointed out that there was a monitoring station in front of the plant and that it was always on:

They had academics informing people, the benefits of the plant and coal mine, the environment and proving different pollution indicators. They installed the system in front of the plant, hospital. It's always on. I went to see.

M3.2 noted that villagers were involved in pollution monitoring. 'Perhaps, in the past, EGAT didn't have FGD systems but now they do and appointed to community to participate in environment check.' Two interviewees offered a similar opinion. According to the interviewees, EGAT was awarded for committing to various industrial standards. EGAT staff strongly affirm that EGAT was dedicated to conserving the environment. In addition, villagers accepted that they had noticed an improvement to the environment.

In addition, an EGAT representative testified in court (*Decided case 60-77/2552 and 68/2548 2009*) that EGAT had the ability to control pollution levels:

EGAT can control the air quality standard, sulphur dioxide standard to be in accordance with National Environmental Board and PCD's announcement. As a result, EGAT has been granted a certificate that it operates under Thai Industrial Standards Institute ISO 14001 for coal mining activities and production of charcoal briquettes.

It was explained in the previous chapter that the FGD systems were utilised to decrease the level of sulphur dioxide expelled by the power plant.

According to EGAT's representative in its court case (*Decided case 60-77/2552 and 68/2548 2009*), EGAT had completed installing the systems in all functioning units. Thus, it can be acknowledged that EGAT puts an effort into control the level of sulphur dioxide expelled:

In 1994, EGAT proceeded to install Wettype (sic) FGD systems which are efficient in trapping 92–95 per cent of sulphur dioxide by using lime as an absorbing agent and gypsum is the product of each unit in ten units from Units 4–13 and now the installation is completed and they can function efficiently since February 2000. Units 1–3 have been retired since 1999.

EGAT's representative (*Decided case 60-77/2552 and 68/2548 2009*) informed the Administrative Court that EGAT was capable of keeping pollution levels under the limits set by the law and that the monitoring stations are under the supervision of the PCD:

EGAT installed 12 pollution monitoring stations around the site and the disputed area. The stations will measure the intensity of sulphur dioxide in the atmosphere as specified and report real results every minute. Then signal the production control room and the machine controller must follow the measurement of air condition to facilitate the decision-making in setting Mae Moh power plant's generation power to prevent the level of sulphur dioxide from the limit at all times that EGAT is producing electricity, under the supervision and control of [the] PCD which set up five pollution monitoring stations around the power plant. Moreover, [the] PCD checks the accuracy of the stations once a month. The results from examination and the installation of FGD systems make sulphur dioxide release from 1999 until present considered at levels better than [the] PCD specified and EGAT is able to control the intensity of sulphur dioxide in the atmosphere as well as the amount of electrostatic precipitator around [the] Mae Moh power plant to be lower than the

regulation. As sulphur dioxide and the electrostatic precipitator are within the aforementioned standards, therefore, there are not any impacts on the health of those citizens residing close to the power plant as well as the prosecutors.

Nonetheless, multiple types of pollution still exist. Indirectly, EGAT also brought about social and economic changes which will be discussed next.

6.5.9 Social and economic changes

Not only did EGAT influence social adjustments in Mae Moh, it also shaped economic adjustments. An intentional impact, directed by EGAT, was the employment of local residents. In this way EGAT has had a social and economic impact on the Mae Moh area and its residents. One reason for EGAT to employ local residents was to reduce local opposition to the plant. In addition, EGAT attempted to improve the quality of life of Mae Moh locals in other ways.

6.5.10 Social changes

In this section, examples of how EGAT used its social power are illustrated. **M3.1** explained that a lot of things were now better in Mae Moh. **M3.1** stated that EGAT promoted villagers' health and provided educational and religious support. **M3.1** understood that EGAT tried to compensate villagers by giving them better quality of life:

In the big picture, I think a lot of things are better in Mae Moh when there is a problem, they [EGAT] are quick to take action ... I don't know too much, my job was to look after the staff. I helped with Khatin, Phapa ... Use PR Unit 2. They are smart. They reunited local people to be mechanics, electricians. Local staff helps building understanding and brought other benefits such as Village Health Volunteer Foundation, help in schools, gifts and did good things for the community, arranged mobile doctors, Phapa, Khatin. The villagers appreciate it and this helps relax the tension. EGAT also gives scholarships and so on. The local people also find out what the community needs and EGAT can help fulfil it. Hence, the villagers accept us due to the help too ... They [EGAT] tried to compensate by giving villagers better quality of lives. Nonetheless, their new communities are not as completed as their old lands. Initially, even though they had water, electricity but the land was not ready for making a living. They might be satisfied with the new land.

Seven interviewees expressed similar comments. **M3.2** believed that EGAT brought improvements economically:

The status socially and economically is better, comparing to before it was a suburban society. If someone's rich, they're rich. But now moving here, everyone is equal. Very few poor people. More occupations, more income ... Many ways, the new place is better. We got compensation but less than those who moved after we did. They evaluated the value of our houses and lands. In the past, villagers thought it was worth it but now, there is economy. They should come back and look after us better. From the six rais they gave us, we didn't have water or electricity. Now in some spots, we had solar cells. I just want to come look after the quality our lives.

Other two interviewees demonstrated similar viewpoints. **D6.1** stated that people moved to Mae Moh for jobs. ‘Now Mae Moh residents are not from Mae Moh. People moved here for jobs.’ This outlook is shared by two other informants.

Due to resettlement numerous farmers were removed from their lands. These farmers had to find new jobs to support themselves and their families. However, EGAT now made it a priority to employ local residents before applicants from other areas. Moreover, EGAT created jobs for local residents by attracting more businesses to Mae Moh, which resulted in economic improvements.

D6.4 described EGAT’s process of employing local candidates first:

Initially no one in Mae Moh had an engineering degree. We [EGAT] had to recruit from other areas. They could only become our labourers. EGAT tries to create occupations for them but it is only operational line work. We hired at least three thousands of them. First priority is to employ staff from Mae Moh. Now, they are more qualified, problems with employment are decreasing.

Another informant gave a similar testimony.

M3.1 revealed earlier that employing local staff assists EGAT with understanding local communities:

They are smart. They reunited local people to be mechanics, electricians. These staffs help building understanding and brought other benefits such as Village Health Volunteer Foundation, help in schools, gifts and did good things for the community, arranged mobile doctors, Phapa, Khatin. The villagers appreciate it and this helps relax the tension ... The local people also find out what the communities need and EGAT can help fulfil it. Hence, the villagers accept us due to the help too.

Another interviewee offered a similar opinion. This section demonstrated that EGAT attracted businesses to Mae Moh which gave local residents more job opportunities and stimulated the economy.

EGAT’s establishment in Mae Moh led to both intentional and unintentional differences in Mae Moh. These differences include social changes, economic changes and employment of local labour. The following part of this chapter will scrutinise changes driven by resettlement.

6.5.11 Resettlement

It could be perceived that for resettlement, EGAT exercised its political power. Organisations that EGAT had to collaborate with for relocation are those that rely on taxation income. This leads to the conclusion that political power was required in order to resettle the villagers.

Some villagers were not pleased to be relocated. However, they had to move in order for EGAT to expand its operation. By contrast, some villagers demanded to be resettled. Whether they wanted to be relocated or not, relocation brought changes to the traditional lifestyle. There are both negative and positive views on relocation. They will be examined in this section.

M3.11 indicated that division became more obvious, as did villagers' selfishness, after relocation. Furthermore, **M3.11** noted that villagers had to use piped water after relocation, whereas before they had agricultural lands and access to a year-long natural water supply.

M3.11 also stated that land is an issue for relocated villagers:

I need to adjust to the new society. Everyone used to help each other. After moving, people are more selfish and the division is more obvious. There were divisions before but not as bad as now. In the past, it was easier to make a living. There were vegetables in our water sources. Now, we must have money to get fed. This makes people more selfish. The unity is missing. Not as much as before. EGAT takes good care of the society ... Relocation in the past, we had our own lands. We don't have land after moving. We used to have water all year round. When we live here we have to use pipe water.

Five villagers had similar notions.

Ms. Nakwiroj (2005) disclosed that villagers lost their agricultural lands and could not acquire water of decent quality. As the villagers were not given certificates of ownership over the new land, they were not able to engage in any transactions using their lands:

In addition, villagers had to regrow their crops, for example the mangoes that villagers used to harvest. They have to regrow them from their young plants ... The government and EGAT are insincere in regards to keeping promises in order to relocate villagers. Basic infrastructure is not adequate; e.g., no sewage, water without quality, follow-up, living, delivering certificates of ownership that villagers were promised according to the Cabinet's resolution. However, villagers were relocated into the Royal Forest Department's properties that EGAT leases from deteriorated forests. Currently, villagers are concerned that if the Royal Forest Department wants the lands back, they would need to resettle again and they cannot engage in transactions with their lands.

Vichit-Vadakan (2005) proposed that, in the past, Thai life was based on the foundation of kinship relationships and mutual support. Thus, the appearance that people became more selfish was not necessarily the result of the impact of resettlement itself. Nevertheless, villagers felt more divided as a community due to relocation.

Ratsiri (2008) pointed out that villagers' new lands enable them to pursue their agricultural activities and that EGAT still provides assistance to resettled villagers:

The land arranged by EGAT includes agricultural land and EGAT gives assistance to villagers. EGAT and villagers coexist in a friendly manner. They are no longer paranoid of each other and they are finished with lawsuits.

M3.2 stated that EGAT prepared for lands for villagers, and that resettlement was the cause of a discontinuation of the traditional lifestyle:

The impact is that the old lifestyle of the community is gone. Traditionally, our occupation was agriculture and we had land to do so. After moving here, EGAT arranged for accommodation for us. One rai and those who had agricultural land got six rais but everyone received this accommodation and lands for agriculture.

M3.1 informed the interviewer that, compared to Chiewlang, Mae Moh's new parcels of land for villagers were not as well prepared:

I was assigned to two big projects. Chiewlang Dam, they managed better than Mae Moh. I understand NGOs share information between projects of EGAT ... I knew since the beginning there. Where the villagers stayed, they created quite complete land, grew them 15 rais of rubber trees and one rai for their houses and paid for maintenance of the trees up to 3–5 years. When the trees grew, they had income. But for Mae Moh, the villagers still couldn't make a living. The government did not invest enough. The land wasn't ready for them to continue their agricultural activities but maybe it was because the land is not facilitating, but in the south, they prepared the land, deforested and planted rubber trees. In five years, when people moved from one place, they might have been fishermen or grown rambutan, durians and adapted to rubber tree farm, they could live. The resistance from Chiewlang is low because they received enough help with their occupations. But in Mae Moh, at first, they didn't see this model. They saw Pakmool's model. Their villages were affected by fishing and so on. Or know that Chiewlang got more than them. They felt they didn't get enough of what they deserved.

Despite the intentions of EGAT to obtain local support for their plant through CSR, and other local and economic improvement strategies, EGAT was not able to completely eliminate negative impacts on some Mae Moh locals. Some were forced to relocate. Moreover, EGAT continued to have environmental impacts such as deforestation dust, odour and the impact of the problems with local water storage.

M3.4 was critical that no one moved in to replace the villagers that left and that relocation led to division:

Less people in the village. Now only 85 households. No one moved in to replace. First time, 970 households moved. They are now in Maimongkol Moo 10. Second time, they went to Lanna 370 households. Hang Hung had been relocated twice. My relatives moved too. We're divided now.

M4.1 understood that after some villagers resettled, others want to resettle as well to avoid separating the community:

There are problems with migrating villagers nearby, Hang Hung or Baan Dong with the reason that in the past they encouraged the villagers to move but after some have moved, the rest 20–30 per

cent wants to move too. They claimed that the community had been divided, so they want to follow their families and friends.

Another informant had a similar view.

Further, Ms. Nakwiroj expressed in an interview (Decha 2005) that resettlement separates villagers from their families and friends:

The last impact villagers face is relocating out of their own residences because EGAT needs the lands for mining which requires villagers to resettle and associate with neighbours they are not familiar with. This creates complex governance problems.

M3.4 reported that, because of relocation, there are fewer people in villages. Moreover, **M3.4** states that he/she did not relocate and that EGAT did not expropriate lands and this led to deserted areas:

Less people in the village. Now only 85 households. No one moved in to replace. First time, 970 households moved. They are now in Maimongkol Moo 10. Second time, they went to Lanna 370 households. Hang Hung had been relocated twice. My relatives moved too. We're divided now ... the community because certain things are not there yet. Hang Hung needs water for vegetables and we have only households. We lost everything. We have a lot of space because those who relocated, EGAT did not expropriate the lands. We have deserted spaces. Hard for the village to improve because we do not have a lot of people. I want EGAT to adjust our landscape so it looks good. I want EGAT to support our occupation and recruit people in the community. Everything with utility of the community.

Ms. Nakwiroj (2004) complained that there were vacant spaces where the villagers had moved out. 'Now, we have to remove from the relocation list more than 120 deserted houses and land plots in Baan Huay King.'

M3.1 explained that conflict occurred because some villagers did not want to resettle and abandon their homes and agricultural lands but were made to because EGAT needed their land. **M3.1** noted that the relocation in Mae Moh did not work well as the new land EGAT had arranged for the villagers was not close to water sources and had poor soils. Additionally, villagers who previously relied on agricultural activities had to make serious adjustments. Finally, they are not capable of creating income from the monetary compensation provided.

First, compensation for villagers that had to move from the area that EGAT must use. They have conflicts because the villagers didn't want to move. They had to give up their homes and agricultural lands ... EGAT's own problem-solving is okay but still not very good. EGAT was lucky that in the beginning, the villagers didn't have too much information, didn't have strong reactions. Once they heard information from other areas, they realised that their struggles are not worth it. EGAT still didn't have a good system to manage that. Especially, in managing agricultural land, I think EGAT is not very efficient in Mae Moh. The land isn't close to water sources. They should have built new schools, a district office. In addition, I think EGAT didn't select land with nutritious soil for villagers to conduct agricultural activities. EGAT might have thought it was better because the land provided is close to the main roads. If it were up to me, I

would choose the land just like the old ones. So they could continue with their occupation. If they used the same model as Chiewlang, they would have already planted the same type of trees for the villagers in the same amount. If EGAT had chosen to use this model, they [villagers] wouldn't have to struggle with changing occupations. But in reality, they need to get new occupations, hard for them to adjust. If you pay the villagers, they do not have financial consultants, they would spend money and give to their children. This is the weakness because they have never received big chunks of money before and that's why they are not capable of creating income from that money. EGAT should consider all facets, not only moving villagers. EGAT thought just moving and paying them once was enough but their circle of life must survive. They should be able to continue with their agricultural activities. If not, EGAT should provide them with assistance in starting a new one.

Similar viewpoints were expressed by four other informants.

M3.12 acknowledged that EGAT paid removal fees and that it took a long time for some villagers to find new jobs. Furthermore, **M3.12** said that relocation caused the loss of unity in his/her community: 'The whole village moved. We moved in with two other villages, Mohlaung and Monkluay. Took me long to get a job. We had to finish building our house. EGAT gave me removal fee.'

Also, Ms. Nakwiroj explained that relocation brought problems for local villagers (Decha 2005):

In conclusion, the government and EGAT are insincere when it comes to relocation. The government and EGAT did not fulfil their promise about basic infrastructure as they are not adequate; for example, no sewage system, the water cannot be drunk because it is solid, the assistance, the survival, the delivery of certificates of ownership as the Cabinet promised. But it turns out that villagers are relocated into the Royal Forest Department that EGAT leased from deteriorated forest. Now, villagers are worried that if the Royal Forest Department would like the lands back, they have to relocate again and they do not exercise their rights by using certificates of ownership to engage in other transactions.

In regards to resettling villagers, initially, EGAT resettled 493 families out of their original land according to Cabinet's resolution on 15 January 2008. However, nowadays villagers still have not received certificates of ownership for their lands and they are resettled on the lands of the Royal Forest Department. This made all the villagers worry because they are afraid they would be chased out of their lands.

The lands that villagers were resettled on are the lands of the Royal Forest Department that EGAT leased to accommodate those that are affected by the impacts of electricity production. When we [villagers] examine the Cabinet's resolution of 15 January 2008, it states that we would be given certificates of ownership after relocation. Nevertheless, when villagers ask EGAT about this, EGAT told us that the certificates have been returned to the Royal Forest Department. When villagers ask the Royal Forest Department, the Royal Forest Department responded that the certificates have not been received. In summary, villagers are lied to about certificates of ownership.

The last impact that villagers face is that we had to relocate because [EGAT] needs the lands for mining. As a result, familiar communities have to live on new lands, new neighbours that they are not used to and bring complicated administrative problems and villagers have to replant plants such as jackfruit and mangoes that villagers used to be able to eat seasonally.

In addition, the news article (Decha 2005) confirmed that resettled villagers had not received their title deeds and that some villagers resettled in the Royal Forest Department's lands:

In regards to resettling villagers, initially, EGAT resettled 493 families out of their original lands according to Cabinet's resolution of 15 January 2008. However, nowadays villagers still have not received certificates of ownership for their lands and they are resettled on the lands of the Royal Forest Department. This made all the villagers worry because they are afraid they would be chased out of their lands.

M3.12 further reported that the government helped villagers who lost their lands from relocation:

Yes, I lost my farm and land but the government helps. We also lost the unity in our community. Now we are more distant. We didn't need the work and we could feed ourselves. When there were funerals we helped each other. Here, no more farms. Everyone must have a job. Those that could adapt are civil servants, soldiers, police, nurses and teachers. EGAT tried to create jobs for us.

A similar statement is provided by another informant.

D7.3 agreed that land was an issue. 'There are also problems with land and resettlement.'

M3.8 reported that deforestation was a major problem in Mae Moh due to resettlement.

'People deforest continuously. But it's not so bad we can't live.' Moreover, **M3.8** noted that Pongchai villagers suffered the same impacts as resettled villagers:

However, we do experience the impact every day from the environment. People have been moved here. They [villagers] come and destroy the environment. For example, Wiengkong that moved here. It is the path that water travels to Pongchai. I remember in 2001, it rained and the tank exploded. The water flooded in Pongchai because Wiengkong didn't have good management. It's where the stream shifts. There are consequences because normally, there is capillary water flowing throughout rainy and dry season.

M2.6 explained that some relocated villagers in Chalongrat returned to Baan Dong to make a living:

The latest issue: relocation from Baan Dong, EGAT organised for relocation, they moved to Chalongrat. This is just a group of villagers making demands but after moving they couldn't make a living and went back to Baan Dong.

M3.10 stated that those who requested to be resettled, after resettlement, still wanted to receive the same compensation as those who stayed in Mae Moh, thus division was caused by resettlement. In addition, some relocated villagers still had not received the Certificate of Utilisations for their lands:

There are divisions between groups. Some people have been moved out of tambon Mae Moh according to their requests but still would like to get the budget that us in Mae Moh receive ... It is realistic but the missing part is Certificate of Utilisation [N S 3 K document] or title deeds.

Ms. Nakwiroj revealed in an interview with Prachathai (2005) that villagers were worried they would be chased out of the new lands. Moreover, they felt that the government lied to them:

In case of resettlement, initially, EGAT relocated 493 families from their old residence as per Cabinet's resolution of 15 March 2008. Villagers were promised certificates of ownership. After resettlement, when villagers inquired about the certificates, EGAT staff told the villagers that they were sent back to the Royal Forest Department. When the villagers asked the Royal Forest Department, they are told that the Royal Forest Department has not received them. In conclusion, the villagers are lied to concerning the certificates.

M3.1 conveyed that villagers who resettled because of the Sirikit Dam project also did not have any rights to the lands they received:

Second is Sirikit Dam. Some people around these projects are still not satisfied. For example, when they asked the Royal Forest Department to find them lands. They didn't get any rights. The Sirikit Dam people started complaining.

On the other hand, **M3.13**, a villager, argued that relocation gave **M3.13** and his/her family a better quality of life. 'My life is better after relocation. The family's status is better.'

M3.5 revealed that dust is no longer a problem due to relocation and they no longer see a need to protest. Additionally, **M3.5** divulged that EGAT still communicates with relocated villagers, villagers are taken good care of by EGAT staff and that they contact EGAT when they need something. On another note, **M3.5** is content that the new village is close to the community in distance:

Dust, severe. In the past, measure to prevent is not as serious as now. If houses don't have ceilings, we will wake up with dry throats. That's in the past. After moving. It's not a problem anymore. No more protesting because we asked them to move us and it's done ... We still talk. We [villagers] contact them [EGAT] to ask for what we lack, career support, drinking water in Chalongrat ... My village had to migrate they had to take care. They take care of us well. The community relations came to notify management. If we need anything, we contact and coordinate. Ask for help, they help us to a certain point. They can't do everything for us ... After migrating here, the allergic reaction barely happens. I have moved here for five years. Lifestyle didn't change. I do not do farming and my husband has a job. The new place is close to the community.

Another informant had a similar opinion.

M3.9 felt that dust was a serious issue before resettlement but that they still have health issues:

Bad because we lived close to Plant 12, 13, my oldest child still has respiratory problem. He has allergies and blood defect. But we never complained, we think we moved here and the father works for EGAT. For tables, we could draw on the table. If we leave the window opened for a day. It's been better since EGAT installed FGD systems and spraying water. We were suffering from the dust for 5-6 years.

M3.11 admitted that relocated villagers still could sense the odour in winter and dust is still an issue, although villagers no longer experience nose burns:

So much dust before. Still some dust now. I moved very far. Eight kilometres away from the mine. I only sense the odour in winter when air pressure is low. Even in my new house. Not a lot like the old house. I didn't feel my nose burning or anything.

N28 viewed resettlement as a complaint and demand from villagers: 'Pollution control, managing impacts [Power Development Fund], resettlement and expense, compensation, money, resettling fees but demand to stay in the same district and social aspect [occupation].'

Two other interviewees shared similar point of view.

M3.12 acknowledged that EGAT gave money to villagers in accordance to their land sizes. 'For removal. If you had a big land, you get a big chunk of money.' **M3.5** expressed that monetary compensation for relocation was distributed through district offices and was divided into three phases to keep villagers from spending all of it at once:

Mostly, it's money from EGAT through different districts. So we don't know how the government is compensating us. The money through the district is the migrating money. The migration money is divided into three payments: first, basic structure, house structure, second, we have roof, third, we finish building, receiving the last chunk of money. For example, if the valuator says the house costs 500,000 baht, that amount will be divided.

M3.12 disclosed that EGAT would do almost anything for villagers to relocate so that it could expand its operation.

They do mostly anything. Before we moved, we had an agreement with 17 demands ... No, people from Mohluang sacrificed for people all over the country so they can use electricity. We think that it's for the country's civilisation. They had been operating since before they asked us to move. No pollution before we moved.

M3.2 noted that his village was the first village to be resettled, in 1982 and it had been situated next to generating units 1–3. 'My village is a migrated village since 1982 from the village right next to Units 1, 2 and 3. It was the first to be migrated.' Moreover, **M3.2** also noted that different villages were combined together after resettlement. 'There was lignite under the village. They moved us to dig. In the past, there were Nakham, Tapraton, Napom, altogether three villages. Now we all are in the same village.' Next, **M3.2** addressed that villagers who used to live next to Units 1–3 relocated five kilometres away. 'I used to live next to Units 1–3. Now I'm five kilometres away but still in the Mae Moh district.'

M3.5 declared that the government helped villagers who asked to move by providing information and coordinating the relocations: 'Yes, the government helped with talking,

coordinating and building understanding. We asked to move.’ **D6.1** informed the interviewer that villagers from villages nearby requested to relocate. ‘Two–three villages nearby asked for relocation.’ **M2.4** implied that relocation is still not over:

The problems haven’t been fixed. Migration is still not over, Cabinet resolution, the Cabinet hasn’t had any meetings. The patients still haven’t seen doctors, proving rights and so on. Royalty mining budget tax, we still haven’t received.

M3.13 indicated that he/she was satisfied with the land provided by EGAT. ‘I end up with a house and land one rai, three ngans. Not sure from EGAT or the government. I’m satisfied.’

N19 stated that villagers demanded to receive the same amount of compensation after resettlement:

Many things from representative selection, village tambon already complained. So did the five kilometres area. The people outside that area want it to expand therefore, we need to discuss academic results or villagers are going to disagree among each other.

M3.6 acknowledged that villagers would like to resettle, however, **M3.6** failed to see a reason for resettlement. In addition, **M3.6** declared that villagers who were farmers before relocation had to get new jobs:

About migrating, they want to migrate, but there are no reasons for them to move ... Many aspects. My husband has a job with the mine. Impacts in the community, they give us budget for improving the village. Impacts on lands, accommodation and agricultural lands.

M3.8 acknowledged that relocation did not give villagers great lives:

People think differently. I’m in the area. I know what area is like in each season. For example, people that are actually from Huay King, they won’t migrate. They would feel bad leaving their lands. Not like they have great lives after relocating.

D7.2 suggested that EGAT must relocate villagers out of the five kilometre radius to stop villagers from complaining. ‘We must migrate every one out of the five kilometre radius. There shouldn’t be any communities there because if there are then they won’t stop complaining.’ **D5** added that some affected villagers have not been relocated. ‘Problems from the past have not been solved. Villagers that have been affected were alarmed. Some have not migrated.’ **M3.3** reported that some villagers would like to relocate because some environmental impacts are stronger in winter. ‘In regards to health, some of the villagers want to move because the impact is the worst in winter. The air pressure is low and the smell is strong.’

M3.4 noted that EGAT only compensated villagers who resettled. ‘We never get any compensation. Only those who relocated.’ **D7.2** believes that resettlement was an excuse to

receive monetary compensation for job searches. ‘One wants to move, the other doesn’t. Those who migrated received money to start a new occupation. Some don’t wish to move. Not sure if that’s an excuse.’ **N30** advocated that resettlement was a major demand but that it was likely those villagers would rather receive monetary compensation than relocate:

Another demand is for moving. There are 1,300 households next to the mine. They claim they want to move but it seems like they would rather get paid than really want to relocate. I want a middle man to determine the right measures to reimburse. They are demanding things using past incidents and being unfair to EGAT resulting in the rise of electricity fees.

M3.11 thought that villagers received money for their trees and land from resettlement from EGAT, not the government. ‘Money for land, trees. All this from EGAT. Nothing from the government.’

M3.6 stated that expropriated lands were used as accommodation for EGAT workers, traffic paths and for mining. **M3.6** elaborated that deserted properties that belonged to the second set of villagers who resettled created puddles, attracted mosquitoes and provided shelter for thieves. Additionally, villagers cannot commit to anything permanent on their lands. Lastly, **M3.6** noted that Hang Hung had demanded EGAT buy their (the villagers’) land in the village:

The lands that they expropriated they use as accommodation for workers of EGAT’s contracted company ... Now it is mine and traffic path ... There is no expropriation. Now for the second time they are still their lands. They have full rights and this affects us in the old village. They became empty, deserted places, there are trees and leaves that we must manage pollution. Sometimes, rainy season, there are puddles. We don’t take care sometimes there are mosquitoes here. Sometimes the space is wide. Our house is left little. The space is the same. There are blind spots. Thieves. We can’t take care thoroughly ... We are demanding for EGAT to take the deserted lands in my village. They want EGAT to buy their lands. The land is now villagers’, they can go back and grow trees but they can’t build anything permanent. But condition of the second round of migration is they want the government to buy their lands so they have money.

M3.9 endorsed that old lands have not been expropriated and some villagers still have not received title deeds:

Some groups might be pleased but for groups that stay in Royal Forest Department’s domains, we have no problem. We might know that there are no title deeds. The new land that EGAT arranged, I already have it. But I bought land for constructing a house in Wiengsawan. Still haven’t received my title deeds. The whole village hasn’t received ours yet. Not stable yet. I already paid but the old land hasn’t been revoked.

From the quotes, it can be deduced that resettlement led to both negative and positive changes for villagers. For those who relied on agriculture prior to relocation, they ended up losing their lands. On the other hand, those who did not often preferred their new homes due to their

better location. Apart from granting villagers' demands by assisting villagers in relocation, EGAT also responded to the environmental conflict in other ways, as outlined in earlier.

6.6 Conclusion

This chapter has investigated three key themes identified from this research's fieldwork: pollution, villagers' demands and EGAT's responses to the environmental dispute. The evidence presented in this thesis demonstrates that the EGAT plant has created sulphur dioxide, dust, water pollution, noise, smoke, deforestation and vibration from its electricity production. These types of pollution led local villagers to become concerned for their health. Based on the adverse impacts, villagers started making demands to EGAT. The demands included environmental improvement, medical assistance, relocation, monetary compensation, representative selection and welfare. The villagers' approaches to making demands are both peaceful and non-peaceful.

Despite extensive demands, the overall attitude of local residents towards Mae Moh EGAT is acceptance. As 2.6 expressed, his/her group no longer wished to band together to make demands after receiving compensation. However, from interviewing a local politician, there is an impression that the people or groups that make demands on EGAT are mainly after financial gains rather than real concerns for the community. With regard to making demands, it was demonstrated that villagers received desirable results when they made a public problem, such as by blocking roads, which forces the public sector to resolve the issue. This has become the norm for Thai civil society.

It can be noted that the patron-client system still dominates Thai society, but in a different form in today's democracy, as supported by literature by Vichit-Vadakan (2005). As a result, it appears that EGAT would rather invest in obtaining approval from the locals than in improving pollution management. An interesting characteristic of villagers' demands was that they wished to migrate but only within the Mae Moh district. One possible reason is that as long as they remain in the same district, they can still access the compensation from the Power Development Fund and other forms of assistance from EGAT.

In order to earn acceptance from the Mae Moh residents after the environmental crises, EGAT initiated several funding schemes. Counterintuitively, they became more reasons for villagers to disapprove of EGAT. This issue will be examined further in the research question chapter. Another effort made by EGAT was to form relationships with local residents. The voluntary unit, which took care of EGAT's after-process CSR, was an important in helping

EGAT accomplish this goal. Another obvious change was the big project that EGAT facilitated for the well-being of Mae Moh, resettlement. Resettlement was an element that altered villagers' lifestyles, which again provided villagers with more reasons to criticise EGAT. The next change the villagers mentioned was the decreased in the level of pollution in Mae Moh. While some thought pollution a minor issue in Mae Moh, some still regarded it as a major concern.

Generally, EGAT is accepted by villagers in Mae Moh. It has invested a significant level of effort into building relationships with the local communities and fulfilling the demands of those who resided in Mae Moh. Nevertheless, these initiatives also became a source of criticisms of EGAT. This aspect will be explored further in the research question chapter. These themes have provided a thorough understanding to the Mae Moh power plant conflict, and offer answers to the research questions as they address issues such as pollution, the villagers' demands and EGAT's responses.

7 Discussion

The aim of this chapter is to discuss the major findings of the thesis. More specifically, the aim is to weave the primary and secondary data collected for this thesis with the background, literature review and theoretical discussion that preceded it. In this chapter the primary and secondary research questions raised in Chapter 1 of this thesis are revisited in light of the theoretical framework of political ecology adopted for this thesis to analyse the data collected from informants on all sides of the environmental conflict at Mae Moh presented in Chapter 6. The secondary research questions are addressed in turn before the evidence and findings of the primary research question are addressed at the end of this chapter.

7.1 *Subsidiary Research Question 1*

What were the environmental impacts of the EGAT power station on the residents of Mae Moh and how did they respond?

This research question investigates the environmental impacts EGAT caused for Mae Moh residents. The EGAT Mae Moh power plant is believed to be responsible for various types of pollution, including sulphur dioxide, water pollution, noise, dust, odour, vibration and smoke, as mentioned in the previous chapter. The testimonies concerning these types of pollution are addressed in previous chapters. The pollution as a consequence of EGAT's operation will be reported briefly in this section. Additionally, in order to investigate how villagers responded to the conflict, it is helpful to delve into their responses.

7.1.1 Sulphur dioxide

Sulphur dioxide is the type of pollution which villagers are most concerned about because it was the root of the environmental crises in 1992 and 1998 (Greenpeace 2005). After the first environmental crisis in 1992, believed to be caused by Mae Moh EGAT, where EGAT turned on all 11 power generating units and only days after, villagers in a seven-kilometre radius developed breathing problems, nausea, dizziness, and inflammation of the eyes and nasal cavities from inhaling sulphur dioxide (Boonlong 2011).

When EGAT first established its operation in Mae Moh, the FGD systems were not installed to diminish the levels of sulphur dioxide emitted. It was reported that 20 villagers had passed away from being exposed to sulphur dioxide (ASTV ผู้จัดการออนไลน์ 2014a). The researcher was informed that sulphur dioxide damaged the crops and, for this reason, villagers had to buy

vegetables. Furthermore, it was raised that sulphur dioxide was not eliminated, but just distributed in areas further from the power station.

7.1.2 Dust

Dust was described as terrible in the past. Recently, the situation has improved. Nonetheless, it is an ongoing problem. It was explained that dust came from the mine. Further, dust was a part of the reason why the Occupational Health Patient Rights Network filed a lawsuit against EGAT. On the other hand, some accused the villagers of creating the dust rather than EGAT.

7.1.3 Water sources

EGAT was blamed for creating water pollution as well as destroying water sources. Moreover, as a result of water pollution, local fish were no longer edible. Villagers had to adapt their ways of life accordingly. In addition, villagers had to depend on EGAT to provide them with clean water. An EGAT staff member disclosed that EGAT is not concerned if it pollutes water, as the level of pollution is lower than the national standard. Furthermore, it would take a large budget to sort out the water pollution. It can be understood that EGAT does not treat the water because it understands that as long as any pollution is within the legal standard, it is satisfactory.

7.1.4 Noise

Noise was a type of pollution that occurred daily and it was ongoing, as was the case with dust. Regardless, it is depicted as tolerable. It was suggested by a village leader that EGAT could decrease the noise annoyance by stopping the production after midnight. Additionally, EGAT was criticised for lacking a noise control method. However, an EGAT staff member stated that villagers complained about noise late in the process. The informant elaborated that there tends to be a new type of pollution arise once EGAT manages to resolve existing issues. In addition, it was proposed that villagers' claims about various types of pollution were used as excuses to request to be relocated.

7.1.5 Vibration

Vibration led to damage to villagers' houses. Additionally, it was still occurring every day. A villager revealed that if villagers made complaints to EGAT regarding vibration, the vibration would stop for a while and then reoccur.

7.1.6 Odour

Like other types of pollution, odour created a daily annoyance. The origins of the odour are EGAT's mine and water tanks. Explosions in the mine, as well as poor maintenance of water tanks, are responsible for the odour. Villagers indicated that it is problematic during winter for resettled villagers. Further, EGAT did not have a measure for controlling odour in the past. Now the level of odour is considered lessened. A villager stated that the odour issue is bearable.

7.1.7 Deforestation

The data concerning deforestation is limited. Nonetheless, it is required for mining in the case study. Additionally, it could cause negative changes in the environment.

7.1.8 Smoke

Smoke was a current issue in Mae Moh. It was debated whether smoke was the result of the power plant or bushfires. EGAT clarified that its power generating units emit steam rather than smoke. At the same time, the media claimed that it was smoke.

Different types of pollution have different impacts on the villagers. Moreover, villagers have different responses to the pollution. Some villagers responded to the environmental impacts more peacefully than others. The following component of the chapter will examine their responses.

7.1.9 Villagers' responses

The environmental impacts motivated villagers to react to them differently. The responses from villagers included seeking medical attention, making complaints, demands, protests, contacting EGAT, developing health concerns and lawsuits. The health concerns were directly related to the environmental degradation in Mae Moh. This issue was investigated earlier in the fieldwork chapter. Many villagers struggled with respiratory difficulties due to sulphur dioxide and the older villagers who had experienced the environmental crises in the past still remembered those incidents and were still worried.

Due to the impacts of sulphur dioxide, **M2.6** explained that villagers went to consult doctors; however, a villager lost their life from being exposed to sulphur dioxide. In addition, **M4.1** elaborated that some villagers decided to file a lawsuit against EGAT due to various types of pollution. **M3.3** indicated that village leaders must coordinate with EGAT to solve the water pollution issue. It was implied that EGAT was not determined in resolving this issue. **M3.4**

described that villagers needed to notify the village leaders of all problems so that documents could be submitted to EGAT.

Moreover, many villagers made complaints regarding compensation. In one case, **D5** provided an account in the fieldwork chapter of his/her group filing a lawsuit against EGAT. Baan Dong village protested for a soil dumping tax, according to **M2.4**. Furthermore, some villagers formed alliances with the Occupational Health Patient Rights Network in order to obtain satisfactory responses from EGAT. Additionally, road blocking was an approach that villagers adopted to get their message across.

The complaints also covered issues such as employment, medical assistance, resettlement, the Power Development Fund, crop damage, environmental impacts and damage to their land holdings. **M3.4** elaborated that villagers notified EGAT in response to various annoyances arising from EGAT's operations. **D7.4** reported that villagers submitted documents to convey their complaints.

Next, the villagers' reaction by making demands is explored. This matter was scrutinised in the fieldwork and secondary data chapters. As discussed in those chapters, their demands involved the environment, medical assistance, resettlement, monetary compensation, assistance, employment, representative selection and welfare.

The demands were expressed through several means. These approaches can be considered peaceful and non-peaceful. Peaceful approaches are those made through leaders, documents, phone calls and participation with EGAT. Non-peaceful methods are those associated with roadblocks, protests and cooperation with the Occupational Health Patient Rights Network.

Sulphur dioxide, water pollution, noise, dust, odour, vibration, deforestation and smoke are considered to be the outcomes of EGAT's operation in Mae Moh. The pollution has created difficulties in villagers' lives, caused health problems for them and their livestock and destroyed their houses and plants.

Villagers responded to the environmental impacts in various ways. Some did not seek the involvement of a third party, while some did. Expanding on this, some villagers reached out to EGAT to resolve the issues while other villagers requested assistance from doctors, the Occupational Health Patient Rights Network, authoritative figures and the Administrative Court. In addition, some villagers protested to stimulate responses from EGAT. Methods that make an issue a public concern are recognised as efficient, as EGAT tended to give villagers

what they demanded in order to limit the public obstruction. These reactions to the environmental impacts influence EGAT's strategy as a response. Key changes from EGAT management and unintentional changes from EGAT's establishment will be discussed in the next research question.

7.2 *Subsidiary Research Question 2*

What key management changes and other responses did EGAT bring to Mae Moh in response to the environmental conflict?

EGAT's responses were explored thoroughly in the fieldwork and secondary data chapters. EGAT has responded to the environmental conflict through a broad range of approaches. These approaches cover EGAT's attempts to build trust, understanding and relationships with local communities, provide funding and institute environmental improvements.

7.2.1 Trust, understanding and relationships

EGAT attempted to build relationships, understanding and trust with Mae Moh residents by interacting more with local communities, establishing a voluntary unit to look after the surrounding communities, adopting CSR to ensure the public that it was mindful of its environmental impacts, participating in local events to be perceived as a part of Mae Moh, rotating its staff who associated with local residents, organising 'open houses' to demonstrate its production process, providing medical assistance to those in need and employing the media to publicise their CSR projects and that the environment in Mae Moh was of good quality.

7.2.2 Funding

In an effort to manage the level of pollution after the environmental crises, laws were passed to prevent future crises and compensate the local communities, including the National Environmental Quality Act 1992, which directly affected EGAT's operation (which will be discussed in the next section) and the Energy Industry Act 2007, which led to the establishment of the Power Development Fund. Moreover, EGAT founded the PDA and the Mae Moh Development Association to offer funding to Mae Moh residents for the benefit of the communities, as well as accommodating those who were affected by its operations. The details of each funding institution were given in the fieldwork chapter. Additionally, EGAT also granted money to local communities in Mae Moh for special purposes.

7.2.3 Environmental policy

As mentioned in the previous component, the National Environmental Quality Act 1992 directly influenced EGAT's activities because it required EGAT to adapt its production processes in order to lower the pollution emitted (PCD 2004).

Additionally, in order to prevent the environmental crises from occurring in the future, EGAT has improved its environmental performance by installing FGD systems to reduce the levels of sulphur dioxide expelled by the power plant. Further, EGAT installed pollution monitoring stations to assist in pollution control in collaboration with the PCD under the standards set by the Office of National Environmental Board (EGAT 2015a). These efforts could also assist EGAT in obtaining the trust of local villagers.

7.2.4 Social and economic changes

Social and economic changes include those that are intentional and unintentional. Moreover, they are irrelevant to managerial changes. EGAT's establishment in Mae Moh led the villagers to make adjustments to their lifestyles. Some villagers believed that several things were improved in Mae Moh. Some claim that EGAT offered educational, religious and career support as well as health promotion. Furthermore, some perceived that EGAT brought economic improvements to the area. Consequently, there was a diversity of opinion in Mae Moh as people moved to the area seeking employment. In addition, it was understood that it was EGAT's policy to give priority to employing those from Mae Moh first, before considering other candidates. In turn, EGAT's local staff helped EGAT understand the needs of the local communities.

7.2.5 Resettlement

EGAT had to relocate some people to villages further from its site to avoid the environmental impact of its operations. Moreover, some villagers had to move in order for EGAT to expand its enterprise. Others resettled due to other reasons. Hence, some villagers had to move against their wishes. Nevertheless, EGAT relocated many of the villagers for their safety.

With the villagers' safety in mind, there were some undesirable effects from resettlement. First, villagers had to change their lifestyles. Numerous villagers had to give up their agricultural activities as their core occupation because they were not granted appropriate lands for such activities. They could no longer find food from the forests. The fact that they needed to exchange money for food made them more selfish, according to **M3.11**.

Second, villagers indicated that resettlement caused difficulties. They argued that some villagers moved out of the village while some chose to remain, and this created division among local communities. As a result, some would like to resettle to follow their families and friends. For villagers who decided to stay in the area, there were deserted plots of land as EGAT did not expropriate these lands. This issue will be elaborated shortly. Additionally, it was reported that it took a long time for villagers to find new jobs due to the loss of their agricultural lands, and some villagers decided to return to their old lands to pursue agricultural activities. Moreover, some villagers still encountered the impacts of pollution and some relocated villagers had not been given the Certificate of Utilisation for their land.

On the other hand, some villagers considered that resettlement provided them with a better quality of life. They argued that they no longer experienced, or experienced fewer, environmental impacts after resettlement. As an outcome, they had no reasons to protest according to **M3.5**. It was acknowledged that EGAT staff still interacted with resettled villagers and they still took good care of them. Moreover, some villagers were pleased that their new land was not far from their communities.

Next, some villagers misunderstood EGAT's authorities and had problems with EGAT, as they understood that EGAT did not approve their requests to relocate.

Regardless, EGAT's efforts in facilitating the resettlement were appreciated by the residents. For villagers who had large areas of land, EGAT awarded them with monetary compensation in accordance with their land size. This compensation was offered through district offices and the compensation was distributed in three stages.

In addition, it was noted that some villagers living close to EGAT's site requested to be resettled. Further, it was realised that some villagers did not experience any pollution but that EGAT still put a lot of effort into persuading them to relocate. The government was also responsible for coordinating with the villagers in order to assist the progress of relocation. The resettlement combined villagers from different villages together. Some villagers were resettled five kilometres away from their original addresses but still remained in the Mae Moh district.

From EGAT's point of view, relocation could be regarded as a solution to the environmental impacts of their industry. In order to prevent villagers from complaining, EGAT relocated the villagers five kilometres away from EGAT's site. However, while some villagers revealed

that they were content with the relocation, others were critical that some affected villagers had not been resettled. Residents who still demanded resettlement claimed that the environmental impacts were stronger during winter.

In regards to compensation, villagers explained that only resettled residents received compensation. Furthermore, some understood that villagers would like to be relocated in order to receive monetary compensation.

Finally, the matter of expropriation is reviewed. A part of the land that was expropriated is noted to be used as workers' accommodations. Nevertheless, it was mentioned that some pieces of land had not been expropriated and the remaining villagers had to deal with the problems from deserted (vacant) land. It was argued the vacant land developed puddles which attracted mosquitoes, or could become hiding places for thieves. Some villagers complained that they could not commit to anything permanent on their old land. Hang Hung villagers urged EGAT to expropriate the abandoned land in the village.

Various key changes were brought to Mae Moh as a consequence of EGAT's establishment in Mae Moh. These changes were both intentional and unintentional and resulted from EGAT's strategy to acquire approval from Mae Moh residents. It is crucial for EGAT to build relationships, understanding and trust with local residents to receive their approval. EGAT also formed a voluntary unit to help it achieve this goal. EGAT staff found it essential to participate in local activities—and it was appropriate to alternate staff who communicated with villagers. Additionally, EGAT adopted CSR to show that it takes environmental matters seriously. EGAT also organised open houses to educate the public and create awareness of its production processes. EGAT employed the media to illustrate that the environment in Mae Moh was not harmful. In order to show good will, EGAT arranged a mobile medical unit for those who required medical attention.

To demonstrate further support for local Mae Moh communities, EGAT founded and funded funding institutions, such as the PDA, the Mae Moh Development Association and the Power Development Fund. Moreover, EGAT also supplied funding to surrounding communities. Other than these initiatives, EGAT improved its environmental performance by equipping pollution monitoring stations and installing FGD systems to help control its emissions. With regard to the social changes that followed EGAT's establishment in Mae Moh, many things were described as improved in Mae Moh. EGAT took part in developing Mae Moh as well as showing support for residents affected by the environmental impacts. Furthermore, according

to N20, there is civilisation in Mae Moh now as opposed to no civilisation. As a result, more people have moved to Mae Moh, which created diversity. The Mae Moh region also faced economic adjustments. It was claimed that EGAT brought economic improvements to Mae Moh and that numerous people moved to Mae Moh for the job opportunities. In addition, EGAT made it its first priority to employ local people before candidates from other areas.

EGAT resettled villagers out of the five kilometre radius surrounding its site. Nonetheless, some villagers insisted they would stay in their original lands. Consequently, villagers who relocated were made up of those who would like to relocate and those who were not pleased to do so. Those who relocated revealed that they did not experience the environmental impacts anymore. Some relocated villagers struggled professionally, but those who did not rely on agricultural activities previously did not have the same difficulties. Nevertheless, it was noted that some relocated villagers added to pollution problems by clearing land. Meanwhile, some sensed that the resettlement made residents more selfish. However, EGAT's efforts in resettling villagers were valued as EGAT was willing to go to great lengths to entice the residents to relocate.

Relocation is also viewed as a solution for environmental impacts for EGAT. It is essential to note that residents received monetary compensation for relocation. Some informants understand that the compensation is the main reason some requested to be resettled. On the other hand, expropriation of villagers' old land is a concern as the remaining villagers have encountered problems resulting from this deserted land. Additionally, some villagers find it problematic that their old land was not expropriated because they cannot utilise the land for anything permanent.

It can be acknowledged that EGAT's efforts have in many ways turn draw criticism, even though EGAT aimed to bring only positive changes to Mae Moh. For example, funding projects, employment and resettlement has drawn some criticism of EGAT, while some villagers still cannot trust EGAT's operation regardless of its improvement of environmental standards. At the same time, a large group of residents refer to the new changes in Mae Moh as improvements.

It is evident that EGAT has made significant adjustments to adapt to villager's reactions to the environmental impacts. The implications of this case study will be discussed in the next research question.

7.3 Subsidiary Research Question 3

In what way does the Mae Moh case study demonstrate the agency of local villagers and show how unequal power shaped EGAT's response to environmental conflict?

The case study displays the agency of local villagers because in this case study the villagers successfully proved to the Administration Court that EGAT was negligent in controlling pollution created from its operations. Additionally, the villagers successfully convinced the Administrative Court that EGAT should take responsibility for the environmental impacts, judging from the verdict that ordered EGAT to compensate villagers for the loss of their crops, emotional impacts and health impacts. In addition, the Administrative Court ordered EGAT to conduct an environmental audit every two years and to follow the buffer zone and bunker conditions in the patent permit.

Furthermore, the Administrative Court stated that EGAT did not rehabilitate the land as the patent permit specified, and that EGAT must dump soil back in the mine and plant trees to replace those removed. The Administrative Court also declared that, even though EGAT did not violate the wet land condition of the patent permit, it still had to request to an adjustment of this patent permit condition.

Moreover, the villagers were able to make EGAT comply with many of their demands covering the environment, medical assistance, resettlement, monetary compensation, assistance, employment, representative selection and welfare. An example of monetary compensation demanded of EGAT were the royalties received by part of Hang Hung. In addition, the villagers compelled the Administrative Court to determine that EGAT must compensate affected residents. The villagers used their agency in the court case to persuade the court to order EGAT to relocate Huay King villagers. EGAT also contributed to local occupational development and assisted local groups to promote their products.

Nonetheless, it is believed that villager resistance increased as a result of the founding of the Power Development Fund. A village leader further added that income tax was a source of conflict. It thus may be understood that a part of the conflict originated from monetary compensation. An employee of the ERC noted that, at first villagers might have made demands on behalf of the communities, but after a while they started thinking about personal gains. A former EGAT employee supports the notion that in the past, the village leaders did not urge villagers to become strong opponents of EGAT.

In relation to resettlement, it was observed that division became more evident and that villagers grew more selfish after resettlement. In this way, it is useful to contemplate whether the relocation weakened the local residents' agency.

The case study demonstrated that the villagers employed their agency to negotiate with EGAT in order to acquire what they requested. This agency arose as a consequence of the Royal Forest Department Regulations regarding permission to take advantage of, or reside in, the national preserved forests B.E. 2548 (2005). These provisions dictated that EGAT could only commence its projects if they passed the civil society forums' vote, which relied on local residents approving each project. This law was the government's initiative to include the public in the decision-making process around projects that would affect it. However, it is admitted that the villagers get paid to attend the civil society's forums.

As EGAT needed their approval for its projects, it was willing to walk the extra mile for the villagers along with establishing good relationships with them. The local communities were able to induce EGAT to send its staff to attend village meetings. Furthermore, EGAT considered local relations to be so important that it formed the community relations unit to manage these relationships. Local relationships were considered essential to EGAT in the sense that, if there were sick villagers, EGAT's community relations unit would come to pick them up for medical attention. In the past, EGAT concentrated only on production. An EGAT staff member disclosed that, if local residents trusted EGAT, other groups would not be able to attack EGAT. Another EGAT employee declared that if the villagers were not supportive, then the People's Forums would have failed.

Additionally, villagers' complaints caused EGAT staff to become more careful about creating any adverse effects, even temporarily. The results of the complaints can be noticed from EGAT's ongoing engagement in resolving water pollution after a village leader's request. Further, after an environmental crisis, an EGAT staff member noted that EGAT was continuously improving the pollution levels emitted. In addition, an EGAT staff member conceded that EGAT reduced its production capacity to control the sulphur dioxide level, before the installation of FGD systems.

Based on the environmental crises, the villagers, as well as interest groups, were equipped with stronger agency because they could utilise the crises as legitimate reasons to make demands or to complain. Because Baan Dong village experienced adverse impacts, it was granted monetary compensation. Furthermore, some groups attempted to intensify their

agency by seeking advocacy from authoritative figures by cooperating with other groups such as the Occupational Health Patient Rights Network. Nevertheless, a government official from the PCD commented that if the voter base is not large enough, politicians do not get involved with the matter.

Other ways local villagers used their agency were by blocking roads and protesting. These methods were categorised as effective by both villagers and EGAT staff members. They were considered effective because they caused public obstruction, thus, EGAT had to cater to the demands in order to end the obstruction.

A village leader described that after the court case, EGAT focused on creating understanding. This provided local residents with stronger agency. For this reason, more villagers gathered to make demands on EGAT. An EGAT staff member highlighted that if their CSR was not good enough, EGAT could not survive in Mae Moh. Moreover, a member of the Occupational Health Patient Rights Network divulged that if EGAT did not solve the problems in Mae Moh, it could not operate anywhere else.

Due to the environmental impacts, EGAT is more careful when it comes to environmental performance; it has started using cleaner fuel and installed the FGD systems.

It was acknowledged by a village leader that government organisations must accept that people have more knowledge, rights and freedom to express concerns and are becoming more assertive stakeholders now. This indicated that the public's agency was now recognised as being stronger than before. As a consequence, government organisations must develop their skills in handling environmental issues, and accept feedback from other parties.

The funding arrangements (the Power Development Fund, the PDA and the Mae Moh Development Association) in a way turned local residents against each other because the villagers had to compete with each other to acquire approval for their projects. This was where the agency of the villagers was weakened.

Unequal power shaped EGAT's response to the environmental conflict in numerous ways. First it is fundamental to recognise EGAT's position as a state enterprise. Because it is a state-owned enterprise, it has well-established connections with the Thai government and they have shared profits from EGAT's business. Hence, EGAT could receive preferential treatment from the government. Thus, it is very likely that the government could pass laws that favour EGAT or offer assistance to EGAT through other governmental agencies, such as

the Royal Forest Department and Department of Primary Industries and Mines. Furthermore, the government could give EGAT authority to relocate Mae Moh's local residents legally, including granting the villagers with certificates of ownership. Thus the relationship not only gave EGAT authority but also legitimacy. This can be seen from the fact that EGAT could initiate any projects as long as it received local approval, which EGAT could obtain by satisfying local needs and negotiations.

After the crises, the legal environmental standard became stricter. The Royal Forest Department Regulations regarding the permission of taking advantage of or residing in the national preserved forests B.E. 2548 (2005) was passed in order to encourage participatory decision-making. However, the government would provide assistance to EGAT to attain the public's approval for its projects to facilitate EGAT commencing its projects lawfully. Further, according to the Department of Primary Industries and Mines regulation concerning action on the request for a licence concession, licence renewal, or transfer concession (no. 8) B.E. 2558, EGAT needed to seek consent from government authorities in order to begin any projects. As a result, EGAT had legitimacy under to the law. It can thus be seen that the government had found an approach to protect EGAT's activities with legitimacy. An example of a village that did not given EGAT approval for its projects was Baan Dong because it still had not gained a soil dumping tax. In regards to pollution and legitimacy, an EGAT staff member simply expressed that if something is allowed by the law, nothing further is required.

Moreover, the Administrative Court ruled in favour of EGAT at times. For example, it reduced the monetary compensation that villagers demanded with the reason that EGAT was already in the process of solving technical problems. Furthermore, it also decided that EGAT did not have to pay for the villagers' legal fees and that EGAT did not have to compensate villagers for various reasons. One such reason was that there was a lack of evidence that villagers were affected by smoke in that they did not have pneumoconiosis. Additionally, the Administrative Court did not revoke EGAT's mining licence. This helped EGAT by providing fuel to its power plant continuously. An EGAT staff member emphasised the fact that coal is the cheapest fuel Thailand has. In addition, EGAT's deputy governor proclaimed that the coal price was more stable compared to other types of fuel.

With regard to compensation, the explanation as to why EGAT needed to appeal the compensation case was given as being that civil servants must protect the citizens' interests. This implied that EGAT should be given additional opportunities to prove its remedial efforts,

and that it would be wrong for a state enterprise to make compensation payments before it was ultimately proven guilty. By appealing, the payments for compensation were delayed.

As a state enterprise, EGAT received cooperation from other government organisations in fulfilling the demands of the Mae Moh villagers. For example, the Royal Forest Department assisted EGAT in relocating Mae Moh residents. Additionally, the government may facilitate EGAT by giving it economic power to fulfil the demands of the residents, for example, by building roads, installing streetlights and purchasing more environmentally-friendly equipment.

Despite its status as a state-owned enterprise, EGAT also had to adhere to the National Environmental Quality Act 1992 in order to obtain the trust of the villagers and operate carefully by not creating noticeable environmental impacts. At the same time, it held open house events and agreed to resettlement to show the villagers that it was fully committed to protecting the villagers from the adverse impacts.

According to an NGO member, even though EGAT failed every stage of the evaluation for expanding the power plant, the expansion took place. An EGAT staff member gave as the reason that, at the time, there was high demand for electricity. As the sole electricity provider of the country, EGAT has plenty of resources, including monetary resources. An EGAT staff member mentioned that communities' leaders dressed better than before as they spent more on clothing. This implied that they may have received monetary incentives from EGAT to control the resistance in their communities.

Nonetheless, EGAT is the sole electricity provider of Thailand and therefore has the economic power. It allocated a part of its profits to the Power Development Fund. Further, EGAT was able to allocate budgets for any serious issues. Additionally, it could host activities to explore the villagers' problems and demands. In doing so, it could assess how it might gain the communities' approval at the next peoples' forum. Moreover, as the villagers viewed EGAT as a large and wealthy organisation, it founded the community relations unit to only focus on interacting with local communities in order to please local residents and gain their favourable opinion. EGAT has large budget resources which, as a Subdistrict Administration Organisation president stated, it manipulates as a means of retaliation or discrediting opposing views.

Multiple EGAT staff members stated that because of EGAT, Mae Moh had better air quality, hospitals, roads, schools, social welfare and water resources compared with other places [for example, Bangkok].

As a result, EGAT's status as a state enterprise influenced its responses to the environmental conflict. For this reason, the government supported EGAT's operation due to their shared profits. In addition, government organisations also assisted EGAT in satisfying the demands of the local residents of Mae Moh.

7.4 Subsidiary Research Question 4

What are the implications of environmental conflict at Mae Moh for the literature on environmental conflict in state-owned enterprises in less developed nations?

It is evident that EGAT's attempts to resolve the Mae Moh power station conflict resulted in a wider conflict. EGAT was condemned for several of its endeavours. The first reason for the criticisms would be EGAT's perspective on an acceptable level of pollution. Other attempts that villagers criticised were employment, resettlement and the Power Development Fund. Additionally, villagers' demands were labelled irrational. Subsequently, a group of villagers did not think it was appropriate to make further requests. A significant player in this dispute is the Occupational Health Patient Rights Network. A part of its role will be explained in this research question. Another element of this conflict is Thailand's demand for electricity.

As a response to local resistance, EGAT put serious effort into satisfying local communities. As for its legitimacy, EGAT received advocacy from the government and, in addition, it gained legitimacy through the fact that all its projects had to pass the civil society forums where local residents were invited to take part. However, there was a political aspect to the conflict too. In the end, it is proposed that, as a solution of this conflict, all parties must accept responsibilities.

As long as the pollution level was under the legal standards, it was acceptable as far as EGAT was concerned—as explained earlier, EGAT believed that if something was allowed by the law, nothing further was necessary. In the fieldwork chapter, it was discussed that EGAT was not concerned if it polluted the water, as an example. EGAT considered that if the pollution level was under the legal limit, it was acceptable as an outcome of its power generation.

7.4.1 Employment

Employment was an issue for which the villagers condemned EGAT. They presented that applicants from Mae Moh were more suitable to become EGAT employees than those from other areas. Furthermore, some residents acknowledged that EGAT gave job opportunities to only some villagers. Thus, this issue was a source of conflict between local residents and EGAT in addition to the environmental issue.

7.4.2 Problems from resettlement

It was mentioned that after some villagers resettled, the rest wanted to resettle too. Further, some EGAT staff members stated that some local residents demanded to be resettled because of the adverse impacts so they could receive monetary compensation. Moreover, villagers were upset that they had not been given certificates of ownership and that some of the land had not been expropriated, which led to multiple problems for villagers, such as mosquitoes and thieves. Additionally, they found it troublesome that they could not commit to anything permanent with their old land because of the uncertainty. Conversely, it was suggested that certain villagers still rented out their original pieces of land. Lastly, relocation combined villagers from different villages together. As a consequence, some residents had difficulties adjusting to their new communities.

7.4.3 Problems relating to the Power Development Fund

There appeared to be a misunderstanding concerning the Power Development Fund as different informants displayed different views regarding the fund's new rules, which require villagers to provide receipts in order to obtain any funding. Regardless, all villagers interviewed understood that there were new rules and that the new rules caused the fund to become more complicated because project owners could only present receipts from the projects in order to receive funding for their projects. Hence, the problem is that the villager could not pay for things in advance in order to acquire the receipts.

Moreover, it was noted that the allocation of the Power Development Fund was categorised as a political problem. The villagers did not trust how the Power Development Fund money was spent. Therefore, they would have liked the Power Development Fund to be audited. Further, only a certain group of people could access the money provided by the funding programme.

At the same time, it was reported that the Mae Moh sheriff misappropriated money from the Power Development Fund, although he denied this (Thaipost 2011).

In addition, some villagers believed the ERC was put in charge of the Power Development Fund to initiate disputes among local residents. Furthermore, it was argued that the Power Development Fund rules caused everything to be slow, and that they were not created with the input of the villagers. Moreover, it was reported that there was corruption among the old Power Development Fund committee members. The last problem was that the Power Development Fund was a reason for the Occupational Health Patient Rights Network to denounce EGAT. This matter will be explored later on in this research question.

7.4.4 Exaggerated demands

It has been scrutinised in the demands theme section that the villagers' demands were not rational. Some also stated that the demands are never-ending, in spite of EGAT's efforts. It was argued that the demands would continue to emerge until the allocation of compensation was resolved. Villagers' demands were made for salary, roads, lands, title deeds, monetary compensation, resettlement, representative selection and welfare. Villagers also demanded that the five kilometre radius where residents could receive compensation be expanded to include those residing outside the area. Regarding demands related to land issues, some villagers requested that the government should purchase their old land even though they had been granted new land, and complained that they could not use their old land for anything permanent. A government official commented that, after the payment had been made, villagers should acknowledge that the conflict had been resolved. Another informant reported that villagers continued to demand for more compensation even after they had been compensated.

M4.1 stated that irrational demands involved interest groups, electoral bases, welfare and an easy life for villagers. In addition, after the Power Development Fund was founded, it became more difficult for villagers to comprehend the logic behind various issues surrounding the power station.

In court proceedings (*Decided case 60-77/2552 and 68/2548 2009*), EGAT's representative proclaimed that the villagers abused their rights. An EGAT employee declared that there would continue to be new pollution complaints, and that it was problematic when demands were made endlessly. Further, it was disclosed that villagers who were not affected by the environmental impacts also requested compensation.

Due to the incentives offered, some villagers had abused their rights. **N30** declared that at times the doctor's certificates from villagers would be already typed up with only space left

for the doctors to sign. Furthermore, N30 suggested that when villagers made unfair demands to EGAT, it resulted in an increase in the cost of electricity.

A local politician (also discussed in the fieldwork chapter) commented that Baan Dong villagers did not consider that the compensation for soil dumping and digging was adequate.

It was believed that, initially, villagers made demands for their communities, but as time progressed the demands were for personal gain. Some claimed that they did not receive an adequate amount of compensation, whereas EGAT staff members tended to disagree with this. It is crucial to recognise that some villagers withdrew their membership from the Occupational Health Patient Rights Network after EGAT installed the FGD system and stopped making demands. One villager thought that later pollution was caused by local residents, not EGAT. Some villagers did not want to make demands because they considered that others had demanded far too much.

N19 disclosed that EGAT's consulting company could be responsible for the demands EGAT faced as its employees told villagers that if they let the construction happen they would be able to access money from the fund.

7.4.5 Supreme Administrative Court ordered EGAT to compensate villagers

Judge Sumeth Deuisres advised that EGAT should come up with plans to rehabilitate the environment and pay compensation to affected villagers.

7.4.6 Villagers decided not to make further requests

Although the villagers did not receive everything they requested, they were determined to acquire it (everything) themselves. In fact, some villagers who were affected by the adverse impacts never made any demands. Furthermore, after being offered annual compensation, some villagers did not want to demand anything more. This issue was referred to in the fieldwork chapter.

7.4.7 The Occupational Health Patient Rights Network

The Occupational Health Patient Rights Network was recognised as a prominent non-governmental organisation in this conflict. The network represented the affected villagers of EGAT's activities from Mae Moh, Lampang. As a result, and with the cooperation of Greenpeace (Bjureby et al. 2008b; Cohen 2006), it objected to electricity production using coal as the fuel. Further, it opposed other initiatives of EGAT, for example, relocation's

social changes and the fact that villagers still had not been given certificates of ownership (as elaborated in the secondary data chapter), and the method of allocation of the Power Development Fund. Nevertheless, there was also local resistance against the network as well.

D6.4 suggested that only interest groups and NGOs make demands. Furthermore, **D6.3** expanded that most villagers did not make demands. **M3.3** pointed out that people who made demands were not from Mae Moh. **M3.12** maintained that villagers from his/her village never made demands beyond EGAT's ability (to fulfil them).

The Occupational Health Patient Rights Network (OHPRN) had sought help from many parties to get EGAT, or governmental organisations, to fulfil their demands (Maison 2012). **M4.2** admitted that the OHPRN complained when their projects were not passed. Additionally, **M6** revealed that the OHPRN complained everywhere and that the OHPRN wanted the ERC to intervene. **D5** declared the OHPRN had no choice but to turn to authoritative figures.

The OHPRN also relied on the Administrative Court for its compensation.

M3.6 reports that the OHPRN made a lot of demands. **M2.6** implied that the OHPRN made demands because it had hidden agendas. **N28** believed that NGOs benefit from conflict. Moreover, an EGAT staff person thought that the OHPRN was unreasonable to demand money from the Power Development Fund annually until patients pass away and if the OHPRN received funding until patients pass away, then others would demand the same thing.

M3.1 commented that NGOs noticed that the government provided more help, when others made demands. Regardless, **D5**, a member of the OHPRN of Mae Moh, displayed a disregard or distrust of the monitoring stations. Additionally, he/she stated that, in court, the information on pollution levels provided by EGAT and the PCD did not match. Lastly, he/she revealed that the civil society forums conducted by Team Consultant (a firm contracted by EGAT) all failed.

M3.5 demonstrated that, after making demands with NGOs, both parties started developing different viewpoints. Nevertheless, some villagers did not consider that the OHPRN had the right to make demands. **M6**, an ERC staff member, revealed that the OHPRN was not accepted by the local communities because they felt the network aimed to take their money. However, a few of villagers still shared an appreciation for the NGO's actions, as **M2.6** claimed earlier; that is, that they effectively assisted in capturing EGAT's attention.

The OHPRN requested that EGAT lose its patent permit (*Decided case 44-59/2552 2009*) and also implied that EGAT did not follow the law (*Decided case 44-59/2552 2009*). Additionally, the OHPRN also collaborated with other NGOs, for example, the Stop Global Warming Association. In addition, the Occupation Health Patient Rights Network arranged a seminar to listen to opinions about the purposes of the Power Development Fund. They proclaimed that, in the past four years, the Power Development Fund had been used without the participation of stakeholders leading to the fund being used for the wrong purposes (ASTVผู้จัดการออนไลน์ 2011). The OHPRN's collaboration with the Stop Global Warming Association also extended to a lawsuit where both NGOs sued the Power Development Fund's provincial committee and the ERC to suspend the expenditure from the Power Development Fund (Maison 2012).

7.4.8 Demand for electricity

The demand for electricity influenced EGAT's decision to construct more power plants even though the environmental crises took place. Nonetheless, the new units replaced generating units 1–3 which were retired (Theerawongsakul viewed 30 April 2013).

D7.3 explained that there was a high demand for electricity when there was the construction of the plant. **D7.1** clarified that expansion was granted due to national electricity demand. Nevertheless, **D7.2** admitted that the environmental crisis and demand for electricity made EGAT decide to settle for 13 generating plants instead of 19.

7.4.9 Why EGAT prefers coal

Ekvitthayavechnukul (2009) revealed that EGAT had been granted a licence to continue mining worth 89 billion baht. She further elaborated that EGAT has discovered 864 million tonnes of coal in the Mae Moh mine and that the coal is expected to supply the power plant until 2035 (2009). Nonetheless, EGAT faced strong local resistance when it planned to build additional coal-fuelled power plants (Ekvitthayavechnukul 2009). In the same article, it is claimed that EGAT wanted to increase the proportion of power production from coal due to price stability and availability in the country (Ekvitthayavechnukul 2009). Nevertheless, the Cabinet had the right to decide whether EGAT would increase the proportion of power production from coal. Lastly, Ekvitthayavechnukul (2009) compared the cost of natural gas-based production and coal-fuelled power generation, illustrating that it is cheaper to utilise coal as fuel.

7.4.10 EGAT is willing to go the extra mile to please local communities

EGAT has to rely on the public's approval when it proposes future plans at civil society forums. It is determined to put a major effort into satisfying the local residents' demands. Moreover, it can be assumed that local communities expect support in return for their cooperation with the government, as Walker (2012) presents. This issue will be investigated further later in the discussion of this research question.

M3.6 disclosed that EGAT had granted what local communities demanded. In addition, **M3.12** stated that EGAT mostly agreed to grant funding to local villages. Despite this, **M3.3** acknowledged that while EGAT tried to do the best it could to deal with people making demands, if you demanded too much, it was unlikely you would receive it.

7.4.11 Civil society forums

In order for EGAT to continue to function in Mae Moh, it needed to be accepted in the community. Kerkvliet (2013) proposed that collective power can be used to acquire capital. Additionally, it (EGAT) needed the advocacy of the local communities to grant its projects approval in the civil society forums (a requirement in the EIAs for any new projects having the potential to impact on people's lives). As a result, EGAT genuinely attempted to build a relationship to increase the support for its projects in Mae Moh. Nevertheless, EGAT perceived that some members of the local communities expected much more from a state enterprise than was reasonable. **M2.4** elaborated that the budget would not receive approval unless it was endorsed in the forums.

It was declared that villagers could demand anything in the People's Forums, and that all projects must start with a civil society forum in order to determine whether the projects were needed in the communities. At the same time, the community had the power in negotiating and demanding because EGAT needed to acquire the civil society's approval for its legitimacy, and as a legal requirement. It can be understood that both EGAT and the local community had the ability to exercise power in the Mae Moh case study, but that power was not equally distributed. Overall, **N30** explained that over 80 per cent of the villagers granted their EGAT their approval, and the rest did not because they had not received what they requested from EGAT. Nonetheless, **D5** was not content that EGAT relied on the public's approval but did not base its procedures on current problems. Consequently, these problems remain unsolved. Further, **N27.1** thought that the participation of the people should be

improved and was being misused in Thailand. **M3.6** informed the interviewer that the leaders and politicians use villagers as tools in making demands.

7.4.12 EGAT's status as a state enterprise

The law required EGAT to obtain approval from local communities in people's forums in order for any projects to be endorsed. This gave legitimacy to EGAT, as the projects were lawful and they had received permission from local villagers (Lockwood 1964). Orssatto and Clegg (1999) imply that local managers are likely to enforce laws to better suit the elite stakeholders. In addition, EGAT was known to coordinate with governmental organisations, such as the National Environmental Board, the PCD and the Ministry of Energy.

7.4.13 Local disagreement

ASTVผู้จัดการออนไลน์ (2012) published that there was a case in Na Sak village where a villager was chased out of the village by the village leader because she had taken the story of her daughter's illness to the media. This news story shows that it is possible that public announcements of the environmental impacts could be strongly discouraged.

7.4.14 Politics

In this case study, it can be seen that the politicians or EGAT and local residents have a patron-client relationship. The evidence is that EGAT provides a large amount of funding to Mae Moh annually. Additionally, EGAT needs the villagers' approval before beginning any programmes, as explained earlier. Vichit-Vadakan (2005) also suggests that in the past five centuries, the patron-client relationship has been dominant in Thai social contexts.

Moreover, **D7.3** stated that there was a degree of local politics influencing the problem. **D7.2** explained that there were groups in Mae Moh that colluded in order to get their requests fulfilled by EGAT. Furthermore, **D7.2** commented that EGAT is used as an excuse so villagers can make demands. This outlook is supported by many others.

At the same time, politics could obstruct the construction of EGAT's new power station. EGAT's governor indicated that dissolution of the Parliament delayed the construction of new power plant, even though EGAT had invested over 30,000 million baht for the new power plant and that the new power plant would use lower polluting coal as fuel (สำนักข่าวไทย TNA News 2013).

7.4.15 All parties should be involved in resolving the conflict

EGAT has put tremendous effort into resolving the Mae Moh environmental dispute through multiple measures. At the same time, the OHPRN and local residents criticised EGAT and made further demands. Further, local residents participated in environmental inspections and open houses with EGAT. N20 suggested that, in order for the conflict to be resolved, all parties must cooperate.

According to an EGAT staff member, EGAT considered that it was acceptable to cause pollution as long as it did not exceed the national standard, which specified the pollution that could be produced continuously. As a consequence, EGAT contributed a great deal to Mae Moh in order to compensate for the adverse impacts. It can be acknowledged that EGAT has seriously attempted to settle its dispute with the local communities due to the environmental crises. Some of its attempts have been criticised, such as employment, relocation and the Power Development Fund. As its attempts to remediate the pollution impacts were heavily criticised, and since it was reliant on the local residents' approval, EGAT faced a high volume of demands, several of which were classified as 'irrational'. Other villagers decided not to make demands on top of what EGAT was already dealing with. Next, the OHPRN, an influential interest group, made the bulk of the requests of EGAT.

Due to the high demand for electricity in Thailand, EGAT's site in Mae Moh was expanded to respond to these demands. In addition to EGAT's endeavours to satisfy the local villagers, it also gained legitimacy from civil society forums and received support from the public sector. Politics was understood to be a major cause of this conflict according to interviewees. Finally, it is recommended that, in order for this dispute to be resolved, all parties should be included.

7.5 Key research question

How did EGAT respond to local resistance arising from the environmental impact of the Mae Moh coal-fired electricity generating power station and how did this response demonstrate the unequal power relations of the key players in the dispute?

The Mae Moh villagers developed resistance against EGAT Mae Moh since they believed that EGAT had caused the pollution that had damaged their health, livestock and land holdings (Sovacool 2010). Chumporn and Kamolvej (2015) add that the government used the argument of development of the country to support the power plant but neglected to consider the impacts upon Mae Moh residents. In addition, there were no preventive measures taken

for the problems the villagers faced. Moreover, EGAT's establishment in Mae Moh caused social impacts. Traditional ways of life for making a living and residing were disrupted. Surrounding communities were confronted with debts, loss of money from agricultural occupation, public health concerns, concerns related to sickness, infrastructure problems, lack of agricultural land and shelters and other associated problems.

Nonetheless, EGAT needed the support from local residents to remain in Mae Moh and to begin any of its projects because of the Royal Forest Department Regulations regarding the permission for taking advantage of, or residing in, the national preserved forests B.E. 2548 (2005). Thus, it needed to be accepted by local communities. Hence, the villagers united to make continuous demands. EGAT attempted to resolve the dispute and made agreements with local representatives with associated public organisations as witnesses (Chumporn & Kamolvej 2015). In accordance with the regulation of the Department of Primary Industries and Mines concerning action for the request for a licence concession, licence renewal, or transfer concession (no. 8) B.E. 2558, EGAT also required authorisation from government institutions to commence any of its proposals.

Chumporn and Kamolvej (2015) state that EGAT adopted a win-win strategy of negotiation in 1992, and from 1992 to 1997, EGAT utilised the same strategy with participation as a core technique, which resulted in good responses from the public. From 1998 to the present, EGAT also selected the win-win strategy for all negotiations. The crucial techniques used to resolve the conflict were negotiation and participation. Local residents became content as they felt they were a part of EGAT and had confidence in them being able to solve problems together. Chumporn and Kamolvej (2015) elaborated that EGAT adopted compromising techniques to manage the conflict and relieve the tension, and diminish expected damages.

Next, the compromising technique was applied for peaceful conflict management and results with mutual benefits. Chumporn and Kamolvej (2015) commented that the compromising technique is effective in decreasing the tension from the disputes and consumes the least resources and creates future benefits for both parties. Compromise is described as a moderate practice where both parties would lose and gain certain things. It is a measure that facilitates all parties coexisting peacefully (Chumporn & Kamolvej 2015).

Furthermore, participation covers opportunity creation for all society members to be a part of activities that influence development processes and help society members to gain equal benefits from development. Due to participation, the conflict appears to be reduced in that

citizens have the opportunity to be a part of various EGAT activities and EGAT is more involved with local communities. Activities that EGAT allowed local residents to be a part include commenting on EGAT's operation and the People's Forums, where the residents could make demands to develop Mae Moh. Conversely, EGAT became involved in local activities with the villagers to form relationships between EGAT and local villagers, for example, co-hosting the Songkran festival with local residents (Chumporn & Kamolvej 2015).

On top of these conflict resolution approaches, Subsidiary Research Question 2 discussed the responses EGAT brought to Mae Moh to compensate for the adverse impacts: building trust, understanding and relationships with local communities; funding and environmental improvements. Moreover, it created a unit to provide local communities with assistance and to build relationships and trust between the two parties, called the community relations unit. The roles of this unit were revealed in the primary data chapter. In addition to existing funds, EGAT granted money for special requests from local communities. The details of these funds and monetary assistance were revealed previously in the primary data chapter.

In addition, EGAT improved its environmental performance to comply with the National Environmental Quality Act 1992 (PCD 2004). The improvement helped convince local villagers that EGAT was now more careful not to create harmful pollution.

Apart from EGAT's efforts that have already been mentioned, it also aimed to enhance the villagers' quality of life by relocating them further from its site. Nevertheless, EGAT was criticised for this effort as many villagers experienced difficulties from the resettlement, among other efforts mentioned in Chapter 6.

In order to understand, how power is played out in this case study, a circuit of power is applied as a framework, as illustrated in Figure 3.

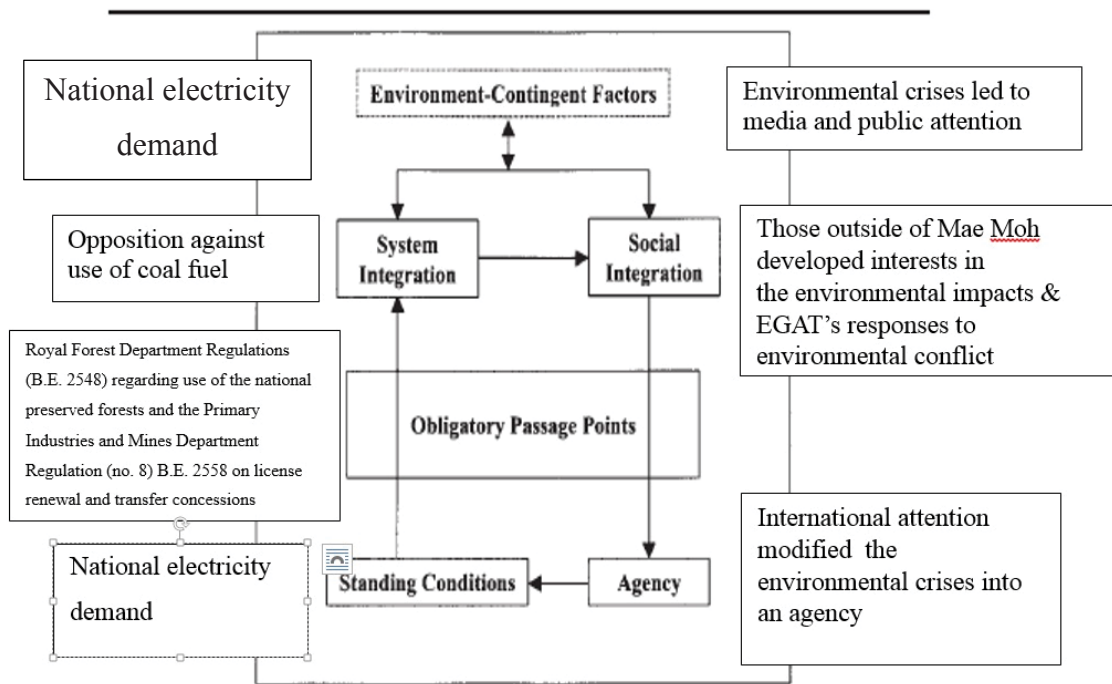


Figure 3: Circuits of political ecology

7.5.1 Environment-contingent factors

Environment-contingent factors have the potential to indirectly alter what people do in and between organisations which is the power's context (Orsato, Den Hond & Clegg 2002).

Political action always arises within a social and systemic context. Each of the actions has the potential to reformulate the meaning of the entity. It could be described as circulating through existing circuits of social and system integration. The political action symbolises the previous strategic amalgamation of power in what appears to be developing in natural order. Orsato, Den Hond and Clegg (2002) state that actors that are politically involved attempt to sustain an array of relations that will signify that either they occasionally need to exert causal power to uphold the status quo or that they exert power for favourable outcomes.

In the Mae Moh case study, environmental crises led to media attention. EGAT responded to the challenge from the news coverage concerning the environmental crises by adopting numerous conflict resolution approaches, revealed previously, and the measures discussed in Subsidiary Research Question 2, to improve its perception by the public. Chumporn and Kamolvej (2015) insist that the conflict resolution methods selected functioned effectively. Moreover, by forming relationships, trust and understanding, providing funding and improving its environmental practices, EGAT drastically reconstructed the perception of the local residents towards it. Further, EGAT could cooperate with the government to regulate

the environmental standards as it is a state enterprise. It can be recognised that the environmental crises acted as environment-contingent factors since they stimulated changes to EGAT and Thailand's environmental policies.

7.5.2 Agency

Environmental crises occurred in 1992 and 1998. The Mae Moh power station is recognised as the largest source of sulphur dioxide in South-East Asia (Greenpeace 2005). Its operation caused two environmental crises in Mae Moh that resulted in the deterioration of villagers' well-being, their agricultural products and livestock.

The first environmental crisis took place in 1992. EGAT turned on 11 generating units without FGD systems (Boonlong 2011). According to Suaysom and Wangwongwatana, the highest level of sulphur dioxide measured was $3,418 \mu\text{g}/\text{m}^3$, where the legal standard permitted up to $1,300 \mu\text{g}/\text{m}^3$. Greenpeace (2005) described how villagers dwelling within seven kilometres of EGAT's site developed respiratory problems, nausea, dizziness and inflammation of the eyes and nasal cavities within days. Boonlong (2011) elaborated that within two months, acid rain devastated half the rice fields. In 1996, local residents claimed that the pollution from EGAT's operation caused six villagers to suffer blood poisoning, from which they subsequently passed away.

Two years later in 1998 another crisis occurred (Suaysom & Wangwongwatana). Suaysom and Wangwongwatana claim that the reasons were the dysfunction of the power plant and substantial overnight precipitation. They note that the FGD system of one 300 Megawatt unit was switched off, but that the operation did not stop. The maximum hourly level of sulphur dioxide emitted was $2,308 \mu\text{g}/\text{m}^3$. They report that impacts on villagers' health, crops and farm animals were found in areas around EGAT's site. Since the crisis reoccurred, the older villagers were concerned that they might have to relive it in the future.

Both environmental crises received domestic and international media attention (Greenpeace 2005; Kasetsart University 1998; Pradubsuk 2009; SBJ. 2011). Residents in Bangkok began to become aware of environmental issues linked to EGAT. Agency was formed from the impacts of sulphur dioxide on the villagers' health, crops and farm animals. In other words, environmental impacts from the crises become an agency as they equipped the third sector with the ability to shape the outcomes of the environmental concern. The environmental

episode in 1992 was the first time that the connection between sulphur dioxide and electricity generation was established in Thailand.

7.5.3 Standing conditions

Orsato, Clegg and Falcão (2013) point out that agency cannot function without the circumstance that preserves the unvarying condition. The condition here can be referred to as the group of standing conditions, or the settings and taken-for-granted circumstances that maintain the stable context where resource dependence habitually operates as a way of creating specific outcomes. The ‘systematicity’ of an organisational sphere, encapsulated in the framework through the idea of the standing condition, determines whether any singular incident creates an impact when power is exerted. The events where Mae Moh residents had health issues from the excessive levels of sulphur dioxide being emitted in 1992 and 1998 function as a substantial invasion of the conventionality of existing standing conditions. The standing conditions allowed EGAT to trust its own judgement, which led to the production of electricity without FGD systems in 1992, and continued production while one system was not functioning in 1998. These episodes resulted in attention from the country’s elite and the governments. Baker and Phongpaichit (1998) illustrate that new groups of politicians and entrepreneurs in the 1990s were apparently affiliated to achieve prosperity for themselves. Further, Khanthavit, Polsiri and Wiwattanakitang (2003) noted that in Thailand, major shareholders tend to vote as a block. They (2003) concluded that this could potentially obstruct the improvement of corporate governance practices and transparency as players are afraid of a reduction of their power.

The excessive level of sulphur dioxide and resulting environmental crises at Mae Moh remarkably depleted the trust that the elite had in EGAT. The NGOs took on a new importance because the environmental crises verified their predictions concerning coal fuel and its environmental impacts. EGAT’s standard practice in using lignite to fuel its power stations placed its operations in jeopardy.

Regardless, the government authorised EGAT to continue mining in 2009 (Ekvitthayavechnukul 2009). It can be understood that the government, at the same time, gave EGAT permission to continue employing coal as fuel in order to produce electricity. **D7.1** also commented that the Mae Moh plant was expanded as a result of national electricity demand, although **D7.2** conceded that the past environmental degradation was the reason why EGAT decided to construct 13 generating plants instead of 19.

7.5.4 Obligatory passage points

Orsato, Den Hond and Clegg (2002) propose that in a particular organisational field, political players will seek to protect their interests by stipulating what is considered obligatory and what is not. The Royal Forest Department Regulations regarding the permission for taking advantage of, or residing in, the national preserved forests B.E. 2548 (2005) required EGAT to arrange a People's Forum every time it came up with a new programme. The purpose of the condition was to acquire the people's participation in EGAT's planning, and for all stakeholders to have open dialogues. It can be seen here that conflict management has been institutionalised. The alternative given in this case is the civil society forums. Though the NGOs were not regarded as EGAT's allies, their involvement is significant to the validity of the standing conditions that the government aimed to set up to stabilise the industry. In addition, the Department of Primary Industries and Mines regulation concerning licencing and the transfer of concessions (no. 8) B.E. 2558 dictated that approvals from government institutions were needed for EGAT to start any of its projects. Here, the civil society forums and approval from governmental agencies served as obligatory passage points for EGAT's legitimisation.

D5 mentioned that EGAT needed to rely on the masses (in the People's Forums) to carry out any project. Consequently, it can be seen that the People's Forums were regarded as obligatory passage points in this case study. Nevertheless, politics are implicated. There are two ideas concerning politics in the Mae Moh power station case. First, it is suggested that EGAT was being used. **D6.4** implied that villagers would only be supportive of EGAT if their demands were met. Second, it is implied that politicians used the villagers to win elections. **M4.1** hinted that a politician won an election because he promised the villagers different things from EGAT.

For both scenarios, the suitable explanation would be that EGAT and local residents have a patron-client relationship. At the civil society forums, the villagers and EGAT have negotiated their terms. From the previous chapters, it is recognised that EGAT offered various forms of financial support to Mae Moh. At the same time, EGAT required approval from the Mae Moh villagers to commence any projects. With regard to the former point, this was a reason why EGAT would be willing to bend over backwards to satisfy local communities. Therefore, EGAT was used for personal gain, as the villagers knew that their approval was essential.

From the explanation above, it can be acknowledged that the political players in this case study engaged in protecting their interests in civil society forums.

7.5.5 System and social integration

System integration depicts the manner in which innovation may enable or disable the applicable competencies of different agents in an organisation's sphere. In this case study, system integration would refer to the OHPRN's and Greenpeace's agenda to motivate EGAT to replace coal with other types of fuel, and EGAT's persistence in continuing to utilise coal as fuel for electricity production.

Together with Greenpeace, the OHPRN described that the environment in Mae Moh as 'far from safe' (Cohen 2006). The OHPRN had made requests for compensation from EGAT numerous times due to the environmental impacts from sulphur dioxide, as well as simply criticising the environmental impacts of coal fuel (ASTVผู้จัดการออนไลน์ 2013; Decha 2005). Furthermore, Greenpeace denounced EGAT Mae Moh for expelling over seven million tonnes of carbon dioxide annually (Bjureby et al. 2008a). Thus, EGAT had to encounter objections to the use of coal domestically and internationally.

EGAT's justification for using coal fuel was the coal price. The coal price was 55 satang per unit, while the cost of natural gas-based production was 1.75 baht per unit (Ekvitthayavechnukul 2009). Furthermore, EGAT integrated coal with low sulphur as a part of its fuel FGD (Theerawongsakul viewed 30 April 2013). Moreover, EGAT believed that the installation of FGD systems could effectively prevent future episodes of excessive sulphur dioxide being emitted (*Decided case 60-77/2552 and 68/2548* 2009). EGAT also emphasised that its new power generating unit would employ clean coal technology (สำนักข่าวไทย TNA News 2013). Lastly, it insisted that the environmental standards are included in the contract between EGAT and its contractor. Hence, EGAT relied on a belief that it was safe to use coal fuel.

Social integration refers to the manner in which individuals are related to each other in a society. In this case study, social integration refers to international constituents being sensitive to the issue of environmental degradation by EGAT Mae Moh's operation, and EGAT's responses to the environmental issues.

Due to the environmental crises in Mae Moh, for the first time, people residing in Bangkok began to take an interest in the environmental impacts of EGAT's activities in Mae Moh.

Additionally, agency triggered Greenpeace to publish multiple reports concerning this environmental degradation (Bjureby et al. 2008b; Cohen 2006). Further, UNESCO also acknowledged the environmental degradation in its publication (Boonlong 2011). At this stage, it can be seen that the environmental crises attracted international attention as well as domestic scrutiny.

On another note, local resistance towards EGAT intensified. As a consequence, EGAT attempted to respond to this through an extensive strategy consisting of projects aiming to gain trust and establish relationships with local communities. These programmes incorporated different funding schemes, environmental policies, relocation of affected residents, other CSR attempts and employment generation. In addition, EGAT was also equipped with legitimacy as the law required all its projects to pass the People's Forums first. More information on EGAT's responses can be found in previous chapters. It can be seen that obligatory passage points assisted EGAT with social integration.

At the time of the study EGAT was accepted by most Mae Moh villagers. It is considered that EGAT has achieved overall social integration. However, there was still distinct hostility from the OHPRN.

7.5.6 Conclusion

The framework of circuits of political ecology introduced by Clegg (1989) is adopted as the theoretical framework to analyse a specific business–environment relationship matter. Even though EGAT's environmental policies can partially illustrate the progression of the organisation taking more environmentally-friendly approaches, it is crucial to examine the business–environment relationships from aspects that contemplate how power relations construct and outline EGAT's environment. This framework can function as a practical theory relating to ecological issues for management. This work can assist readers in comprehending the context of where the environmental conflict arises.

Orsato, Den Hond and Clegg (2002) suggest that the adoption of a political ecology viewpoint can distinctly enhance the analysis. Through the analysis, the researcher identified a major shortfall in the techniques used to examine environmental issues in organisational research; that is, that more political outlooks are imperative.

The concepts in the framework are not related to other works on power. Consequently, the framework is theoretically grounded (Orsato, Clegg & Falcão 2013). This framework is used

to analyse the political context in which environmental conflict takes place (the organisational territory of electricity).

As an outcome of the conflict between EGAT and Mae Moh residents, the OHPRN was founded. The network is an example of a political player seeking to set obligatory elements in a specific terrain. As a state enterprise, EGAT could convince the government to support its decision to continue to use coal as fuel in generating electricity. Its status as a state enterprise also permitted it to create its own preferred legal standard where there were few adjustments required to their guidelines, and to present the idea of environmentally-friendly electricity production.

The comprehensive analysis of this conflict displays the political ecology of the Mae Moh environmental conflict which focuses on a key objection to environmental problems—that there needs to be more political understanding (Jermier, Forbes, Benn, & Orsato, 2006).

The organisational field has been used as the primary level of the analysis. This allows the researcher to include relations that would usually be taken for granted as a part of the traditional concept of an industrial domain. Hence, the demand for more research at this level of analysis is satisfied.

Furthermore, the findings imply that the government equips EGAT with legitimacy by passing the rules of the Royal Forest Department Regulations (B.E. 2548 or 2005) regarding use of the national preserved forests as well as the Primary Industries and Mines Department Regulation (no. 8) B.E. 2558 (2015) that permit EGAT to begin a project only if it has gained approval in a civil society forum. The case study revealed that political players attempted to protect their interests. Moreover, EGAT is only successful in sustaining unmodified components of political ecology, as other actors in the circuitry of power do not have the capability to persuade the government as effectively as EGAT. Additionally, EGAT is the only supplier of electricity in the country. This framework demonstrates that power is not in EGAT's control, but within the framework it was driven by different parts to benefit EGAT.

7.5.7 Limitations of this study

The limitations of this study will be discussed in this section. There were differences in the experience of villagers from different villages due to their location. Certain villages may have faced different types of pollution than others, or the same types of pollution but to a different

degree. Additionally, people from different villages could have different experiences with EGAT. This depended upon the relationship each village had with EGAT.

From the experience of this research, some EGAT staff members preferred to only reveal good things about EGAT. On the other hand, the OHPRN only made negative comments concerning EGAT, which can be observed from both primary and secondary data.

Further, there could be an issue of honesty due to the researcher's social position. To elaborate, in Mae Moh residents' eyes, the researcher was an outsider. As a consequence, some villagers chose not to answer some questions, whereas government officials or EGAT staff may have felt the researcher could possibly have personal connection to those in higher positions.

Lastly, the environment of the case study was not a factor in the control of the researcher.

7.6 Conclusion

Sulphur dioxide emission from EGAT's power plant in 1992 and in 1998 was believed to have caused environmental crises in Mae Moh, affecting villagers' health, livestock and crops. As a result, local resistance developed against EGAT. Nevertheless, conflict became more complicated as EGAT attempted to resolve local conflict. Additionally, EGAT was regarded as a state enterprise with abundant resources, and villagers hope to benefit from its status.

EGAT's responses to the local resistance were driven by the law and Thailand's social context. The responses based on the law would refer to People's Forums, the Power Development Fund, environmental practices and so on.

The circuit of political ecology was adopted to help analyse EGAT's responses and other elements influencing its responses. This framework has illustrated how EGAT and local residents' unequal power relations were played out. Furthermore, Rosewarne (2007) states that in order for the association of political economy with environmentalism to be substantial, the work must go beyond an intellectual task and this task must also contain a political advantage. As a result, it involves environmentalism politically.

This research provides a contribution to the literature on managerial responses to local resistance to environmental conflict, specifically in the context of a developing nation.

8 Conclusion

8.1 Introduction

The research described in this thesis had as a primary goal the examination of the roles of unequal power relations between the EGAT and the local Mae Moh villagers and their third-sector representatives. It is specifically interested in contributing to the management literature by illustrating how unequal power influences EGAT's responses to the environmental conflict it is responsible for. This thesis utilises the Mae Moh power plant case study to address environmental conflict and CSR since mainstream management research often neglects case studies in countries such as Thailand, as opposed to those of Western origins (Fox 2004; Prieto-Carrón et al. 2006).

8.2 Overview

This thesis describes the background of the Mae Moh environmental dispute from a Thai perspective. The Thai political economy and the social and political relations in Thailand were critical in shaping the environmental conflict at the EGAT power plant and the way in which it was resolved. The power relations exhibited at Mae Moh are, in part, the power relations of Thailand. Additionally, this thesis considers the main parties involved with the dispute and the subsidiary research questions that arise; namely, (1) What was the environmental impact of the EGAT power station on Mae Moh residents and how did they respond? (2) What key management changes and other responses did EGAT bring to Mae Moh in response to the environmental conflict? (3) In what way does the Mae Moh case study demonstrate the agency of local villagers and show how unequal power relations shaped EGAT's response to environmental conflict? (4) What are the wider implications of the environmental conflict at Mae Moh for the literature of environmental conflict in state-owned enterprises in less developed nations?

The key research question posed by this thesis is: *'How did EGAT respond to local resistance arising from the environmental impact of the Mae Moh coal-fired electricity generating power station and how did this response demonstrate the unequal power relations of the key players in the dispute?'*

8.3 Methodology

The Mae Moh environmental conflict case study was analysed using a qualitative approach; specifically, a case study. Eisenhardt and Graebner (2007) maintain that this approach will provide knowledge for a complicated social system. In addition, Gray (2009) comments that

it could introduce a better interpretation of the context as compared to quantitative research. The researcher conducted interviews to find the answers to the research questions. Semi-structured interviews were adopted in order to permit the informants to offer applicable information to the study in addition to their responses to the questions asked. The group of informants consisted of staff working for EGAT, relevant officials of governmental organisations, Mae Moh villagers, a politician from Mae Moh, an ERCer and a member of the OHPRN.

The framework of political ecology introduced by Clegg (1989) was chosen as the most appropriate theoretical lens for this thesis—among an extensive review of other possible approaches—since it appears to be most suitable for studying a business–environment relationship topic that focuses on management responses and the factors that impacted on the environmental conflict, the decision-making processes within EGAT and the outcomes. It should be said that these are *not* final outcomes or resolutions because the nature of environmental conflict such as that at Mae Moh is that outcomes are compromises that are negotiated at a particular point in time and that satisfy different parties unequally. Although EGAT’s reform of its environmental policies can explain a part of its development towards becoming greener, it is necessary to review the business–environment relationships from different points of view that examine how power relations are set up, and determine these policies and how sustainable these outcomes are.

8.4 Key findings

Three major themes emerged from analysis of the data: the pollution, the villagers’ responses and EGAT’s responses. First, the nature of the environmental impact of the EGAT power station has been documented in great detail. The pollution is made up of sulphur dioxide, water pollution, noise, dust, odour, vibration and smoke. Even though the main pollutant leading to the two environmental crises was sulphur dioxide, complaints regarding other types of pollution from EGAT’s production emerged during the research.

Second, the nature of the villagers’ responses to this pollution—of their agency in fighting what was imposed on them by the powerful EGAT with the support of government and legal powers and influence—has been outlined extensively, using the voices of the villagers themselves. The environmental conflict developed over a long period of time. The thesis outlines the role of NGOs in advocating for the villagers in this regard. The villagers made demands in peaceful and non-peaceful ways. Not all actions were successful. Not all villagers

agreed on the correct course of action; they were not a homogenous group and unequal power relations within the villagers' groups were evident during the course of the conflict. Relations of patronage and influence differed among different individuals and groups of villagers. An important contribution that this case study makes to the literature of environmental conflict is that the victims of environmental deterioration will fight back in different ways, demonstrating their agency; sometimes they will use the support of collective organisations such as NGOs and at other times, they will make individual protests. The political ecology of Thai society shaped the nature of this 'fight-back'; different intensities of the struggle in different instances and different demands were made by different groups of villagers at different times.

The last major theme of the thesis was EGAT's responses to the conflict in general; the way that they chose to exercise their unequal power, and the constraints on their power imposed by public media and political and legal considerations. The ways in which EGAT responded to the opposition from locals can be classified into three categories: it aimed to build relationships, trust and understanding with local communities; it provided various funding and compensation schemes offered to different groups of locals at Mae Moh; and it strengthened its environmental policy within a CSR framework. The different weightings and timing given to each aspect of EGAT's response, and the beneficiaries among locals to each of the different phases, was shaped by external legal and political pressure on the one hand and local relations of patronage and influence on the other.

It was mandatory for EGAT to be accepted by the local communities to remain in Mae Moh. The Royal Forest Department Regulations regarding the permission for taking advantage of, or residing in, the national preserved forests B.E. 2548 (2005) were passed in order to encourage the public to take part in the decision-making process in projects that would impact them. Because of this, EGAT was willing to go to great lengths to satisfy local residents and to obtain their approval for any changes. This provided an external constraint on EGAT's dominance of power over the locals. Nonetheless, not all villagers' complaints about any form of pollution were acknowledged or responded to equally. Furthermore, local politicians, village leaders and NGOs took the opportunity to utilise the changing conditions for their own benefits. Specific outcomes were a nuanced and complex response to these differentiated power relations. The Royal Forest Department Regulations referred to above did provide locals with an entry into the decision-making processes at the EGAT plant but also granted EGAT the legitimacy to continue its operation. The government retained its

power by specifying that it is necessary for EGAT to obtain approval from the local parliament. The national environmental standard also gave EGAT legitimacy since EGAT could always insist that the pollution emission levels were under the legal limit. In this sense, while the law constrained the way EGAT responded to the environmental conflict and provided openings for local opposition, it also fundamentally shored up EGAT's unequal power to ensure that it had the upper hand in resolving the conflict, and determining a favourable set of outcomes, while appearing to make concessions to locals. It is essential to recognise that these types of laws facilitate EGAT's viability and give it a dominant hand in 'resolving' environmental disputes at the power plant. This dominant hand was presented as part of a caring, CSR agenda.

From the case study, it can be perceived that EGAT's position as a state-owned enterprise, and the political power that is attached to this, significantly shaped the nature of, and the outcomes of, the environmental conflict in Mae Moh. Moreover, its responses are also shaped by the Thai social context where the cultural and traditional norms influence the outcomes of the dispute.

8.5 Contribution

Noronha et al. (2013) disclose that there is a growing tendency among Asian governments towards administering CSR concerns, and that globalisation has increased an awareness of CSR. The Mae Moh environmental conflict case study scrutinises how each group exerted its power for desirable results. Rosewarne (2007) argues that the attempt to comprehend the nature and the effects of human interactions on the ecosystem has been one of the most robust terrains of research over the past two decades. But research is stronger in more developed, rather than less developed nations like Thailand. Moreover, this thesis emanates from a management discipline unit within the UTS Business School. This means that the thesis is not only concerned with the environmental impact and conflict per se, but particularly in how management (EGAT) responded to this conflict and its 'resolution' at a given point in time.

Specifically, the unequal power of EGAT over other parties involved in the dispute—constrained only in part by Thai state legal obligations and political sensitivities—made some concessions to villagers' demands but those concessions were minimised by EGAT's ability to use local relations of power and patronage to provide concessions to a few, and deny them to others. This enabled EGAT to 'divide and rule' the local opposition. The outcome was that a minimum of change and compensation was made by EGAT at Mae Moh, with EGAT's

CSR policy masking the unequal outcomes and limited concessions within a language of optimal environmental and social concern.

The CSR policy of EGAT provided a vehicle for EGAT to negotiate changes at the Mae Moh plant and determine compensation arrangements in a way that gave the impression of maximum change made by, and responsibility owned by, EGAT that in fact masked the ability of EGAT to deliver the minimum change possible to the plant and to provide most compensation to a selected group of locals chosen because of their social or political connections. Further, in this case study of environmental conflict, unequal power relations were evident not only between EGAT and locals but between the locals themselves. At the same time, decisions by EGAT in response to the conflict were constrained by the Thai state, but in a way that permitted minimal change at Mae Moh.

The thesis demonstrates that the outcomes reflect unequal power relations between EGAT and villagers, and between villagers themselves due to patronage. In order to understand the conflict dynamic, one must understand patronage in the Thai context. It also demonstrates EGAT's commitment to CSR but in a way that helps it secure an outcome from the environmental conflict that is more positive for EGAT. In other words, *corporate* comes before *social* in priority as well as word order. This has implications for the management theory of CSR. Furthermore, the thesis demonstrates EGAT's commitment to CSR. EGAT is a government instrumentality, yet it is constrained by the government. The environmental conflict is thus a three-way play between residents, EGAT and the government legislature and laws.

8.5.1 Usefulness of political ecology

After reviewing the theoretical literature in Chapter 4 it was decided that the theory of political ecology held the most promise and provided the most useful conceptual tools and insights to make sense of the dynamics of the Mae Moh conflict and a most useful lens with which to analyse the primary and secondary data gathered in the fieldwork for this thesis. The political ecology framework (Orsato, Den Hond and Clegg 2002) further assists with the analysis of EGAT's responses and other factors framing these responses.

The fundamental level of the analysis is within the organisational sphere, particularly that of EGAT, but also of government and NGO organisations. By doing so, the researcher is provided with a conceptual framework to identify, investigate and analyse relations that

would generally be disregarded as a component of the traditional approach of an industrial discipline.

From the political ecology analysis, it was observed that other players in the case study do not have the capacity or the power to influence the government as persuasively as EGAT. The implications are that the history of the dispute and its outcomes at various stages were moulded by the unequal power relations, behaviours and actions of the players. In addition, the political ecology analysis enables the visibility of the influence of each component of the circuit such as the law, the major NGO with connection to the human rights figure and Greenpeace, and local residents with power to affect the survival of the power plant.

Consequently, the political ecology analysis is critical to identifying and inspecting the sometimes contradictory unequal power relations that played out during the environmental conflict at Mae Moh and was central to allowing this thesis to understand and analyse the dynamics of the conflict over time. The political ecology theoretical framework thus assists critically in reaching the primary goal of this research and answering the key research questions of this thesis.

8.5.2 Lessons from Mae Moh environmental conflict case study

The case study gives an example of how a Thai state enterprise manages to continue its operation after being associated with an instance of environmental degradation. The case study also reveals possible influence of a foreign NGO in the results of the conflict, possible reasons why the OHPRN appears as EGAT's opposition, insights into how businesses and state enterprises could gain acceptance or legitimacy from local residents and that the law also provides space for the third sector to participate in decision-making process in the Thai context. In addition, it offers guidelines for a CSR scheme that could benefit businesses and state enterprises in developing relationships with local communities.

Further, as non-homogenous interest groups, the villagers also developed disputes between themselves. As for the public sector, this played an essential role with its ability to make improvements in environmental standards for the people and to facilitate a state enterprise. As Chapters 6 and 7 outlined, the Thai cultural context of relations of patronage and familial connection and local social networks also shaped the uneven dynamics of the dispute and the outcomes at different times for different groups of villagers.

The contribution that this thesis makes to the literature on managerial responses to environmental conflict is to be found in its focus on the way that the specific political ecology of Thai society shapes the unequal power relations that emerged as the environmental conflict developed, and that shaped the outcomes of this conflict. More specifically, this thesis has demonstrated how CSR is invoked and utilised in the context of a semi-government authority like EGAT in a less-developed nation like Thailand. The unequal power of EGAT, and its support within the formal and informal power and legal structures of Thai society, meant that the local opponents, and the third-sector organisations that represented them, gained some concessions but lost the ‘war’. The nature of concessions—who among the locals benefited compared to others in the form of compensation—was also shaped by matters of patronage and influence, another example of the nuances of unequal power structures within the local themselves, and an example of the specifically Thai political ecology that shaped the dispute and its outcomes.

The Thai context is very different from that of Western societies because Thai cultural norms and relationships, influenced by patronage, shaped both the nature of the environmental conflict, the agency of the villagers’ response to the environmental impact of the power station, and the possible range of compromise solutions that EGAT was able to develop. Additionally, it is important that management theory consider case studies like the Mae Moh environmental conflict in Thailand when developing theories and practices related to environmental conflict around the globe, as these will escalate in future and become an increasing concern of management everywhere.

8.5.3 Thai insights and the roles of NGOs and CSOs

The driving force in the Mae Moh dispute was the need for EGAT to take advantage of local supplies of coal discovered in Mae Moh and for the power plant it constructed to continue its operation at Mae Moh, supplying energy for local and regional economic development and to contribute to the energy supplies critically needed to sustain Thai economic growth.

At the same time EGAT was subject to Thai law—including environmental law—and needed to respond to their stakeholders and their actions. The interactions are guided by Thai culture and customs. A part of this culture and these customs is the patron-client relationship.

In the analysis of the power relations in this case study, it is crucial to examine the influence of parties involved. The dominant player is EGAT. As stated earlier in the chapter, EGAT had to gain acceptance in order to continue the production in Mae Moh. EGAT is a state-

owned enterprise and well connected to the public sector. Despite the fact that it had political power on its side, EGAT had to negotiate with governmental organisations and cooperate with administrative procedures and practices at all stages of the environmental dispute. EGAT's dealings with villagers and NGOs were also constrained by formal and informal Thai procedures and protocols. In other words EGAT's power was not unfettered. This political and cultural reality shaped the course of the environmental dispute.

In the Mae Moh case study explored in some detail in this thesis, the obligatory passage points are shifted due to the Royal Forest Department's Regulations. It placed an external constraint on EGAT by endorsing the public to engage in projects' decision-making practice as stakeholders.

This in turn permitted NGOs and CSOs to become more active in their opposition to the negative environmental impacts of the Mae Moh power station and permitted them to draw on regulations and procedures to force their presence and to provide forums and avenues to present their arguments to EGAT and to government departments. Therefore, EGAT has to manage the third sector with various constraints.

In addition to being well connected with the private sector, EGAT also received assistance from governmental agencies for the establishment of the ERC for the management of the Power Development Fund and the cooperation from the Royal Forest Department with resettlement. These quasi-legal and government institutional forums permitted EGAT to find ways of appeasing local opposition as it dedicated a large amount of its profits towards funding local projects through multiple organisations.

A major NGO involved in this case study, the Occupation Health Patients Network, has a good relationship with Greenpeace, an international NGO. It was seen that Greenpeace and the Occupation Health Patient Rights Network shared information and benefits.

Some the other CSOs involved are funded by EGAT. They appear to have good relationships with EGAT. They are directed by political figures; for example, the PDA is founded by Mechai Viravaidya, a former senator, and the Mae Moh Development Association is headed by Panida Thaksinapimuk, sister of Pisit Taksinapimuk (President of Na Sak's Subdistrict Organisation). Along with the OHPRN, they also take part in applying to receive funding from the Power Development Fund. However, they do not oppose EGAT, unlike the OHPRN, who when they are not granted financial support, become hostile towards EGAT.

As for groups of villagers, they could directly make demands via EGAT's voluntary unit and usually they would receive funding or other forms of support from EGAT. Hence, they are seen as interest groups.

It is understood that overall, at the local level, EGAT is accepted by the residents and most NGOs or CSOs. It can be seen that EGAT also has contested legitimacy after its compliance with legal standards; that is, pollution control and other types of CSR initiatives. The result here is that EGAT is welcome to remain in Mae Moh.

From a Thai perspective, EGAT, as a state enterprise, held the upper hand through its unequal power: in negotiating with the public sector to ensure that the compromised outcomes benefit them in the sense that they were able to continue to generate energy at the power plant while also dealing with state regulations, which also provide EGAT with legitimacy in managing its stakeholders. At the same time, environmental concerns are now being used for groups to negotiate with EGAT and make demands. Due to the interests involved, villagers and NGOs or the third sector also have conflicts among themselves, as competitors for resources. Over the course of the dispute EGAT managed a series of conflicts by compensating some groups of villagers and providing concessions at various points along the line. They negotiated constraints over their actions with the state sector that nevertheless have provided the basis of their unequal power that ensured that the basic interests of EGAT dominated the dispute.

8.6 Addendum

While writing this thesis a paper was published (Chumporn & Kamolvej 2015) (in Thai) on a similar topic. Whereas many of the observations are similar, the results presented in this thesis differ from that paper in the following important ways: the article reports on two case studies, the power plant and a dam; it does not truly give voice to the third sector and does not address issues other than conflict resolution methods; and it does not acknowledge the existence of NGOs in the Mae Moh case study, and it appears to favour EGAT.

8.7 Suggestions for future research

This case study's findings provide several opportunities for future research. For instance, future research could explore the extent to which EGAT or another state enterprise could influence national policies and regulations. More broadly it could examine the effectiveness of state enterprises in managing conflict in communities they are meant to serve.

Although this research contributes to the management literature specifically regarding conflict resolution in Thailand, it can be expanded by further research investigating the impacts of state enterprises on a set of specific national policies and regulations in other nations, or by examining an organisation's responses to conflict in communities it is responsible for. These studies should stimulate a greater degree of generalisation. In addition, further studies could examine the extent to which a private organisation might influence a set of national policies and regulations, and this would allow for further comparisons.

9 References

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Appendix 1

Interview questions for management from the first phase:

1. What were the major issues disputed between EGAT's power plant, coal mine and the local residents?
2. Why do you think the conflict occurred?
3. What is your opinion on this conflict?
4. What were the villagers'/NGOs' complaints and demands?
5. What were EGAT's responses to the villagers?
6. Did you think the conflict was resolved? How? If not, why not?
7. What do you think could have been done to prevent the conflict?
8. What are your thoughts on the Court's decision?
9. Did you think that the community got to participate enough in the decision-making process?
10. What are the things you would like to improve in regards to community participation?
11. What changes do you notice after the Court made the decision?
12. If EGAT had implemented the suggestions from the local villagers, would any one benefit from the implementation? How?
13. What do you think would have been the best way to solve this dispute?
14. Why do you think the government decide to give EGAT permission to expand Mae Moh plant after the environmental degradation in the past?
15. Does EGAT practice corporate social responsibility? If yes, how?
16. Please explain how management is considerate towards the environment; e.g., policies or procedures.
17. Have you heard of the triple bottom line? If yes, does EGAT adopt the concept and how?

18. What lessons did EGAT learn from this dispute? What guidelines for the future result from it?

19. Do you think there were any political aspects concerning management decision-making of EGAT in resolving the disagreement?

Appendix 2

Interview questions for villagers from the first phase:

1. Were you in Mae Moh at the time of the conflict?
2. Which village did you reside in at the time?
3. What were the issues disputed between EGAT's power plant, coal mine and the local residents?
4. Why do you think the conflict occurred?
5. Were you involved in the dispute?
6. Did you give your feedback? If so, was it implemented? If not, what was the response received?
7. Was the conflict resolved? No, why not?/Yes, how so?
8. What did the case lead to?
9. What do you think could have been done to prevent the conflict?
10. How do you feel about the event?
11. Do you agree with the Court's decision? Why? Why not?
12. Until present, are you satisfied with the changes made by EGAT to compensate for pollution?
13. What do you think would have been the best way of resolving the dispute? Why?
14. Did you think that the community got to participate enough in the decision-making process?
15. Were the procedures appropriate? If not, what could have been improved?
16. If they had followed the villagers' inputs, would the conflict end up having taken place?
17. After the court case, did you notice any changes regarding EGAT, Mae Moh power plant and coal mine or the environmental conditions? What were the changes?
18. If EGAT had implemented the suggestions from the local villagers, would anyone have benefited from the implementation? How?
19. Why do you think the government decide to grant permission to EGAT to expand Mae Moh power plant after the environment degradation in the past?
20. What are the key unresolved issues?
21. Do you think the conflict will continue?
22. Do you think that it can be resolved to your satisfaction?

Appendix 3

Interview questions for NGO representatives from the first phase:

1. Were you in Mae Moh at the time of the conflict?
2. What were the issues disputed between EGAT's power plant, coal mine and the local residents?
3. Why do you think the conflict occurred?
4. Were you involved in the dispute?
5. Did you make complaints to EGAT? If so, how did EGAT deal with the complaints?
6. Are you satisfied with the changes EGAT made until now?
7. Was the conflict resolved? No, why not?/Yes, how?
8. What do you think could have been done to prevent the conflict?
9. How do you feel about the matter?
10. Do you agree with the Court's decision? Why?/Why not?
11. What do you think would have been the best approach to solving the issue? Why?
12. Did you think the community got to participate enough in the decision-making process?
13. Is there any way you would like to improve the participation procedure?
14. If the villagers' inputs were implemented, would the conflict have ended up taking place?
15. After the court case did you notice any changes in EGAT Mae Moh's policy or structure? What were these changes?
16. If EGAT had followed the suggestions from the local residents, would anyone have benefited from the implementation? How?
17. What are the key unresolved issues?
18. Do you think the conflict will continue?
19. Do you think that it can be resolved to your satisfaction?

Appendix 4

Interview questions for management from the second phase:

1. What do you think are the local communities' main objections to EGAT?
2. Who are the main groups opposed to EGAT?
3. What do these groups want EGAT to do?
4. Have these groups been reasonable in their protests? If not, please explain.
5. Are these groups representative of the total local community views?
6. What actions have been taken by EGAT in regards to solving the conflict with the NGOs?
7. What actions have been taken by EGAT since the court case between EGAT and the Occupational Health Patient Rights Network of Mae Moh in resolving the issues raised by the NGO?
8. How did EGAT attempt to deal with this problem? What strategies were used? Any strategies involving the media?
9. How and why did EGAT choose these strategies? Were there any external influences?
10. Why did EGAT choose not to use other strategies?
11. How did EGAT attempt to gain the local residents' trust after the violation of pollution standards reoccurred?
12. How effective are the chosen strategies so far?
13. Why did you think they were the most suitable at the time?
14. Please describe all the changes you notice since the court case between EGAT and the Occupational Health Patient Rights Network of Mae Moh? e.g., production processes, structural changes, environmental improvement and so on.
15. Why was Jit-asa established? What are Jit-asa's responsibilities?
16. If there are other new committees or units established, what are they? What are their functions? What led to the creation of these committees or units?
17. How did villagers and NGOs react to each changes introduced?
18. How does Mae Moh EGAT prioritise and divide its budget?
19. Where does Mae Moh EGAT place the importance of environmental conservation? What's its rank on the list?
20. What do you know about how the Power Development Fund or other forms of compensation have been allocated, who are in charge, how and why?

Appendix 5

Interview questions for EGAT engineers from second phase:

1. What do you think are the local communities' main objections to EGAT?
2. Who are the main groups opposed to EGAT?
3. What do these groups want EGAT to do?
4. Have these groups been reasonable in their protests? If not, please explain.
5. Are these groups representative of the total local community views?
6. What actions have been taken by EGAT in regards to solving the conflict with the NGOs?
7. What actions have been taken by EGAT since the court case between EGAT and the Occupational Health Patient Rights Network of Mae Moh in resolving the issues raised by the NGO?
8. How did EGAT attempt to deal with this problem? What strategies were used? Any strategies involving the media?
9. How and why did EGAT choose these strategies? Were there any external influences?
10. Why did EGAT choose not to use other strategies?
11. How did EGAT attempt to gain the local resident's trust after the violation of pollution standards reoccurred?
12. How effective are the chosen strategies so far?
13. Why did you think they were the most suitable at the time?
14. Please describe all the changes you notice since the court case between EGAT and the Occupational Health Patient Rights Network of Mae Moh? e.g., production processes, structural changes, noticeable environmental improvement and so on.
15. Last time I came here for an interview, it was mentioned that the CSR in-process was actually not seriously implemented. Could you please explain in details?
16. Why was Jit-asa established? What are Jit-asa's responsibilities?
17. If there are other new committees or units established, what are they? What are their functions? What led to the creation of these committees or units?
18. How did villagers and NGOs react to each changes introduced?
19. How does Mae Moh EGAT prioritise and divide its budget?
20. Where does Mae Moh EGAT place the importance of environmental conservation? What's its rank on the list?

21. What do you know about how the Power Development Fund or other forms of compensation have been allocated, who are in charge, how and why?

Appendix 6

Interview questions for questionnaire NGOs and villagers from the second phase:

1. What has been the impact of the EGAT power station on your life? What do you think will be the impact on your children? On your community?
2. Have you been satisfied with the information provided to you by EGAT over the development of the site?
3. Have you been consulted by EGAT? If so how?
4. Are you happy with the compensation arrangements put in place by the government? What are they? If not happy, why not?
5. What are the main issues of conflict between EGAT and the community?
6. What actions have been taken by EGAT in regards to solving the conflict with the NGOs?
7. What actions have been taken since the court case between EGAT and the Occupational Health Patient Rights Network of Mae Moh in resolving the issues raised by the NGO?
8. How did EGAT attempt to deal with this problem? What strategies were used? Any strategies involving the media?
9. How and why did EGAT choose these strategies? Were there any external influences? If so, please explain.
10. Why did EGAT choose not to use other strategies?
11. Please describe all the changes you notice since the court case between EGAT and the Occupational Health Patient Rights Network of Mae Moh? e.g., production processes, structural changes, new committees or units, noticeable environmental improvement and so on.
12. How did villagers and NGOs react to each changes introduced?
13. What do you know about how the Power Development Fund or other forms of compensation have been allocated, who are in charge, how and why?
14. Do you think this compensation fund is adequate and fairly distributed?
15. What do you think about the extent that EGAT is committed to environment conservation?
16. What changes to EGAT would you like to see in the future?