Corporate Social Responsibility At Nine Multinational Electronics Firms In Thailand: A Preliminary Analysis

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Acronyms - State

DIW	Department of Industrial Works (in: Ministry of Industry)
IEAT	Industrial Estate Authority of Thailand (in: Ministry of Industry)
MOLSW	Ministry of Labor and Social Welfare
MOI	Ministry of Industry
MOSTE	Ministry of Science, Technology, and Environment
PCD	Pollution Control Department (in: Ministry of Science, Technology, and Environment)

Acronyms - Civil society

AP	Arom Pongpa-ngan Foundation
CPE	Center for Political Economy at Chulalongkorn University
FOW	Friends of Women Foundation
NPIID	Network of People Impacted By Industrial Development
TEI	Thailand Environmental Institute
WEPT	Council of Work- and Environment-Related Patients' Network of Thailand

Abbreviations

OSH	occupational safety and health
CSR	corporate social responsibility

Executive Summary

This study examines corporate social responsibility at nine multinational electronics firms in Thailand. Two of the nine firms are Japanese owned: LTEC (Fujikura Group) and Murata. The remaining seven firms do significant business in California: Seagate, Advanced Micro Devices, Read-Rite, IBM Storage Products, Lucent Technology, and Hana Microelectronics (Thai-owned), and Philips Semiconductor. Three of these–Read-Rite, Seagate, and IBM Storage Products—make hard-disk drive components; the other four assemble and test semiconductors. None fabricate semiconductor wafers.

The study is focused on environmental health and safety management and on labor relations. Research methods are based largely on interviews undertaken between June and August, 2000 with labor union officials, government officials, firms, and NGOs. While insightful, the findings here are preliminary and should be treated as hypotheses that deserve further exploration.

The first section of the study outlines the research questions and methods and describes the current political and economic context in Thailand.. Section Two examines environmental and occupational health and safety regulation in Thailand. The concept of regulation encompasses both governmental and voluntary measures, including the role of ISO 14,001 and emerging civil society interactions with electronics firms aimed at enhancing performance. Section Three outlines questions for further research and offers some reflections about the role of civil society organizations in enhancing corporate social responsibility in the high tech sector.

I found that corporate social responsibility—which is the product of ongoing interactions between the state, firms, and other civil society actors—has improved in Thailand's electronics sector during the 1990s. U.S. firms appear to be among today's leaders, although their practices have been uneven over time, and vary between firms today. The gap between firms today, however, appears to be less than the difference between the performance within a particular firm (e.g. Seagate Technologies) a decade ago versus today.

Notwithstanding controversial worker illnesses and deaths at two of the firms I visited (Seagate in 1991; Murata in 1993), electronics is generally spoken about as a "clean" industry. Union leaders in other industries claim that Thai workers, especially in today's context of high unemployment, would be happy to work there. The industry employs tens of thousands of machine operators, the vast majority of whom are females in their teens and 20s with some high school education. Wage and non-wage benefits appear to be greater than other comparable manufacturing sectors. Only one of the nine firms (Philips) has a union. I did not discern any current attempts to unionize workers at the other firms.

Thailand implements its pollution control laws in a manner that fragments control between regulatory agencies.[1] For example, until quite recently the Industrial Estate Authority was the lead agency for regulation within factory walls located in industrial estates. The Department of Industrial Works however announced earlier this summer that it will now lead occupational safety and health inspections inside industrial estate factories.

Progress towards changes in corporate governance to enhance social responsibility increasingly takes place via voluntary measures. The firms I studied were drawn into ISO 14000 certification because of customer demand, but they tended to be less interested in demanding certification from their vendors. Strong interest in occupational health and safety (OHS) certification (e.g. British Standard 8800, Thai Industrial Standard [*Mor Or*] 18000) was evident at only two of my nine firms. Lack of customer interest; the draft status of ISO 18000; and the presence of strong internal OHS procedures were three common reasons cited by the U.S. firms that are hesitant about investing in third party OHS certification at this time. Firms invariably were proud of their in-house health clinics. Some firms used the hall space surrounding their clinics to report statistics on occupational illness by plant sub-sector, as well as to disseminate preventive health information. On the other hand, none of the firms appear to post health hazard disclosures (as they would in the U.S.). Aside from the ISO certification agencies, there is no third-party monitoring of company performance.

Civil society actors, both issue-based (e.g. labor and women's NGOs) and locality-based (e.g. neighborhood workers' associations) are two of many potential "third parties" that have an incentive to participate in improving corporate social responsibility. Currently, however, many interactions between firms and civil society actors are structured around post-accident conflicts (e.g., the Kader factory fire; protests at Seagate). Furthermore, the participation of weaker parties is routinely circumscribed.

One issue limiting more effective engagement by labor and other civil society groups is the lack of information about occupational hazards. The medical data on the physical condition of electronics workers is private property. It is summarized and reported back to firm headquarters, and to the Department of Hygiene (Ministry of Public Health). Firms in Thailand do not readily part with such data. Not surprisingly, independent research on occupational health and safety issues is relatively rare. It would be considered a sensitive topic for industrial estates and firms that have suffered worker illnesses in the past. It is unclear whether the enthusiasm towards voluntary certification leads to greater willingness to cooperate with new academic research.

An advocacy network comprised of activist academics and NGOs is pressing for reform, especially on occupational health and safety. Currently, two competing versions of a bill

[1]David Sonnenfeld: "Civic and Corporate Environmentalism in the Context of a Weak State: Implementation of Pollution Control Legislation in Thailand." Lecture Delivered at Chulalongkorn University, Environmental Research Institute. June 7, 2000.

would establish a new institute that would implement occupational health policy and manage the workers' compensation fund more transparently. However, the issue has moved slowly over the past three years. This year the advocacy network will face a new government led by Prime Minister Thaksin Shinawatra. Meanwhile the advocacy network continues to seek redress for industrial accidents such as a Cobalt-60 radiation leak in February 2000 and a major explosion at a Chiang Mai fruit processing plant in December 1999.

One organization, the Friends of Women foundation has expressed an interest in partnering with the California Global Corporate Accountability Project to initiate a dialog with the electronics industry. The more analysis-oriented Thailand Environment Institute is another potential partner. However the incentive for Thai subsidiaries, in a historically closed sector, to participate in American roundtable-style "dialog," with unknown NGOs, needs to be clearly specified.

The preliminary findings in this report suggest a set number of outstanding questions that deserve further investigation. These questions revolve around how electronics firms in Thailand, and the state agencies, are likely to respond to calls from civil society actors for more information. Some firms might host research framed to uncover knowledge about the lifestyle, reproductive choice, and work determinants of their employees' health.

The Thai government's ability to design, implement and monitor environmental health and safety practices is still weak. Voluntary measures remain important.[2] However, Voluntary and informal modes of regulation tend to create customized discourses and procedures at the firm level. One potential weakness is that these practices may diverge from best practices of risk assessment and minimization that could be produced via more rigorous and transparent oversight, and by more open dialog with third parties in general. One basic unanswered question is whether today's voluntary corporate environmental health and safety systems actually reduce the risk to workers of chronic occupational illness. Absence of independent third-party research and monitoring of company performance contribute to this gap in knowledge.

The report recommends that civil society actors interested in participating more in corporate social responsibility should identify and cultivate ties with reform-minded individuals in the Thai government, using credible allies to motivate environment and health agencies to a higher standard. Secondly, in the domain of OHS they should advocate for up-to-date science-based standards and policies. Finally they may consider developing the capacity to sponsor or conduct applied research that furthers their purpose.

[2] David Sonnenfeld, ibid.

I. Introduction

Interest in corporate social responsibility (CSR) has grown in the last two decades, particularly among nongovernmental actors and citizens in advanced capitalist countries. That interest stems in part from a growing recognition that the current relations between nation-states, corporations, and civil society have changed. The modern industrial corporation is now thoroughly transnational in scope and impacts. Its power has arguably grown: given a context of emerging consumer markets, increasingly flexible production, and an expanded geographic search for cost-effective production, the power of states and societies to dictate conditions of production to corporations has changed in complex ways. The current NGO movement to demand increased transparency and public accountability from large corporations is one such relational change.

CSR can be defined as the set of practices and behaviors that firms adopt towards their labor force, towards the environment in which their operations are embedded, towards authority, and towards civil society. This definition of CSR focuses primarily on what firms actually do in these domains (as opposed to what ought they ought to do).[1] Corporate social responsibility is the product of ongoing interactions between the state, firms, and other civil society actors.

This study attempts to convey both the historical dynamism and the cultural specificity of CSR in Thailand. I studied corporate social responsibility at nine multinational electronics firms in Thailand. Six of these firms have significant commercial ties to California: Seagate, Advanced Micro Devices, Read-Rite, IBM, Lucent Technology, and Hana Microelectronics (Thai-owned). Three of these companies make hard-disk drive components; three assemble and test semiconductors. None fabricate semiconductor wafers. I focused on environmental health and safety management and on labor relations.

1-1 Research Questions and Methods

My research questions consist of the following sets of questions.

- What practices are firms using to reduce environmental impacts; to comply with laws; and to build trust with their neighbors?
- What current political and economic contexts are relevant to understanding the electronics sector?
- What state agencies regulate electronics manufacturing?
- Who are the civil society actors that are currently involved in defining Corporate responsibility?
- What kinds of interactions (adversarial, cooperative) have occurred between these actors and firms?

[1] Of course CSR has a normative element. But the normative is viewed, in this study, as a social practice deserving explanation (as opposed to a self-evident set of standards to which firms either adhere or deviate).

- What conceptual approaches, strategies, and tactics should new actors interested in participating in Corporate responsibility adopt?

To build a basis upon which these questions can be explored, I chose to focus on corporate social responsibility practices at nine multinational electronics firms in Thailand. Six of these firms clearly have significant commercial ties to California: Seagate, Advanced Micro Devices, Read-Rite, IBM, Lucent Technology, and the Thai-owned Hana Microelectronics. Seagate, Advanced Micro Devices, and Read-Rite have headquarters in Northern California. Lucent and IBM, although not headquartered in CA, sell significantly in CA. Hana has a sales office in the Southern Bay Area. Philips Semiconductor, though a different entity from the Philips consumer electronics corporation, sells to the latter which does significant business in California as well.

Of the remaining three firms I studied, two were chosen because to provide regional contrast: LTEC [Fujikura Group]) and Murata are located in the Northern Region Industrial Estate, Lumphun Province (approximately 40 minutes drive from Chiang Mai.) Philips was also of special interest because of its longstanding labor union, as well as its reputation for cooperating with outside researchers. Three of these companies (Seagate, IBM, Read-Rite) make hard-disk drive components; the remainder assemble and test semiconductors or integrated circuits. None fabricate semiconductor wafers.

I focused on occupational health and safety (OHS) management and on labor relations. Since I had no prior relationship with informants, I chose to collect data using interview methods, rather than attempt to administer surveys to relative strangers. I base my findings therefore on interviews (with labor union officials, government officials, firms, and NGOs); analysis of documents; and on limited factory tours. All nine firms contacted consented to give interviews, and these were held at their factory. (Hana has three factories, I visited the plants in Ayuthaya and Lumphun.) Six of the nine firms visited provided, in addition, plant tours. The firms that did not—Murata, RR, and AMD—were all new contacts. In four of the nine cases—Hana, Lucent, Murata, and LTEC—the contact was initiated by, and the joint interview was managed by, my colleague Professor David Sonnenfeld. The reader should treat these findings as hypotheses to be explored further by interested parties.

1-2 Current political and economic contexts

I conducted my research during a period of palpable political instability and social dynamism. In late June 2000, members of various opposition parties resigned en masse from parliament to pressure the administration of PM Chuan Leekpai (Prachatiput [Democrat] Party) to resign. The main opposition parties are Kwaam Wang Mai [New Aspiration]; Chart Pattana [National Development]; and Chart Thai [Thai Nation]. In addition, telecom tycoon Thaksin Shinawatra recently formed a new party called Thai Rak Thai [Thais Love Thailand]. Although some

of its ranks include deserters from other parties (The Nation, July 18, 2000) the party won a plurality of seats in elections held January 6 this year.

The mass resignation of opposition MP's last June triggered a number of prominent public meetings, including a mass rally in downtown Sanam Luang calling for Chuan to hold elections promptly. In addition, the national instability in 2000 appears to have heightened ongoing mobilization against many regional development projects, including the Pak Mun Dam, the proposed Thai-Malay (JDA) gas pipeline, and the proposed Klong Dan sewage treatment plant.[2]

In part, the Chuan government's unpopularity can be traced to the adjustments Thailand has had to make to its financial crisis and recent recession. The crisis began in July 1997 with speculative attacks on the Thai baht. It quickly became a crisis of short-term liquidity that led to the discovery of a large proportion of bad loans and in turn to the collapse of financial institutions. The liquidity crisis in the economy ushered in a recession. One effect of the crisis has been to spur reform of elite lending and asset management practices towards greater transparency. On the other hand, the IMF intervention that restored monetary stability came bundled with unpopular fiscal austerity measures. According to the conventional economic indicators, the worst of the economic and financial crisis is officially over. Since 1999, GDP growth has been positive (e.g., 5.2% in the second quarter of 2000) whereas it declined sharply in 1998 (The Bangkok Post, 10/13/2000.)

Although Thailand's manufacturing sector appears to be emerging from recession, wages have not increased in some industries, e.g. the textile industry. Despite the resumption of manufacturing and trade, job markets, especially for recent graduates, appear tight. The Bangkok Post reported earlier this summer that recent college graduates in engineering and sciences have difficulty finding work at their skill level. The crisis has clearly touched a nerve in social and political consciousness. Populists (including His Majesty King Bumiphol) and leftists intellectuals have responded by framing the crisis as an emblem of how imbalanced pursuit of rapid growth and export-oriented industrialization can injure society. As the economy slowly revives, activists have sought to win new labor, health and safety concessions (see Section 4.4 below).

The government's Board of Investment (BOI) , on the other hand, has responded by sponsoring publicity campaigns to woo foreign capital back into the country (The Bangkok Post, 7/12/00). To revive real estate and banking sectors depressed by the crisis, BOI is attempting to facilitate investment in 50,000 rai of vacant space in all industrial estates nationwide. According to The Bangkok Post: "Mr. Staporn [Kavitanon, head of BOI] said the BOI had been visiting many large foreign companies and inviting them to invest in Thailand, especially in industrial estates where environment and safety standards could be controlled." Industrial estates provide centralized water and power, wastewater treatment facilities, and,

[2] See *The Bangkok Post* online archives www.bangkokpost.net.

for exporters, processing zones that allow exemption from taxes for five years. Many electronics firms are located in these industrial estates.

In addition, spurred in part by the upcoming elections, the Chuan administration unveiled a wide range of fiscal stimuli on October 24, 2000. Chuan's package to cabinet appears to placate a number of constituencies, ranging from manufacturers to employees to self-employed. For example, the package includes proposals to slash import tariffs on products and parts required for use in the electronics industry. It includes a proposal to increase the flow of loans to specialized lenders, including the agrarian Bank for Agriculture and Agricultural Co-operatives. As well, the administration proposes to design a retirement mutual fund system for farmers and other self-employed people (The Bangkok Post, 10/24/00).

Against Thailand's current backdrop of economic and political instability, electronics emerges as one of the economy's brightest sectors. With growing sales in dollars, and their largest expense, labor, paid in stagnant baht, the result is stronger profit margins. Sales growth can be attributed to various factors, including strong demand for mobile phones, and the strong US economy. The baht hit a nine-month low against the dollar earlier this summer, and according to one source, is expected to continue its decline. The baht's fall against the dollar is tied to foreign debt repayment, and capital outflows triggered by low interest rates. The Nation, July 11, 2000.)

Of the nine firms I studied, all appeared to have openings for technicians and engineers. In addition, all save for Seagate (which has laid off workers recently as part of automation) appeared to have openings for machine operators and entry-level factory workers. I was told by several electronics firms that assembly worker turnover, normally a challenge, has been much less in today's post-crisis climate. Workers are not willing to quit their electronics factory jobs for self-employment, household work.

1-3 Labor relations in contemporary Thailand

Labor relations in contemporary Thailand must be seen against its historical context. That history can be summarized as one of authoritarian government from the late 1950s through to 1992. During this time the military dominated Thai politics and unions—construed by the elite as culturally un-Thai and communist—were controlled and infiltrated by via patronage networks. When student-led pro-democracy protests erupted in 1973 against field marshal Thanom Kittikachorn, an unpopular military leader, led to massacres, the King intervened to install a civilian leader. Some unions emerged during this brief window of parliamentary government, 1973-1976. The union at Signetics, now Philips Semiconductor, was established during this period. The window of democracy ended in 1976 when student protests over Thanom's return from exile led instead to a military coup, and a two-year period marked by violent repression of students, peasant leaders, and union leaders. During this time, leftist students,

activists, and union leaders were violently persecuted, and many chose to flee into the forests. A subsequent détente in Thai politics occurred under military leaders who found that patronage of labor federations advantageous to maintaining legitimacy.

By 1990, following almost a decade of rapid economic growth and the rise of powerful business elites, Thailand had an elected, civilian prime minister. Despite a military coup against him, Thailand returned to democratic rule following the events of "Black May 1992," when street protests against the coup were forcibly mishandled, leading to a second royal intervention. Most analysts believe that the events of Black May 1992 mark a modern milestone in Thai democratization, specifically the creation of civil society organizations capable of de-legitimizing any future attempt by the military to hold office.

More recently unions have been framed as impediments to economic reform (in the case of state enterprise unions), or as irrelevant (in the case of electronics sector). The unionization rate, at 3%, is much lower than the US (~14%) or Malaysia (9%). Thailand's strongest unions tend to draw their strength either from having fought and won support from the state (as in state enterprise unions such as the railroad workers union), or from foreign employers (e.g. the union at Philips Electronics, and the one at Japanese-owned electrical coil maker Thai Yasaki). In addition, further weakening the union movement, is the presence of number of multiple peak-level organizations (labor federations and councils) each representing a fraction of the small, unionized workforce. These labor organizations have been criticized for their lack of political agency (Voravidh, 2000).

According to labor activists, some employers have seized on the lingering effects of the crisis as an excuse to defer workers' demands. (I observed the Arom Pongpa-ngan Foundation, in conjunction with some academics from Chulalongkorn University's Center for Political Economy, planning a new public seminar titled "Saetagit fuen, tae kon mai fuen" ("The economy's recovered, but people haven't.") Shortly after I arrived in Thailand, workers at Thai Kriang Textile Co. went on strike to demand their first wage increase since the crisis. Despite long sit-ins and negotiation, the union was unable to get its demands met. Management sought to fire the strikers; they finally appealed to be reinstated. Government was criticized for not playing a more active mediation role to mediate a bitter and occasionally violent strike. Thai Kriang was seen as a bellweather for Thai labor relations. NGO activists I met with worried that if a longstanding union could not assert itself on behalf of its workers what hope was there for other labor mobilizations?

By contrast with the unhappy events at Thai Kriang, union leaders at two other companies I visited reported happier industrial relations. The two companies were in different sectors: Thai Yasaki, a maker of heavy-duty aluminum and

copper electric wire, a relatively mature market niche. Philips Semiconductor makes IC's for sale to its mother company and to other vendors.

One feature common to both unions is their longevity, which is linked to and attests to the longstanding commercial presence of the firm in Thailand. A second feature is union presence elsewhere in the mother corporation. As a result of both these features, I found myself visiting with union representatives with dedicated office space, officially allotted time for union activities, good interpersonal skills, and negotiating experience.

One consequence of these structural and organizational endowments was the ability of union leaders at Philips to provide me with union-management agreements going back to 1990.[3] The first clause of the most recent agreement I was provided (1998) raises the minimum daily wage for both "daily" employees and permanent employees by 10 baht per day, an increase of 22 baht per day over the 1996 daily wage. The other clauses include compensation rules for lay-offs (more money than mandated by the Thai Labor Protection Act of 1998); motivational and year-end bonuses; and a group health plan.

Against a political context not conducive to economic unionism, these enduring strong unions appear to be exceptional examples. Moreover, they occasionally provide advice to other unions engaged in industrial disputes. For example, the evening I visited the union at Thai Yasaki I was invited to sit in on a meeting between that union and labor leaders from the Thai Kriang Textile Co. factory down the road. Both unions belong to an association organized to promote labor rights in a given [geographic] industrial district. In the absence of effective higher-level labor organizations, these district-level workers' associations (kloom puu chai raeng ngan nai yaan) provide some of the missing coverage of everyday labor relations issues. The forms of engagement in district-level association activity however vary by district. The Philips Union, for example, voted to decrease its annual financial contribution to its association.

II. Environmental and Labor Standards in the Thai High Tech Industry

2-1 State regulation of industry

Table 1.

Domain	Law or Regulation; Regulatory Agency/ies	Requirements/Provisions
Industrial permitting; Risk assessment; Risk management	Factories Act, 1992. Dept. of Industrial Works	In order to receive and renew their Letter of Authorization to operate, firms must supply map of showing

[3] "Agreement on conditions of employment between Philips Semiconductor Thailand and Philips Semiconductor Union" (in Thai), 4 pp.

	(Ministry of Industry).	location of schools, hospitals, roads, and other features in a 500 m. area surrounding their facility; must identify and assess risk of structures from which fire, explosion, hazmat leakage may occur; must supply data on accidents and injuries. Electronics firms must also supply risk and accident management plans. Exception: firms located in Indl Estates are not regulated by this Act. They are regulated instead by the Indl Estate Authority (Ministry of Industry).
Occupational safety: codes of conduct	Employee Safety Protection Acts, Ministry of Interior Regulator: Dept. of Labor, + Dept. of Industrial Works (?)	A set of 15 laws regulating procedures to be used when dealing with: industrial and construction equipment; hazardous chemicals; construction sites; confined spaces, etc.
Occupational safety: Inspections, Safety committees	Employee Safety in the Workplace, 1997 Declaration, Dept. of Labor. Sections 139-142, Act of 1998. Dept. of Labor.	Mandate that firms create internal Safety Committees, representing operators, foremen, managers, and professional safety officers. Authority and duties of government safety inspector.
Pollution control	Environmental Quality Protection Act, 1992. Pollution Control Department (Ministry of Science, Technology, and Environment; "MOSTE")	Regulates solid waste, and emissions to air water outside factory walls. Regulations exist for water quality parameters: BOD, DO, TSS, coliform, and some heavy metals. By contrast regulations still do not exist for other toxicants, such as dioxins. Except: Releases outside factory walls but within an Indl Estate are regulated by Indl Estate Authority.

Domain	Law or Regulation; Regulatory Agency/ies	Requirements/Provisions
Employee health	Public Health Act, 1992. Dept. of Occupational Health (Ministry of Public Health).	Employer shall provide physical exams for workers in hazardous occupations. Employer shall comply with other measures announced by the Minister to regulate 100 types of hazardous occupations.

According to Bundit (2000), regulation of environmental health and safety laws in Thailand's electronics factories is complicated for several reasons. Firstly, the presence of statutes with overlapping provisions creates ambiguities, as well as hindering interpretation and compliance.[4]

For example, Table 1 shows that for firms within industrial estates, the IEAT regulates firms that would otherwise be regulated by Pollution Control Department and by the DIW. While IEAT and PCD appear to use a common suite of environmental parameters for water quality regulation, the fact that they are different organizations with different orientations and presumably professional expertise, implies that similar regulatory outcomes cannot be assumed.

Secondly, potential problems arise from weak linkages between employees and information to which the firm is privy. For example, by law employees do not have a right to know about occupational hazards, nor do they have a right to decline certain types of work. When employees are given physical exams, they do not have the ability to choose the physician or the scope of examination (Bundit, 2000). They apparently do not have a right to access their medical record.

In addition to controlling occupational hazard and medical information, firms in non-unionized plants—i.e., most plants—have the discretion to choose which employees sit on the mandated employer-employee Safety Committees. Employees are not required by law to participate in plant inspections by the government safety inspector. According to Bundit (p. 23), the Department of Labor has one inspector per 1007 sites (or 1 per 22,888 employees).

The Department of Labor is not the only state agency whose mandate might be improved by stronger field surveillance. Responsibility falls to one centralized agency, PCD, to regulate some of Thailand's pressing and recurrent environmental problems. According to Sukran et al. (1999), these recurring nuisances in Thailand include: illegal dumping of industrial waste; chemical accidents—either sporadic releases or chronic nuisance emissions; and non-point source biological pollution of rivers. A combination of factors appear to have

[4] David Sonnenfeld, ibid.

caused these problems: rapid expansion of industry, firm-level cost minimization, weak regulatory oversight, and lack of industrial zoning (Bello et al., 1998).[5]

PCD has an enormous mandate. During the past seven years, the agency has promulgated 25 new environmental quality standards, including standards for general air quality, general coastal and surface freshwater quality, waste incinerators, factories, vehicles, and residential communities. In addition, the agency has generated, and appears to give priority to, action plans to reduce air pollution (urban dust, vehicles, coal-fired plants).[6]

A second set of action plans by PCD attempts to improve water quality, in particular in problem rivers such as the Nam Pong and the Chao Phraya, while a third set of action plans covers solid waste (including usage of hazardous chemicals by farming households and industry). All action plans appear to combine command and control methods; outreach to citizens and firms, new initiatives to train regional inspectors in solving air quality problems, and new investment in waste water treatment plants. In addition, the agency has been trying to sponsor the study of clean technology adoption, as well as implement a "polluter-pays principle."

2-2. Voluntary measures

In the context of Thailand's weak state regulatory apparatus, CSR practices increasingly takes place via voluntary measures.[7] This section provides an overview of the experiences the nine firms the nine firms I studied had with two types of voluntary standards: environmental management (ISO 14000), and OHS management (via a number of standards, including the developing ISO 18000). I discuss the motives interviewees disclosed for getting certified; the discernable environmental impacts; and firm benefits and challenges.

According to ISO, a standard is a "documented agreement containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that materials, products, processes and services are fit for their purpose." ISO sees its standards as "voluntary" in the sense that standardization is driven by market institutions (and specifically their sectoral logic).[8]
When it comes to environmental management however, ISO's definition of a standard as a document containing "precise criteria" is somewhat misleading. As ISO states:

[5] David Sonnenfeld, ibid.
[6] I derived this information from PCD's "Key Achievements: Seven Year Report." The order, detail, and style in which its projects, accomplishments, and planning vision are presented gives a sense for PCD's priorities and secondly an indication of issues it is confronting. See: www.pcd.go.th
[7] David Sonnenfeld, ibid.
[8] See www.ISO.ch

"Tens of thousands of businesses are implementing ISO 9000 which provides a framework for quality management and quality assurance. The ISO 14000 series provides a similar framework for environmental management."

"Both ISO 9000 and ISO 14000 concern the way an organization goes about its work, and not directly the result of this work. In other words, they both concern processes, and not products – at least, not directly. Nevertheless, the way in which the organization manages its processes is obviously going to affect its final product. In the case of ISO 9000, it is going to affect whether or not everything has been done to ensure that the product meets the customer's requirements. In the case of ISO 14000, it is going to affect whether or not everything has been done to ensure a product will have the least harmful impact on the environment, either during production or disposal, either by pollution or by depleting natural resources." [emphasis added.]

It is interesting to note that in the above, ISO attaches primacy to "the customer's requirements," i.e. the agency of the customer, as the purpose for ISO 9000, whereas it constructs "the environment" in more generic and passive terms.

But managers I interviewed reinserted the missing agency. They stated that their firms decided to pursue ISO 14000 certification for two main reasons: firstly, and most importantly, because of customer demand. Secondly, for the eight subsidiaries, because it was a priority of their parent company. (These motives overlapped in the case where the parent was also a customer of the Thai subsidiary.) The fact that many of the multinational subsidiaries were the first in their corporation worldwide to receive ISO certification can be interpreted as evidence that such voluntary measures are indeed perceived by these firms as important (as well as the fact that efficient supporting organizations [e.g. certifiers] exist in Thailand.

All of the firms interviewed received ISO 9000 certification before ISO 14000. Notwithstanding prior involvement with ISO 9000, firms I interviewed typically took six to 12 months to receive certification. Based on the organization charts and the voluminous documentation I was shown, the process was time- and labor-intensive.

In terms of benefits received, firms mentioned: substantial savings on energy and process water, e.g. via recycling; ability to meet customer demands; and a positive public image. Indirect benefits mentioned included, in some cases, a new affirmation, within the corporation, of the importance of environmental management programs and systems. Managers felt that the main challenge of the ISO process is that it requires "continuous improvement" in order to get re-certified (see next Section).

The ISO 14000 process seems to have allowed all firms to identify opportunities to reduce solid, liquid, and airborne material throughput (influx or emissions to the environment). Secondly, all firms implemented change, beginning with changes that were easiest to make (e.g., using spent potable water on grounds and gardens in the plant; reduction of purified water on the line; recycling of printed circuit board scrap for resale as opposed to disposal in a hazardous waste landfill). Thirdly, other variables clearly affect the direction and rate of change (see Section 4.5).

- ISO 18000

Strong interest in occupational health and safety (OHS) certification (e.g. British Standard 8800, Thai Industrial Standard 18000, and the developing ISO 18000) was evident at only two of my nine firms. Lack of customer interest, the draft status of ISO 18000, and the presence of significant prior commitment to OHS (e.g. internal procedures) were three common reasons cited by the U.S. firms that are hesitant about investing in third party OHS certification at this time.

- Investments in OHS

Firms I visited were proud of their in-house health clinics. Some firms used the hall space surrounding their clinics to report statistics on occupational illness by plant sub-sector, as well as to disseminate preventive health information. (For example, one of the firms I visited mounted information about women's urinary tract infections.)

Firms in addition took certain precautions. Lucent Technology workers get an annual and "special" blood test for Pb. They also disallow women from performing certain tasks once pregnant. The relatively few men who are machine operators generally are placed at machines that require heavier part lifting which (at one firm etching large pieces of flexible circuit) correlated with increased exposure to fumes and noise.

While I assume firms test new applicants for pregnancy it is not clear if pregnancy constitutes grounds for rejecting an application.) On the other hand, none of the firms appear to have posted health hazards disclosures.

- Community relations

Community interactions appear to be the exception rather than the norm. Some firms, such as Lucent, Seagate and AMD, stressed a willingness to meet with members of the community as part of their ISO 14000 process. Others did not

mention it.[9] None of the firms we interviewed appear to have stakeholder consultation or monitoring in place. Environmental monitoring by non-governmental "public interest" third parties appears entirely absent at present.

2-3 Beyond ISO: Incidents at Seagate and Northern Region Industrial Estate

In today's Thailand, systematized voluntary measures such as ISO 14000 are a necessary and important component of CSR, but they do not ensure worker health and safety. In this section I argue that the main limitation of the ISO process is that it remains actor-oriented. ISO goals do emphasize legal compliance and—at least as interpreted by some firms—good community relations, but the approach is still relentlessly firm-centered. What ISO and the firms that promote its voluntary practices do not analyze are the strengths and problems in specific social systems—that is, the specific institutional contexts–in which firms operate.

For example, ISO's requirement of continuous improvement begs the question – primarily, it would seem, of the certifying body – of what constitutes an improvement worthy enough to warrant recertification? A second example involves the force competition and technology change exert – independently of ISO — on process improvement. Several of the firms we interviewed described specific process changes they wanted to see, for example substitution of TCE-based solvents (apparently active in United States), or reduction/subsitution of lead and tin in their processes.

Since these substitutions could be regulated by non-ISO business variables (e.g., rate of investment in new plant technology, customer preferences, changes in equipment maker capabilities) we need to ask how the presence and pursuit of ISO interacts with these other variables (see Table 2). For example, Philips Semiconductor operates in a twenty-year old plant; AMD and IBM operate in plants less than ten years old. Seagate is moving to new facilities in Korat province and automating its line. Plant and technological investment decisions will affect the context in which ISO improvements and EHS outcomes occur.

[9] However, since I chose not to probe managers neglecting to mention community relations, the reader should not infer that this oversight constitutes unwillingness to meet with the surrounding community.

Table 2. Examples of Process Change in Interviewed Firms

Firm / Process	Process Change	Change Factors
Semiconductors 1. Hana (Bangkok and Ayudhaya)	Pb reduction; TCE-free solvents	Customers HP, TI
2. AMD	Pb free soldering (4 yr. timeframe)	?
Storage 1. Read Rite	NMP [n-methyl pyrol ?] reduction (6 fold cost savings)	ISO

Returning to Thailand: in the early 1990s a pattern of worker illness and death occurred at several electronics firms in the nation. That these incidents occurred prior to the wave of ISO certification in Thailand, or that these accidents may possibly have been prevented with third-party certification, is beside the point. What I wish to argue is that an appreciation of the limits of ISO requires analysis of the regulatory context in which it is embedded, in this case Thai workplace political economy and its change during the 1990s.

In the early 1990s four workers at Seagate died after a pattern of fatigue and fainting. Almost 200 others were diagnosed by one specialist as having chronic lead poisoning, possibly aggravated by solvent exposure. In 1993, while the "Seagate Affair" was heading towards litigation, a separate pattern of illness and death among electronic workers occurred at the Northern Region Industrial Estate (NRIE), near Chiang Mai.

The Seagate Affair shows reveals an ability to deny responsibility by appeal to scientific standards (which are inherently uncertain). It also reveals how elite connections between the firm and the state (in this case the Board of Investment) resulted in an order by the Ministry of Public Health to downsize its only occupational medicine clinic. The NRIE incidents reveal how firms were able to evade responsibility by non-cooperation with government and third-party investigations.

2-3.1 The Seagate Affair

The following information is from Forsythe, 1994. Seagate opened two plants in Thailand in 1988 and 1989. In 1991, the same year worker health grievances—including four deaths—began to surface, Seagate faced a union organizing drive. It eventually fired a total of 708 workers who were publicly calling for union recognition (e.g. by staging demonstrations in front of the U.S. embassy).

I asked a union leader in the Federation of Electrical Employees about the Seagate affair. He mentioned that Seagate's HR director at the time staunchly resisted the

union drive. Union leaders could not get the 20% of employees needed to officially represent the workforce. According to Seagate, when it became clear that the company would not recognize a union, most of the fired workers asked to go back to work, but all were denied the opportunity to do so.

The four workers at Seagate's Teparuk plant (in Samut Prakan province 20 km south of Bangkok) died between 1990-1991. According to their co-workers they all had experienced headaches, fatigue, muscle aches and fainting. The SP plant made components for low-margin 3.5" disk drives.

In August 1991, Dr. Orapan Metadilogkul, probably Thailand's most prominent and active practitioner of occupational medicine, was asked to investigate the deaths. She sampled blood from 1,175 workers. She concluded that blood levels in approximately 200 employees were high enough to suggest chronic lead poisoning, aggravated perhaps by solvent inhalation. Her clinic (the National Institute of Occupational and Environmental Medicine, NIOEM) treated some workers from a group of two hundred that complained of headaches, insomnia, fatigue, and muscle ache. At least 2 of these workers showed common symptoms of seizures, cramps, and limb numbness, and had blood lead levels clearly exceeding the Thai standard of 40 micrograms lead per 100 milliliters blood [ìg Pb/100 ml] (Kedrick, n.d).

The company disputed the vast majority of her findings. As Table 3 indicates, the debate over causes of occupational illness was marked by divergent interpretations of the usefulness of the Thai safety standard for blood lead, of lead chemistry, and of background exposures to lead in Bangkok. As I discuss below, the debate escalated into a knowledge/power conflict between Dr. Orapan and Seagate that ended up in court.

Table 3. Comparison of occupational health claims made concerning the Seagate factory at Teparuk, Thailand, 1991.

Non-corporate commentators	Seagate Technology's position
Almost 50% of 148 workers sampled in the "wave-soldering" section had > 20 ìg Pb/100 ml blood. 36% of 1175 workers tested had > 20 ìg Pb/100 ml blood. (Dr. Orapan's August 1991 findings, in Forsythe, 1994).	"The Thai Ministry of Health blood lead standard is 40 micrograms of lead per 100 milliliters of blood. This level is far below the 80 to 120 micrograms of lead per 100 milliliters of blood that is considered dangerous to life…if an employee is measured at [the Thai standard of 40 ìg/100 ml] they would be immediately moved to a different area. No Seagate employees have reached this level." (Letter from Mr. Patrick Allen, Vice President, Teparuk Sub-Assembly Manufacturing Operations, dated July 12 1994).
Only 8 percent of the Bangkok traffic police [who have high levels of exposure to vehicle fumes] had more than 20ì Pb/100 ml (Dr. Oraphan, quoted in Kedrick, n.d.).	Job applicants to Seagate have "an average of between 13-39 micrograms of lead in their blood," which the company attributes to background exposure (Kendrick, n.d.).
According to Dr. Orapan, approximately 200 employees have chronic occupational illness from exposure to Pb or solvents.	"..none of these [200] employees have blood lead levels that exceed either Thai or [U.S.] OSHA standards. We also have [results from] six other independent physicians, and none have found signs of toxic disorders." "Seagate has had three outside organisations come in to determine the lead levels..the National Institute for Improving Working Conditions and Environment, the Dept. of Science Services, and the [Mahidol University] Dept. of Occupational Health. All of these agencies have given us a clean bill of health on toxic fume emissions." (Mr. Lee Kuhre, Seagate Director of EHS, interviewed by Kendrick, n.d.)
Pb fumes can be generated at any point above its melting point of 621.5 degrees F (Dr. Yvette Lin, lecturer in chemical pathology, Univ. of Hong Kong, in Forsyth, 1994).	

Environmental review

The following information is based on a report by Mahidol University academics Chalermchai and Vichai (n.d.). In 1992 Seagate commissioned Mahidol's Department of OHS (in the Faculty of Public Health) to measure levels of airborne lead and dust concentrations in Teparuk work spaces as well as in the exhaust ventilation ducts (that release outside the plant).

The Mahidol team mounted "personal pumps" with cellulose filters on employees in fourteen locations to measure air lead concentrations. They used an "isokinetic stack sampling technique" to measure concs in 7 out of 15 vent ducts (selected on the basis of those likely to contain high emissions). The study took place July 10-11, 1992.
Workstation lead levels ranged from non-detect to 0.0504 mg/m^3 in the "E-Elite" work section. The lowest detected level was 0.00106 mg/m^3. [detection limit and standard error not given] The Thai standard, set by the Department of Labor, is 0.2 mg/m^3.
In the vent ducts, against the Thai Department of Industrial Works (DIW) standard of 30 mg/m^3, Seagate's highest exhaust air lead concentration was measured at less than 0.002 mg/m^3. However against a DIW standard of 100 mg/m^3 for dust, Seagate highest dust concentration was 67.7 mg/m^3. The Mahidol report recommended precautionary follow-up and review of that particular exhaust duct.

Workers compensation dispute

Seagate was taken to the Central Labor Court to resolve a worker's compensation claim made by some of the group of 200 workers identified by Dr. Orapan as having occupational illness. However according to Dr. Orapan, only one worker was willing to go to the Labor Court, where she successfully won compensation from Seagate prior to 1993. (By 1993, the 2-year statute of limitations had expired for everyone else in this group who may have wanted to seek worker's compensation.) However, in 1994, Seagate as plaintiff initiated a suit to reverse the compensation verdict. That same year Seagate also wrote to the Sapa Paett, Thailand's highest-level medical board, asking them to review her suitability to continue directing her clinic and to practicing occupational medicine.

Dr. Orapan was indeed subsequently reviewed by the Sapa Paett, but cleared. However the Ministry of Public Health re-assigned all six of her staff to other offices. (Today Dr. Orapan's clinic is functioning but runs on a leaner staff.) In 1996, Seagate withdrew its suit from the Labor Court, anticipating, according to one observer at the time, a court dismissal on the lack of insufficient basis.

2-3.2 Incidents at Northern Region Industrial Estate (NRIE)

NRIE is located in Lumphun Province (45 minutes away from Chiang Mai). Approximately 70 domestic and foreign firms employing approximately 29,0000 workers are located within the NRIE.[10] Two-thirds of all firms in the NRIE are classified as "exporters" eligible for 5-8 years' worth of tax exemptions from the BOI. Of the total Estate workforce, three-quarters are women. The exporters hire almost 80% of the total workforce. Half of the companies in the Estate are in the electronics sector. Japanese capital appears to be a significant presence.

In 1993, a pattern of illness and deaths became evident among workers at electronic component makers Murata, Electro Ceramics, Hoyo Opto, KSS Electronics, Tokyo Coil, Tokyo Try, and F.M. Brush. Save for the last, which is U.S. owned, all firms are Japanese-owned. By September 1994, at least ten, and up to 23 people were reported as having died after working in electronics factories (Tara, 1998; Forsyth, 1994). It is not clear why the exact number is uncertain. The reason for this may involve some of the following factors: that workers died after going on sick leave and losing contact with their employer; that they received medical care from a number of clinics and hospitals; that their employers appear to have no health status follow-up or reporting requirements once an employee leaves; and that no other organization appears to have systematically bothered to track down an exact number.

When the head of the IEAT subsequently held a press conference in late 1993, he denied that the deaths were firm-related. According to Forsyth (1993) firms distanced themselves from dead workers by noting that: all of the deceased were no longer employed; that they were not working directly with lead, or that they were HIV positive. Although there is a high rate of HIV infection in northern Thailand, the medical and academic sources interviewed by Forsyth (1994) noted that firstly that only three of the workers that died were HIV positive. Secondly, they noted that the deceased did not have typical symptoms of HIV/AIDS (such as marked weight loss and opportunistic infections). Rather, their symtoms typically were headaches, fatigue, occasional fainting, and occasional seizures.

When more deaths occurred in the six months following the IEAT press conference, the government sent a team of Ministry of Public Health epidemiologists to investigate (Forsyth, 1994). I have not seen their official report. Dr. Uthaiwan Kanganakamol, a prominent activist based in Chiang Mai, participated in a high-level review team whose report was not released.[11] Tara (1998) argues that "there has been no significant independent study of health and safety conditions in the estate. Neither government agencies nor researchers have been able to get permission to conduct research on health and safety in the estate [emphasis added]. "

[10] Manager, NRIE. Interview 14 June 2000.
[11] Joint interview with David Sonnenfeld, 13 June 2000.

I was able to get a copy of a three-volume, analysis of environmental conditions at NRIE conducted by Mahidol University in 1998. Although useful as an introduction to processes used at the almost 70 firms in the estate, the work contains no actual safety and health or epidemiological data.

Tara (1998) speculates that at least one of the deceased had symptoms of TCE poisoning. Another sick ex-worker was employed by Electroceramics and worked intensively with alumina powder. When she sought treatment on her own initiative, the Chiang Mai doctor who saw her originally diagnosed her as having aluminum poisoning. According to Forsyth (1994), her employers intervened with the doctor's employer, McCormick Hospital. Notwithstanding its private status (funded by American missionaries), the hospital apparently retracted its diagnosis that Mayuree had aluminum poisoning.

Seagate and Lumphun: Common themes

These Seagate and Lumphun cases differ in their details, but the overall pattern contains striking similarities. The cases show how, in the early 1990s, firms able to withdraw from responsibility by appealing to scientific or medical uncertainty. In addition, the firms at NRIE relied on certain norms of property to refuse access to a state-sanctioned investigation. Because employees could not prepare timely or effective cases before the Labor Court, firms were generally ordered to pay compensation in only a handful of the compelling cases (see Kedrick, n.d.). Furthermore, firms, by way of alliances with the Board of Investment, were able to cast aspersion on the quality of public occupational medicine in Thailand, including by litigation.

This pattern of opposition—both defensive and tactically aggressive—by foreign electronics firms and state agencies, deserves explanation. Thai subsidiaries are obviously striving to maximize profits in highly competitive, relatively low-profit margin sub-sectors. However this point does not explain the details of how occupational illnesses arose at some firms and not others, how the conflict took the form it did, and the methods by which participants involved prevent similar events from occurring in the future.

Beyond simplistic notions of profit-seeking and the bottom line, I venture that the conflict took the form it did in part because of the firms involved deployed a highly risk-averse and inward-looking form of decision-making. Specifically, I speculate that the firms involved feared that in providing "outsiders" (NGOs and certain state agencies) access to "their" workers, their medical practices, their plant layout, and so on, they will lose control of aspects of production they

consider vital. This includes the possibility of having to invest in new plant and physical technology.[12]

Secondly, increased outsider access includes the prospect of ceding control over production process in the interests of worker health. For example, if new rules (or enforcement of existing rules) prevent firms from assigning unlimited overtime to willing individuals, firms would have to rethink how they manage overtime and shiftwork processes. These organizational design issues then pose a second set of challenges. Thirdly, some firms may figure that along with increased outsider intervention will allow workers to forge new ties that enable them to exercise voice in the workplace in new ways. Common to all three speculations is the role uncertainty plays in the politics of production.

Similarly, to explain how Thai government agencies such as the BOI and the IEAT played the hands they did, I would begin by pointing to the power vested in the BOI; the mandate it and IEAT have to further Thailand's export-oriented low-wage manufacturing strategies; and more generally the inability of state health and labor agencies to resist these hegemonic premises.[13] For example, Thailand has only recently begun to deploy a rhetoric of human capital in its official planning statements. The social construct of a low-wage, low-skilled (and female) laborer does not invite preventative health or human capital investment. But here ironically firm practice may once again be ahead of the state, as firms realize the gains from investing more in human capital.

Although details of interagency politics remain obscure, it is clear that at the beginning of the 1990s, firms and powerful state agencies did not consider they had much to gain from sponsoring greater transparency and power-sharing in the workplace. Indeed, if we define political repression as action (in this case by a state-corporate alliance) that increases the costs of collective opposition (in this case by labor unions and health activists), then the IEAT governor's press conference, the actions by Seagate, and the non-cooperation at NRIE were clearly repressive.

Sadly but not surprisingly, the worker illnesses and deaths in Thailand in the early 1990s were pivotal grievances that helped spur activism. This activism aimed to transform the politics of occupational health. Dramatic episodes—at Seagate, Lumphun, the infamous Kader toy factory fire, and elsewhere—appear to have emboldened Thai civil society activists to form new advocacy networks. By campaigning for greater worker participation in occupational health policymaking, these NGOs and their academics advisors seek to realign the

[12] The medical data on the physical condition of electronics workers is private property. It is summarized and reported back to firm headquarters, and to the Department of Hygiene (Ministry of Public Health). Firms in Thailand do not readily part with such data. Not surprisingly, independent research on occupational health and safety issues is relatively rare.

[13] Premises embedded in political practices that contribute to domination. See Hale (1994) for a treatment of this concept.

balance of power and the structure of state-business-civil society relations they see as central to the problems reviewed above.

The discussion above provides a more complex understanding of the context in which Thai electronics firms turned to ISO certification in the late 1990s. We can think of firms' involvement with ISO as a way for companies to improve environmental conditions—and hence, indirectly, worker health and safety—while controlling the pace, scope, and direction of reforms. However the embrace and institutionalization of ISO leaves one question unresolved. In the Thai context, that is the question of how community organizations and other actors should engage this new mode of environmental regulation. For the most part they have chosen not to do so.

2-4 Civil society interactions around CSR

Mobilized by illness and death, and by new political opportunities in Thai society, new advocacy networks and groups formed in the late 1990s. In this section I discuss the orientations and capacities of the main NGO actors who have had the most engagement with CSR issues in Thailand. I focus on their ongoing campaign for an independent OSH institute (Voravidh, 2000). Many Thai NGO leaders and activists come either from the generation that was repressed by the military and fled into rural forests during the mid 1970s, or from a younger generation that derives its political identity from the events of Black May 1992. When they found themselves witnessing a number of industrial disasters during the 1990s, these NGOs initially responded in a manner that not only reflected their roots in anti-government protest movements of the 1970s, but a general rift in society. Put simplistically, a rift exists between elites (business, military, royalty) and state agencies, on the one hand; and ordinary workers, farmers, and NGOs on the other. Signs of this rift include examples of repression discussed above, as well as prevailing popular rhetoric that acknowledges the differences in wealth and power between the middle class (kon chan glaang) and the lower class (kon chan laang). (A variety of political relations bridge actors on either side of the rift, including longstanding patron-client networks, as well as relations between middle class, urban activist NGOs and their clients.)

One sign of this rift includes marginalization of NGO groups by prevailing state-business alliances. As a consequence, NGOs have for the most part not been party to the processes by which Thailand designed new environmental laws in the early 1990s. Nor do most state agencies provide NGOs access to ongoing policy making, e.g. over procedures to administer and enforce pollution control laws. (Exceptions do exist: MOLSW tends to work more closely with NGOs.)

Overall, Thailand's state-civil society relations can be summarized as having processes that are relatively closed to popular input, on the one hand. Examples include: the controversy over environmental impact studies and hearings for the Yadana gas pipeline from Burma-Thailand, and a current conflict over a proposed

gas separation plant in Songkhla province, southern Thailand.[14] On the other hand, the state capacity to control civil actors is relatively weak. Some implications of this are salutary for civil society. For example, freedom of association has probably never been better in Thailand at any time in its modern history. Yet as a developmental state, Thai state "weakness" really means a selective structure of action. The state's under-funded environmental and labor agencies weakly enforce compliance. In labor relations, we see unwillingness or incapacity to mediate labor disputes e.g. Thai Kriang. (These in turn may stem from a combination of neoliberal ideology and organizational weakness.) Uneven repression and enforcement, combined with state processes that are generally weak on closed to popular participation and input has helped produced certain political actors and outcomes. These include an NGO sector that identifies with leftist ideology, as well as frequent popular protests and demonstrations.

Notwithstanding these ongoing structural tensions, by the late 1990s Thailand had a new constitution, drafted with the participation of progressive-left academics and their NGO allies. The 1997 constitution redistributes certain important powers to citizens. In doing so, it has been regarded by activist NGOs as a source of new structural opportunity. The NGO network for OSH consists of a small number of nodal organizations tied together by relationships and alliances that date back at least to the early 1990s (Voravidh, 2000). The Thai name for this network—Network of People Impacted By Industrial Development ("NPIID")—conveys its interest extends beyond workplace health and safety.[15]

NPIID consists of more than two dozen organizations in Bangkok and the provinces. These include: the Center for Political Economy at Chulalongkorn University (CPE); the Arom Pongpa-ngan Foundation (AP); the Friends of Women Foundation (FOW); the Council of Work- and Environment-Related Patients' Network of Thailand (WEPT). The first three of these organizations give structure to some of the other groups in the network by acting as donors and by serving on boards of directors.

Of these organizations, the AP is the oldest, dating back to 1975. AP is a "labor resource center" that protects and promote labor rights. For instance AP lawyer Bundit Tanachaisaetawut publishes the monthly Labor Review (Raeng-ngan Paritat) along with a useful year-in-review special edition. Bundit (1999) has also published an edited volume discussing problems in the new Labor Relations Act of 1998, and a recent analysis of the problems in Thailand's fragmented OSH laws (Bundit, 2000). In addition to these publications, AP organizes regular conferences for the labor movement and participates in ILO meetings. It appears to be Thailand's most prominent non-academic labor law and policy think tank.

[14] See *The Bangkok Post* stories in October 2000 for coverage of this heated industrial development conflict. E.g. *The Bangkok Post*, 10/21/00.

[15] In Thai: Kruea-kaai Puu Dai Rub Pon Gra-top Jaak Gaan Pattana Utsahagam. NPIID is my acronym for this organization. See NPIID, Letter to Deputy Prime Minister Gorn Tuprangsii, May 10, 2000. [Issued from the office of FOW.]

The FOW, a larger non-profit founded in late 1980s, has worked closely with AP on labor rights issues. In addition it lobbies for women's equal rights under the law as well as providing training and human resource building services for other groups, including legal and medical professionals. Its first major political campaign was 1991-1993 [B.E. 2534-36] for employee's rights to a 90-day unpaid maternity leave. The FOW publishes Ying Chai Gao Glai (Women and Men Advancing Far), an attractive biannual news magazine that covers a variety of health and political topics. Senior staff member Jaded Chaowilai has published on female labor rights issues; on Thai labor law; and sits on advisory boards of smaller NGOs.

The Center for Political Economy (CPE), another longstanding resource for Thai NGOs, is an academic unit in Chulalongkorn University's Faculty of Economics. Affiliated with the CPE are well-known scholars and public intellectuals such as Professors Pasuk Pongpaijit, Lae Dilokvitaya and Voravidh Charoenlert. During my visit I was impressed with Prof. Voravidh's energetic commitment and strategic role in two current accident-related industrial responsibility campaigns. Prof. Voravidh has provided advice and helped represent villagers affected by Cobalt-60 radiation leak in February 2000, and a disastrous explosion at a Chiang Mai lumyai [long-ngan fruit] processing plant in December 1999.[16]

Unlike AP or FOW, the Council of Work- and Environment-Related Patients' Network of Thailand (WEPT) is a grassroots organization funded domestically (some of its funding comes from FOW.) The WEPT began eight years ago as a support group for eight women whose lungs were injured by persistent exposure to cotton dust in textile factories, and were struggling to win worker's compensation through the Labor Court (The Bangkok Post, 4/28/98).[17] The WEPT's membership has grown from 300 to more than 400 in the last two and a half years. Most members are people with occupational health grievances. The WEPT has no dedicated office; its distinctive identity comes from drawing on its membership for a variety of activities including contributing art and poetry to its very simply designed, yet fetching monthly newsletter. WEPT notably is trying to establish a mutual aid fund levied from its members (100 baht per person per month). The WEPT also helps organize plaintiffs in Labor Court cases. The WEPT's directors include professionals from CPE and the Assembly of the Poor, but the organization appears to maintain considerable autonomy.

Dr. Orapan Metadilogkul's clinic at Ratchvithi Hospital continues to be the nation's only independent center for treatment and public health education on occupational and environmental disease. In addition to seeing patients, Dr. Orapan

[16] Ongoing patient rights advocacy for these accidents respectively falls to two small NGOs: the Alternative Energy Project for Sustainability (AEPS), and the Lumphun Women's Health Center.
[17] The condition is known as "bysinnosis" and apparently affects almost one in three textile workers. *The Bangkok Post* 4/28/00.

is personally active in NPIID. She appears to be a particularly effective public speaker. For example, during a conference sponsored by the International Labor Organization, Dr. Orapan reached out quite assiduously to leaders from Thailand's labor federations, a set of organizations that hitherto have not actively pursued OSH issues.[18] Dr. Orapan organizes an annual conference on occupational and environmental medicine. The 9th conference was a two-day event held in March 2000 which drew more than two hundred participants. The agenda spanned a broad range of topics including: jurisprudence, epidemiology, mental health, industrial hygiene, and current issues such as genetically modified organisms and radiation sickness).[19]

Other members of the network include: Campaign for Alternative Industry Network (CAIN), which actively follows the government's plans to develop new industrial estates in rural Thailand providing critical commentary, and educational outreach to residents in affected areas. CAIN has been active in the recent conflict over the proposed Songkhla natural gas project. Finally, two foreign donor organizations, though not officially members, deserve mention. The American Center for International Labor Solidarity (ACILS) and the Friedrich Ebert Stiftung (FES), a German foundation, are both important sources of financial support for labor-related meetings and conferences. During my fieldwork I observed that ACILS staff attend the meetings of the advocacy network quite regularly. However, both organizations eschew the appearance of agenda-shaping.

Campaign for an independent OSH institute

Following the Kader fire of May 10, 1993, a number of civil society organizations participated in a protest movement to lobby Thailand's powerful BOI for increased transparency in foreign-owned workplaces (e.g. right of community inspection). But BOI apparently denied it had the authority to issue new policies. In 1994, FOW together with NGOs such as AP, Assembly of the Poor, CWEP, began to air proposals to create an independent government OSH institute with a broad set of mandates, including OSH research, inspection, management of comp fund. In June 1997, a committee composed equally of civilians and public servants in Prime Minister Chavalit's administration submitted a new bill to the Thai cabinet for approval.[20] But in the wake of the July 1997 financial crisis, the administration of new PM Chuan Leekpai gave the bill a much less sympathetic reception. The Labor Ministry (MOLSW) issued alternative draft legislation proposing more modest reforms. Not pleased with what they viewed as government preemption of their proposals, in 1998 the NGO coalition decided to

[18] International Labor Organization, Trade Union Workshop on Occupational Safety and Health, Thailand. June 25-27, 2000. Dr. Orapan has made many appearance in court both on behalf of patients and on her own behalf (see Section 4.5).
[19] See Office of Occupational and Environmental Medicine (2000).
[20] Pressure on the state increased significantly during 1997, following a three-month-long street occupancy protest led by the Assembly of the Poor. Missingham, forthcoming.

launch a citizen petition campaign to force parliament to consider their version of the bill.[21]

Both versions of legislation involve consolidating the government's existing OSH promotion offices in one new organization. The NGO vision however would assign responsibility for extra-judicial review of worker compensation cases. It would also contain a medical and occupational therapy unit. It would invest interest collected from the national workers' compensation fund more aggressively in health education. In the NGO version, the proposed institute management Council would also include more senior civil servants than the government's draft (including the Prime Minister and ministers from MOLSW, MOSTE, MOI). In addition, the Council would give official representation to four segments of the public: employers, employees, the sick and injured, and those with special expertise. The government's version, by contrast, allows only the traditional tri-partite representation of state, employer, and employee.

The NGO's version clearly contains several radical reforms, including more scope (the clinical medicine unit); independent review of workers' compensation cases; and more power-sharing between powerful office holders and the sick and injured. Budgetary and organizational re-working implications for the new institute are clearly not trivial and will likely be contested. Currently, two competing versions of the bill still exist. The debate over which to adopt will not be addressed until after the next general elections.

During the years since the Kader fire (now National Safety Day), the NPIID has made dramatic inroads in terms of marshalling public support for their policies, as well as forging closer ties with some relevant state agencies and politicians. Through Thai Industrial Standards Institute (TISI) and the Office of Environmental Policy and Planning (OEPP) the government conducts OSH education workshops.[22] Industry associations (e.g. the petrochemical industry association) do the same, and I imagine that government agencies attend these as well. TISI has coordinated planning for small and medium size enterprises interested in the new Thai Industrial Standard [Mor Or] 18000.

At the same time, relations between civil society actors and firms (domestic or foreign subsidiaries) remain distant, and this notwithstanding—and indeed in spite of—the wave of ISO certifications. The incidents at Seagate and Lumphun, which have both OSH and labor organizing dimensions, contributed to shaping a worldview among NGO actors that is distrustful and polarized. Meanwhile some of the key nodes in the advocacy network are preoccupied seeking redress for industrial accidents such as a Cobalt-60 radiation leak in February and a major

[21] Article 170 of the new constitution grants the right of civilians to author draft legislation (and hence contribute to policy reform) if 50,000 voters petition for it.

[22] OEPP is an environmental agency with planning and problem-solving responsibilities. Its regional offices appear to be assuming more responsibility as a result of Thai government decentralization efforts.

explosion at a Chiang Mai fruit processing plant last December. The old worldview, the current national and economic instability, and industrial events in the last twelve months have steered NGOs away from giving priority to re-attempting dialog with industry. I noted earlier that public opinion and non-specialist elites perceive electronics as a generally clean industry, notwithstanding events of the early '90s. This premise, combined with weak state ability, particularly in terms of interior plant inspections, may also contribute a context that dulls activists to mobilize around the electronics industry at this time. Such reluctance is perfectly rational given Thailand's current context and limited organizational resources. At the same time, an argument could be made that ISO certification process provides a new opportunity for dialog between the NGO advocacy network and firms around OSH issues.

By invoking the possibility of dialog occurring in the next few years we should not assume what needs further analysis. How would such a dialog be structured? Would participants respect and understand each other? The NGO network consists of lawyers, political scientists, labor relations experts, and physicians. Not only does their political worldview differ from that of managers at electronics firms, but their training differs as well.[23] Firm managers, by contrast, are mainly engineers whose political culture—scientific, hierarchical, and conservative—reflects both the imprint of modern global business culture as well as prevailing discourses of technological control and modernization.

A demand exists for mediating organizations that understand the constraints, discourses, and desires of both the activist NGOs and the firms. An example of an organization that could potentially serve in a mediating capacity is the Thailand Environmental Institute (TEI). The TEI is a mainstream environmental non-profit with close ties to government and industry. TEI has a business and environment branch, and the staff there have produced very useful case studies of clean technology adoption in sectors such as pesticide formulation, and automotive parts (Thumrongrut et al., n.d.). PCD recently contracted this branch of TEI to study clean technology adoption approaches in several industries, including electronics.

[23] Compared to the U.S. use of science-based advocacy is much less common. I suspect the reasons include related both to staffing and, importantly, the relative dearth of opportunities to participate using scientific discourse.

III. Conclusion

3-1 Questions for Further Research

The preliminary findings in this report suggest a set number of outstanding questions that deserve further investigation. These questions revolve around how electronics firms in Thailand, and the state agencies, respond to calls from civil society actors for more information.

For example, how do workstation lead levels today compare to levels measured in the mid-1990s at Seagate? How do they, for that matter, compare between firms? Our interviews gave us evidence that firms do keep records on employee health indicators – what do they record? How do worker health indicator levels change over time? Does data collection improve worker health and if so how?

In light of the public controversy in the early and mid 1990s over chronic lead poisoning, the monitoring practices that firms conduct, both inside the plant and of their workers', deserve to be specified.

Because of their perceived sensitive nature, asking this first set of questions constitutes a new form of claim making by third-party actors in Thailand. Indeed, much of the present analysis has sought to explain how and why these questions take on the sensitivities they do in Thailand. So a second set of questions, of a methodological nature, would ask under what conditions – for example, in what settings, with whom participating - firms and government agencies in Thailand are motivated to supply meaningful answers to these questions.

3-2 Building on Voluntary Measures

The Thai government's ability to design, implement and monitor environmental health and safety practices is still weak. Voluntary measures remain important. However such modes of regulation tend to create customized discourses and procedures at the firm level. One potential weakness is that these practices may diverge from best practices of risk assessment and minimization that could be produced via more rigorous and transparent oversight, and by more open dialog with third parties in general. One basic unanswered question is whether today's voluntary corporate environmental health and safety systems actually reduce the risk to workers of chronic occupational illness.

Civil society actors, both issue-based (e.g. labor and women's NGOs) and locality-based (e.g. neighborhood workers' associations) are two among many potential "third parties" that have an incentive to participate in improving corporate social responsibility. Unfortunately their interactions with firms have been structured by conflicts over responsibility in the wake of accidents, such as Seagate, Lumphun, Kader, the recent Cobalt-60 radiation incident, and the Chiang

Mai fruit processing plant explosion. Their long campaign for an independent OSH institute is an important, high-stakes advance. Regardless of which version of the new institute bill passes, the ability to engage the existing work firms are doing via alternative, complementary channels is important.

I recommend that civil society actors interested in participating more in corporate social responsibility should identify and cultivate ties with reform-minded individuals in the Thai government, using credible allies to motivate environment and health agencies to a higher standard. Secondly, in the domain of OSH they should advocate for up-to-date science-based standards and policies. Finally they may consider developing the capacity to sponsor or conduct applied research that furthers their purpose.

In this paper I have argued that Thailand's current context of OSH is complicated by a legacy of tension between activist NGOs and firms, and by competing initiatives to establish a new OSH institute. Third party organizations interested in intervening around CSR issues would do well to track both dynamics closely in the coming months, looking particularly for evidence of dialog between firms of interest and selected civil society actors.[24]

IV. References

<u>Thai Language</u>

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[24] One interesting indicator of electronics firms' preparedness to improving safety and health would be a count of their staff's participation in the occupational medicine conferences organized by Dr. Orapan.

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V. Appendix A: List of Organizations Interviewed Firms

Advanced Micro Devices Ltd.
Bangkok Metropolitan Area

Hana Microelectronics Public Co. Ltd.
Bangkok

Hana Microelectronics Public Co. Ltd. (Lumphun)
Northern Region Industrial Estate

IBM Storage Products (Thailand) Ltd.
Prachinburi

LTEC Ltd. (Fujikura Group)
Northern Region Industrial Estate, Lumphun

Lucent Technologies Microelectronics (Thai) Ltd.
Pathumthani

Murata Electronics (Thailand), Ltd.
Northern Region Industrial Estate, Lumphun

Philips Semiconductors (Thailand) Co., Ltd.
Bangkok

Read-Rite (Thailand) Co., Ltd.
Bangpa-in Industrial Estate, Ayutthaya

Seagate Technology (Thailand) Ltd.
Samutprakan

Labor organizations

Philips Semiconductors Workers Union, Ext. 394
Khun Somyot Chaimoot, Chair
Khun Boonnag Orndii, Secretary

Academic and Non-Governmental Organizations

Alternative Energy Project for Sustainability
Khun Ida Aroonwong

American Center for International Labor Solidarity (ACILS).
Mr. Philip Robertson
Khun Porntip Prommart

Arom Pongpa-ngan Foundation, Bangkok
Khun Bundit Tanachaisaetawut

Campaign for Alternative Industry Network
Khun Penchom ("Ae") Saetang

Center for Political Economy, Faculty of Economics
Chulalongkorn University, Bangkok
Prof. Voravidh Charoenlert

Council of Work- and Environment-Related Patients' Network of Thailand (WEPT)
Khun Somboon Srikamdok-kae

Dept. of Occupational Health and Safety
Faculty of Public Health, Mahidol University
Prof. Chalermchai Chaikittiporn
Prof. Vichai Pruktaratikul

Friedrich Ebert Stiftung (FES)
Ms. Mareike Woermer, Resident Director.
Khun Sakdina

Friends of Women Foundation
Khun Jaded Chaowilai

Greenpeace Asia, Bangkok
Khun Tara Buakamsri, Campaigner.

Green World Foundation
Khun Sukran Rojanapaiwong

Thailand Environmental Institute (TEI)
Khun Sutep Terasart
Khun Pongvipa Lohsomboon

Government and Inter-governmental Organizations

Environmental Office Region 10
Ministry of Science, Technology, and Environment
Khun Apiwat Kunarak, Director.

Northern Region Industrial Estate
Khun Wanlaya Niwatwong, Manager.

Office of Occupational and Environmental Medicine
Dr. Oraphan Methadilokul

Pollution Control Department
Ministry of Science, Technology, and Environment
Yuwaree In-na, Director, Water Quality Management Division
Khun Nisakorn Kositratna
Deputy Director-General