

Environmental Governance: The case of industrial waste and pollution management in Thailand under the existing context of globalization.

Suthawan Sathirathai¹

1. Introduction

The world is currently witnessing severe problems of natural resource and environmental degradation to the extent that many of their impacts are now widespread at the global level. Several causes of environmental depletion were once justified by the so-called “development process”. In this context, developed countries have set the standard of material comfort to which the growing populations of the developing countries of the world are now aspiring. At the same time those who have already become rich by utilizing the world resources and environment still never stop trying to acquire more. With the limits of natural resources and the Earth’s finite carrying capacity, this situation is of global concern.

In 1992 the attention of the world was focused on the United Nations Conference on Environment and Development (UNCED) and a plan for sustainable development, Agenda 21, was conceived. "Sustainable development" can be defined as development which meets the needs of present generations without compromising the ability of future generations to meet their needs. Equity among present generations and between this generation and those that follow is a critical component of this concept. It is also important to note that this concept is additionally compelling because it comprises two objectives usually considered to be conflicting, namely development and protection of the environment. However, in reality it is not easy to achieve sustainable development.

In fact, to some extent this degradation of environmental quality and depletion of natural resources derives from the nature of those resources as common-pooled resources or CPR. As such these resources have two characteristics which affect their management and which have led in part to their depletion or degradation. First, use is non-exclusive; and second, use is subtractible. Thus, without proper management opportunistic behaviour can thrive resulting in a type of resource use which operates on a first-come-first-served basis without due regard to the broader consequences of the type and rate of use (i.e. the externalities relating to environmental degradation and depletion of natural resources experienced by society).

In such a context, where the individual use or degradation of shared resources affects the rights of other individuals (communities, countries etc.), the only workable solutions

must take place within a cooperative framework. However, the mainstream development process tends to emphasize rigorous competition in the current global market. If economic competition is to operate in a context where the environment is protected for sustainable development, this competition must operate within a cooperative framework. *Environmental governance* or good governance in environmental management can serve as the principles, rules and mechanisms by which competition can occur without destroying the cooperative framework for environmental and natural resource protection. In a dynamic context, environmental governance is both the ends and means at the same time. Moreover, in order to achieve sustainable development, natural resource and environmental management requires good governance at local or national and global levels.

This paper explores the current trend of industrial development both at the global and at the national levels and considers the extent to which environmental governance is being achieved in the existing context of globalization. The concept of environmental governance is also examined in the framework of institutional analysis. The paper focuses on the analysis of environmental governance at the local level with particular reference to the case of industrial waste and pollution management in Thailand. However, it presents the argument that, within the existing global economic system in which there is no environmental governance at the global level, it is hard for environmental governance at the local level to be achieved.

The paper is divided into 6 sections. The first section is an introduction. The second section is on the importance of environmental governance which divides into two subsections discussing the concept of environmental governance in a Thai context and in the framework of institutional analysis. The third section explores the environmental and social impacts of the global trend of industrial development under globalization. The fourth section is on the state of industrial development and pollution in Thailand. The fifth section discusses the Thai case study on industrial waste and pollution management in a context of environmental governance. The last section is a conclusion.

2. The Importance of Environmental Governance

As earlier discussed in the introductory section, the use of natural and environmental resources for economic development can easily be dictated by opportunistic behaviour leading to environmental and resource degradation because of their nature as CPR.

¹ President of the Good Governance for Social Development and the Environment Institute (GSEI)

Consequently, environmental governance is considered to be the necessary rules, conditions and mechanisms by which economic transactions can occur in an equitable fashion and without destroying the cooperative framework for environmental and natural resource protection. This section discusses good governance in a Thai context based on ideas and actual research experiences. It also explores environmental governance in the framework of institutional analysis since it serves as both rules and mechanisms. In this paper, although the emphasis might be on environmental governance at the country level, later on it demonstrates that the lack of governance at the global level can seriously hinder governance at the local level.

2.1) Good Governance in a Thai Context

Good governance is a concept which arose during the 1980s and was first promoted and applied by the World Bank in its lending policy to developing countries. In its application in Asia, the essence of good governance was described by the Asian Development Bank as comprising: 1) Accountability; 2) Transparency; 3) Participation; 4) Predictability; and 5) Inter-relationships among the four previous elements (Asian Development Bank, 1995).

Initially, the concept was criticized by a number of Thai experts as simply a political tool in the era of globalization with a broad intent to simplify investment in and control of developing countries by international lenders and multinational corporations. As such, it has been seen as reducing the role of national governments and impinging on the sovereignty of borrowing nations (Yuk Sriaria, 2541).

Given the historical context of colonialisation and the impact of the Bretton Woods institutions in supporting globalization, there may well be some truth to these criticisms. Nonetheless there are many in favour of application of the concept of good governance such that there is greater transparency and elimination of corruption at the national and local administrative level. Furthermore, the concept is sufficiently broad that in terms of implementation there is scope to adapt its core principles to fit the local context.

Thus, in Thailand, the highly respected thinker Professor Prawase Wasi has explained how good governance should encompass the government sector, the business sector and society such that all elements operate in a just and transparent framework with high levels of responsibility and accountability (including an appropriate system of checks and balances). In such a context, it is critical that civil society is strong. It has been further suggested that “National Good Governance” will occur in a country where there is a high level of energy in

society directed towards the promotion of transparency and justice, and used in addressing national problems (Social Energy) (Narumol Tapjumpol, 2541). Professor Prawase Wasi further elaborated his ideas on good governance at a seminar held by the Good Governance for Social Development and the Environment Institute (GSEI) on the 16th October 2002. At this event, he noted the relevance of Buddhism in that “good governance means maintaining what is “right”, in explaining the meaning of what is “right” Acharn Buddhadasa used the term “sammata”. Acharn Buddhadasa would say repeatedly that whatever we do should have “sammata” that is we should do what is right. Doing what is right is important. If we do something without doing what is right we will cause harm. It is only by doing what is right in all aspects of life in all steps of what we do that we can find the truth. In good governance, doing what is right is the most important element of every issue.”

Thirayuth Boonmee, a Thai academic, suggests that, in the Thai context, “National Good Governance” must also encompass change at the individual level such that individuals consider and adjust their own values with a view to strengthening the nation and enhancing its capacity to cope with crises. In this context, Boonmee notes that we must not blame foreigners for Thailand’s problems, but neither must we come to depend on foreigners for solutions. He suggests the following slogan as an appropriate stance: “Thai soul, international spirit”; and adoption of the “self-sufficiency economy” as an effective basis from which to build strong communities. The role of the state in this context should be to focus on protecting and ensuring the rights of consumers, communities, the environment, and with respect to access to information. The state also has an important role to play in developing systems which support the interdependence of families, communities and society in accordance with Thai values (Narumol Tapjumpol, 2541).

The above discussions of good governance in a Thai context are based on experiences of well-known thinkers. In addition, necessary conditions for good governance for environmental protection in Thailand based on actual research and field studies conducted by GSEI² have been identified. These conditions which will later be discussed in length include:

- The existence of a system of checks and balances which are continually maintained by public participation in the process of implementation.
- The institution of appropriate incentives or drivers and deterrents.

² The project on Good Governance and Public Participation in Environmental Management

- The development of a sufficient body of knowledge including strengthening local wisdom and participatory research process.
- The prevention of corruption and the reduction of official discretionary power, which can be easily abused, such that conflicts of interest among representatives of the state and of communities can be reduced.
- Reduction of transaction costs among different actors at all levels of the process and elimination of differences among the transaction costs depending on the actors.
- Adoption of ethical and moral principles by all actors at all levels of the process.

2.2) Environmental governance in the framework of institutional analysis

Why do we have to discuss environmental governance in the framework of institutional analysis? In this respect, institutions refer to arrangements for aggregating individuals and regulating behaviour through explicit rules and decision-processes (Levi, 1990). In the past when the majority of Thai society was deep-rooted in Buddhism, it is clear that individual ethics and principles had the potential to reduce problems at the community level. However, at present, with significant population expansion and the development of a highly sophisticated society under globalization the ethics and principles adopted by individuals must be institutionalized for any lasting effectiveness.

Such institutions may comprise the formal or informal rules by which communities operate and through which drivers for behaviour which benefits the community and deterrents against behaviour which adversely affects the community may be implemented. To reach a true understanding of institutions requires a multi-disciplinary approach. This reflects the nature of the development of these institutions such that, for example, from an economic perspective an individual may make decisions depending on the individual benefits which may accrue from different decisions, but a legal perspective sets down the conditions and constraints (the framework) in which the individual makes those decisions so that community well-being is not adversely affected. The social and political sciences also have a major role to play in understanding the values and concepts which frame that decision-making and law making. Finally, with respect to the environment, there is a need also to have a clear understanding of the actual impacts and effects of different decisions, and here ecological, technical and health sciences are critical.

It is at the institutional level that the principles of good governance are particularly appropriate. The universal principles of good governance that are widely accepted comprise

the following six elements: 1) Accountability; 2) Transparency; 3) Public participation; 4) Predictability; 5) Efficiency and effectiveness; 6) Correct political behaviour and ethics.

These principles of good governance are acknowledged in the current Thai Constitution (1997). However, good governance is not only a target to be achieved but also the process to attain such a target. In practice, public participation in the decision-making process in Thailand remains superficial. In order for laws and policies which are the “rules of the game” to be effective, it is important that these laws and policies are designed on the basis of a real understanding of the situation. It also requires the development of an understanding of the mechanisms by which institutions at different levels of implementation actually operate.

This paper applies Institutional Analysis Development (IAD)² in order to understand the mechanisms by which different levels of institutions operate. The analytical framework of IAD can be divided into three broad levels:

- 1) The Operational Level – is the level of analysis which considers actual management of natural resources and the environment;
- 2) The Collective Choice Level – is the level of analysis which considers the development of the laws and policies which constitute the official “rules of the game”;
- 3) The Constitutional Level – is the level of analysis which considers the rules and assumptions which lay down what is possible at the Collective Choice Level (i.e. this level creates a framework in which all other decision-making should operate).

All these three institutional levels are linked as illustrated in Figure 1. At each level, actors are faced with action situations with strategic options and role expectations as defined at higher levels. The actors at one level then concurrently produce patterns of interactions and outcomes (McGinnis, 1999).

² IAD is a theoretical approach developed by Professor Elinor Ostrom of Indiana University in 1973. As an inherently multi-disciplinary approach it is eminently suited to an understanding of good governance in environmental and natural resource management.

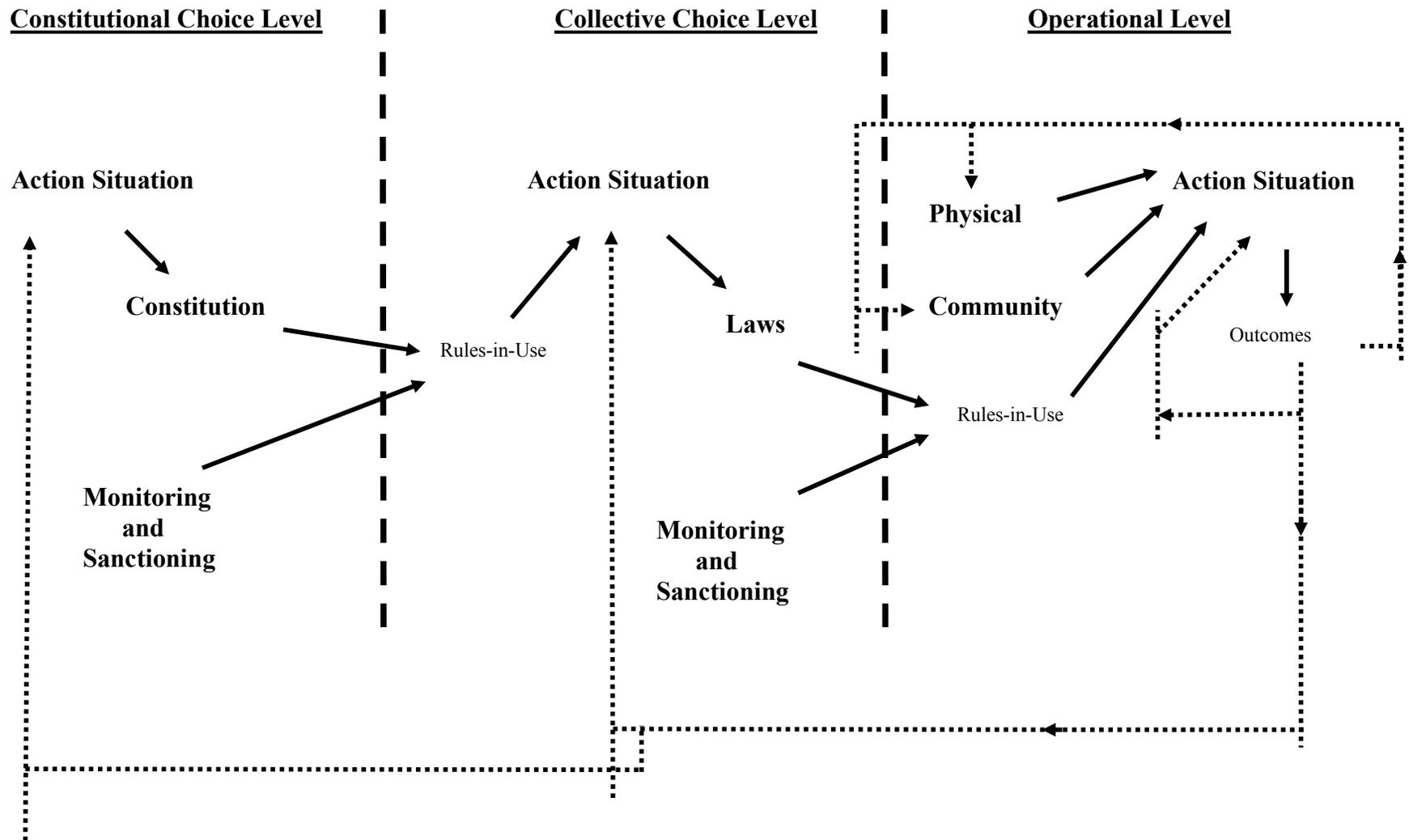


Figure 1 : Linking levels of analysis (Ostrom and et.al, 1994)

In terms of environmental or natural resource management, the decisions at the operational level have the most direct impacts. The nature of the resources and environment in question, the structure of societies using or dependent on these resources and the rules already in place all have an influence on the decision-making of stakeholders at the operational level (**see Figure 2**).

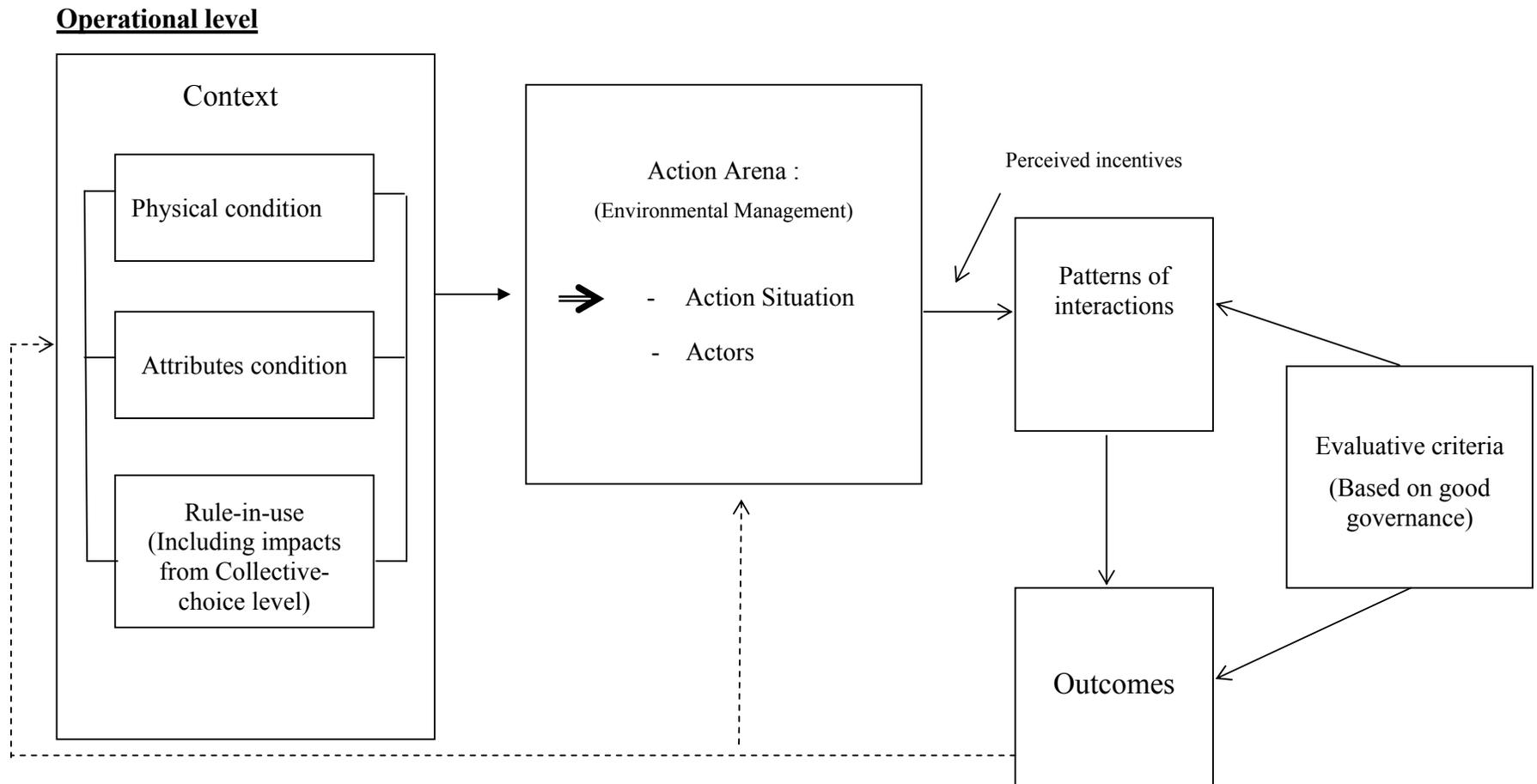


Figure 2 : IAD framework at the operational level (Adapted from Ostrom and et.al, 1994)

In the Thai perspective, the levels listed above correspond to the following institutional context:

- 1) At the first level – the Constitutional Level – is the Constitution of the Kingdom of Thailand instituted in 1997;
- 2) At the secondary level – the Collective Choice Level – are the policies and laws of the government some of which have been adjusted in line with the recent Constitution, and some of which were developed under previous Constitutions;
- 3) At the third level – the Operational Level – are the operational rules which affect actual use and management of natural resources and the environment.

In order for natural resource and environmental management to be effective and sustainable, the three levels must have inter-relationships which support sustainable use and/or conservation and which operate on the principles of good governance as described above.

In the Thai context, the Constitution of the Kingdom of Thailand (1997) recognizes rights of the individual and of communities in the management of natural resources and the environment (see Articles 46, 56, 58, 59 and 69 for example). However these are not always supported by the necessary implementing subordinate legislation at the collective choice level.

At the second level, the collective choice level, currently there are laws and policies in place which also provide for public participation in the management of natural resources and the environment (see the Enhancement and Conservation of National Environmental Quality Act 1992 for example). Nevertheless, these laws are more or less rules in form rather than rules in use which will later be further discussed.

At the third level, the operational level, examination of the real roles of the state, private sector and local communities in natural resource and environmental management demonstrates that all sectors are involved in decision-making for natural resource use and environmental management at some level, but the checks and balances necessary for effective governance are lacking, and there is a need for greater recognition of the participation of the local communities that are dependent on the natural resources and environment in different locations.

Considering the cases of natural resource management, an empirical example in the case of mangrove conservation in Southern Thailand demonstrates that at the operational level, local communities may establish their own rules for natural resource management

which result in good governance on the ground level. These examples appear to arise where communities have reasonable control over access to these resources and are able to draw clear relationships between conservation and management and the benefits which they derive from use (e.g. with respect to non-timber forest product harvesting) (Sathirathai and Barbier, 2001). In such a context, there exist drivers to conserve and deterrents against unsustainable exploitation in that communities are dependent on the long-term existence and harvest potential of these natural resources. However, these good practices by local communities at the operational level can hardly be sustained if the institutional mechanisms at the collective choice level, which in this case are the legal rights of these people, are not in place. It is interesting to note that while the institutional mechanism at the top level namely the current Thai Constitution recognizes rights of communities in the management of natural resources, there is an institutional vacuum at the second level since the Forest Community Bill has not been passed by parliament. Consequently, it is hard for good governance to occur when all the three institutional mechanisms are not well co-ordinated.

Furthermore, in several cases of natural resource management at the operational level there is often a dichotomy between the “rules in form” at the collective choice level (second level) and the “rules in use”. In such a context, while local communities may play an important role in protecting natural resources for the long-term benefits of their community, this may be undermined when the second level relating to collective choice does not permit its active involvement in management of natural resources or the environment. In such a context, the sustainability of local community involvement can be adversely affected and drivers for such a positive contribution to natural resource management may be weak or non-existent. Alternatively, even where rules established at the collective choice level support community management of natural resources, in practice, state officials or private sector individuals may adapt these rules to support their own self-interest rather than the interests of the broader community. It is apparent therefore, that in order for environmental or natural resource management to be truly sustainable and effective the rules at all three levels and implementation of those rules must be mutually supportive and in line with the principles of good governance.

The discussions above focus on the cases of natural resource management in which local communities may have some incentives to participate in the protection of the resources at the operational level. Unfortunately, as will be seen in later discussions in Section 5 on industrial management, the problems of asymmetric power and economic dependencies between local communities and industries tend to disempower communities to work against

industrial pollution. These problems are the result of mainstream development policy which stresses industrialization as the only path to development and at the same time believes that poor communities should be willing to sacrifice their well-being and environmental quality for a promise of greater prosperity in the future. Case studies in Thailand demonstrate that local communities are aware of the environmental and social costs of industrialization but lack the bargaining power to participate in changing the current situation. The lack of good governance at the global level in controlling the behaviour and investment strategies of transnational corporations adds to dilemmas facing national governments and grassroots participation in any efforts attempting to follow an industrial path to modernity and development.

In the next two sections, the paper discusses the environmental and social impacts of the current trend of industrial development under globalization both at the global and at the national levels.

3. Globalization of Production: A Trend of Industrial Development in the Global Economy³

This section explores the current trends of industrial development based on free capital movements in a global economic system in the context of environment, health and safety. Three problematic issues are identified, namely export of polluting industries, export of polluting technologies and trade in hazardous substances, and trade in hazardous waste.

3.1) Export of polluting industries and technologies

After a century of industrialisation in the countries of the Northern Hemisphere, a gradual process of movement of industrial capacity to other areas of the world began. After World War II, a large number of industries in the USA and Western Europe moved their production centres to countries in Eastern Europe and Japan. In the 1960s, production capacity began to move to those countries referred to as Newly Industrialising Countries (NICs). In this movement, Japanese companies were the leaders with companies from the US

³ This section comes from the White Paper on Industrial Development in the Existing Context of Globalisation and its Impacts on Sustainability prepared by Good Governance for Social Development and the Environment Institute (GSEI) and Centre for Social Development Studies, Faculty of Political Science, Chulalongkorn University, Thailand (2002) distributed in the World Summit on Sustainable Development 2002 in Johannesburg, South Africa.

and Western Europe following behind. At the same time, the desired locations for this movement of industrial capacity began to expand to consider all developing countries and those countries referred to as countries with economies in transition.

Between 1970 and 1998, global Foreign Direct Investment (FDI) increased nearly 15 fold from 44 billion US dollars to 644 billion US dollars. At the same time, investment in developing countries increased 11 fold from 21 billion US dollars to 227 billion US dollars with the contribution from private sources doubling during the same period (French, 2000: 81).

Transnational corporations (TNCs) effectively dictated the direction of flows of the majority of FDI in that as soon as TNCs began to increase the level of their investment in a developing country, FDI would follow showing a similar increase (Maddeley, 1999: 2-3). TNCs have become increasingly significant in terms of global production. Between 1970 and 1998, the total number of TNCs in the world increased from 7,000 to 53,600, with an additional 449,000 subsidiary companies.

Aside from FDI, development assistance and development loans have been another means by which the centres of industrial production have moved to the developing world. Significant criticism of development assistance and development loans has focused on how these mechanisms have been instrumental in expanding the economic reach of industrial companies with significant pollution problems. As Professor Jun Ui, Department of Economics, Okinawa University, Japan, himself an expert in pollution issues in Japan noted: “.....one aspect of investment (of Japan) during the 1970s was the export of polluting industries. Industries which could not operate in the context of the strict laws of Japan moved to other countries in Asia or Latin America where land prices were lower and environmental regulations had not taken effect. The companies which have received the most criticism is the Nippon Kakoo (Japanese Chemical) Company which produced chromium hexavalent in South Korea, and Kawasaki Iron and Steel which built a smelting facility in Mindanao in the Philippines. The movement of industrial technology of Japan to developing countries did not only create a context of unfair trade, but also created environmental ruin...”⁴

The wave of environmental awareness in the industrialised countries has not only caused governments to implement policies and strict environmental protection measures, but it has also forced them to consider options for industrial operators. In general, there have been two paths taken:

⁴ Industrial Pollution in Japan, 1992.

1. The first path is one whereby new technologies have been developed to reduce pollution and the emission of harmful chemicals into the environment. Newer aspects of this path have been the development of clean technology and integrated life cycle management.

Where new technologies are developed and a clean technology path is sincerely taken, all the citizens of the world feel the benefits, but there are several problems with this path which have tended to limit its adoption. Notably, there are limitations on the technologies available, and there are problems associated with the capital costs involved with changing production processes, technologies and administration.

In the real world of finance and business, increasing capital costs remain something to be avoided. Policies to encourage adoption of clean technology have tended to focus on voluntary agreements and have met with only mixed success.

2. The second path is one whereby the level of industrialisation in developed countries has been reduced de-industrialisation. At the same time, industrialists are encouraged to move their production capacity to other (developing) countries.

At first glance, this transfer of production might be seen as bringing benefits to the recipient countries. However, in fact, a major motivating factor hidden in this ostensibly favourable move is the intent to move waste and pollution from developed countries to developing countries. This is demonstrated when one considers the type of industries to receive support for development in developing nations: these are predominantly dirty industries with deleterious effects on the environment, e.g. petrochemical industries, electronic industries, iron and steel foundries, chemical industries, refineries etc.

In order to answer the environmental awareness in their societies, developed countries export these dirty industries to other countries under a general policy of de-industrialisation. At the same time, export of these dirty industries is promoted to the developing country recipients as support for investment and development, job creation, technology transfer, and other public “goods”.

In this context, policies to encourage export of industrialisation essentially encourage the export of pollution and are a major contributor to pollution crossing international borders. Waste, pollution, and hazardous chemicals in the world are in a state of continual movement with the main sink at present being the developing world.

While there have been many efforts to raise awareness of these negative impacts of industrialisation in developing countries, industrialisation is *still* the main mechanism considered for development in many countries around the world, particularly the developing

countries. In these countries, the belief is still that industrial development alone will lead these countries towards progress and development.

Thus, countries in the Third World extend their open arms to industry and foreign direct investment, and compete to receive the benefits these will bring by instituting policies to give first priority to foreign investment and create the appropriate “investment climate”. Such attention is given to promoting a country as having an appropriate climate for investment that this assumes precedence over all other issues. It is of paramount importance that the country is portrayed in a positive light. In such a context, it quickly becomes the case that any action on the part of any group of citizens requesting assistance in solving problems arising from investment in industry becomes an inappropriate action that may have negative consequences for the favourable climate for investment.

Apart from the issue of exporting polluting industries, there is also a tendency for developed countries to export polluting technologies to developing countries. The last ten years has seen a marked expansion in production of the information technology industry to produce new goods to answer the lifestyle needs of present day consumerism. This new production involves increasingly complex production processes and results in rapid obsolescence of technical goods and technical processes. The transfer of obsolescent technologies and processes thus becomes another goal for transfer of production capacity. In the developing world, with low labour costs and limited or unenforced worker safeguards, these technologies can still be used effectively albeit with appalling social costs. At the same time, transfer of these technologies produces a situation whereby per unit costs for consumer goods can be kept low while the risky work associated with their production, and the pollution and hazards resulting from handling of the chemicals needed in such processes are all kept away from the societies of the developed world.

While on the one hand development of the strict environmental laws in the developed countries is one of the main drivers for out-of-date technologies being exported to the developing world, the trade and business benefit has been the maintained use of certain hazardous chemicals throughout the world for use with these technologies.

The spread of out-of-date technologies and its effects on the environment and health have been clearly demonstrated over the last 2-3 decades and continue to the present day. Polluting technologies have been exported to developing countries in the form of large investments, construction of industrial infrastructure projects, or in the form of large waste treatment projects that are the source of persistent organic pollutants (POPs) and heavy

metals. The end result of the production processes of these out-of-date technologies and chemicals is severe pollution and harm.

3.2) Trade in hazardous waste

The history of trade in hazardous waste has much in common with that of the move in industrial production. The core driver has been increased environmental awareness among communities in the developed world, and a desire among businesses and governments of the developed world to find low cost solutions to waste disposal problems relating to hazardous waste.

Essentially, the dynamics of international trade in hazardous waste involve drivers to address hazardous waste disposal issues in OECD countries in a global context of severe inequality between developed and developing nations. First, there is rigid control over hazardous wastes in OECD countries leading to high disposal costs in country; second, there are increasing volumes of hazardous wastes being produced in OECD countries. Global disparities in relative wealth then conspire to lower relative wages in developing countries, and in a sense the value attributed to the life of a citizen of a developing country when compared with a citizen in a developed country. Secondly, the relative ability of developing countries to maintain rigid control over disposal of hazardous wastes is lower than for developed countries. This in turn leads to lower disposal costs. Significantly also, there is a heightened desperation for short-term wealth among developing communities, regardless of long-term impacts. Finally, there is often an implicit if not explicit threat from TNCs to shift trading centers in the event that communities in the developing world do voice concerns about environmental management or impacts on health in communities.

Thailand's experience of trade in hazardous waste has claimed many victims. On March 1991, extremely toxic and flammable imported wastes mislabeled as silicone and fertilizer exploded and burned after sitting at the docks in Khlong Toey, Bangkok, for several years. The fire killed 5 people and destroyed 600 homes in neighbouring communities. Hundreds of people had to be treated for smoke inhalation and poisoning. The after effects of the fire continue to be felt by people exposed to the toxic smoke with respiratory illnesses and long-term debilitation common. The toxic residues from the fire were hastily buried in a leaky dump site in a wilderness area in Northwestern Thailand.

Similar instances have occurred in 1992 in Bangladesh, 1995 in India, 1996 in China, 1997 in Cambodia, and 1998 in the Philippines⁵. Very recently, trade in hazardous waste from the computer industry has made the news as it has affected communities in mainland China. In this latter case, the government of the United States of America was called upon to take responsibility for this hazardous waste.

Trade in hazardous wastes has not only occurred in Asia. Throughout developing countries in all areas of the world, weak environmental legislation, limited enforcement, and limited understanding of environmental and health and safety issues have left communities exposed to the hazards of wastes produced in the developed world and shipped for disposal to the developing world. The extent to which these wastes are hazardous is now increasing as more and more high-tech products containing heavy metals and other hazards become staples in the lifestyles of the developed world (and, indeed among the elite of the developing world also). For example, electronic waste is becoming an increasingly difficult problem to solve both with respect to wastes stemming from production, and wastes arising from the rapid obsolescence of these types of technology and hence high rate of disposal.

4. The State of Industrial Development and Pollution in Thailand⁶

Economic development and industrialisation have gone hand-in-hand in Thailand since the 1960s. National economic plans supported by multilateral and bilateral development funding have emphasised the importance of creating a suitable investment climate and national infrastructure to support industrialisation and export growth. Like many countries in the developing world, Thailand has made concerted efforts to leave its agricultural past behind and advance towards the dream of modernity and industrialisation. The development of large industrial infrastructure projects, such as the Eastern Seaboard Project, the desire to be accepted among the ranks of the NICs, the opening of Thailand's financial system to international players before the Asian economic crisis, these have all been efforts to industrialise Thailand.

And, certainly, Thailand has been successful in its desire to shift from a society depending primarily on agriculture to one with a strong manufacturing base. In 1969 there were approximately 600 factories in Thailand. Ten years later, the figure had jumped to 22,000. In 1989 that number had more than doubled to 50,000, and currently, despite the

⁵ See www.ban.org for more details

⁶ opcit 3

impact of the economic crisis on industries in Thailand, the number stands at more than 100,000. FDI has similarly shown rapid increases from 1.6 billion Baht⁷ in 1985 to 205.7 billion Baht in 1998⁸. Between 1970 and 1979 much of this rapid industrial growth was clearly created by a movement of heavy industry from Japan to Thailand and other countries in Southeast Asia. Investment during this era was highly centralised with approximately 70% in the capital city of Bangkok and the greater metropolitan area (Bello, Cunningham, and Poh, 1998). Not surprisingly, this concentrated industrialisation and urbanisation resulted in serious environmental problems such as air and water pollution, and subsidence caused by excessive abstraction of groundwater for use in industries. Later efforts to encourage investors to move out of this central area focused on state-owned industrial estates, and privately-owned by state-supported industrial zones, parks and centres in the provinces. Major government interventions also centred on infrastructure development efforts such as the creation of the Eastern Seaboard project in the area of Rayong on the Gulf of Thailand. Further afield, industrial development projects focused around regional centres such as the Northern Region Industrial Estate in Lamphun province.

These developments have always been promoted as demonstration of Thailand's movement towards modernity and progress. Organizations and communities questioning the value of these projects have been at once dismissed as fringe elements, ignorant of the best benefits for society, and as destabilizing elements creating an unfavourable investment climate.

At the same time that Thailand's economic and manufacturing base has been changing, so has Thailand been giving up its relative economic independence. Initially, agricultural production dependent on Thailand's natural resources was the mainstay of the economy. Increasingly, however, a significant part of Thailand's manufacturing capacity serves as an assembly line constructing, for example, computers to be exported to the developed world, out of parts shipped in from other parts of the world⁹.

Changing investment values have great impacts on the lives of individuals and communities in Thailand. These demonstrate the increasing complexity of decisions individuals and local organisations are forced to make concerning their livelihood and

⁷ 1 US dollar is approximately 40 Thai Baht

⁸ Bank of Thailand (www.bot.or.th)

⁹ Similarly, Thailand's largest generator of foreign exchange in recent years has been the tourism industry. In the manner of an analogy for the wider results of such economic dependency, scenes in Thailand's island resorts demonstrate how the tourists must at all costs be presented with an image of a lush and plentiful land. While local residents may go without water during the dry season, hotels still serve their guests with in excess of 80 litres a day with the full support of local and national government administrations.

welfare. They also demonstrate a relative powerlessness to influence change and to protect oneself from things one knows cause harm.

The continued problem of poverty and increasing inequality in social power and in incomes are development issues which quickly translate into social problems. The changing face of Bangkok and its surrounding areas is a good example of the crises affecting many urban centres in the developing world. While factories and slums are spreading throughout these centres, it appears that by any measure of welfare or development (access to clean water, decent transportation, air quality, percentage below the poverty level etc.), these urban centres are showing a decline in development and becoming increasingly inhospitable places in which to live.

Industrial pollution has been a problem since the very beginnings of industrial development in Thailand. As early as 1964, workers in a Bangkok factory were suffering from manganese poisoning. From 1967 onwards unplanned and unregulated use of natural resources for industry became an increasingly severe and widespread problem. In 1972-1973, discharge of wastewater from a factory on the Mae Klong River, and the subsequent fish kill and water quality problems was a stimulus for the birth of the environmental movement in Thailand. In 1973, the movement for democracy and the brief period of "people power" owed at least something to the environmental movement in its concern for the direction development was taking Thailand, and the impacts of that development on the environment and society.

From 1977 onwards diverse forms of pollution became more apparent to society with work-related illnesses such as lead poisoning and asbestosis becoming increasingly common.

The Eastern Seaboard project provides a clear demonstration of the effects of industrial pollution in an area of heavy industrial development. Since the beginnings of investment and development of this area there have been continual reports of environmental problems, health issues for local communities relating to air emissions, illegal use of public land, problems with disposal of industrial wastes, disregard for zoning restrictions, accumulation of pollutants in coastal habitats and in fish stock in the Gulf of Thailand, and industrial accidents.

The spread of industrial estates throughout the country, although presented at once as the advance of progress and the solution to industrial environmental problems¹⁰, has continued to raise issues concerning land selection and the capacity of these estates to address industrial waste and pollution problems in almost all locations in which they have been established. In many instances industrial estates were established on community land and on agricultural land. As a result of the development of these estates, communities have frequently been divided by internal friction over division of benefits, changes in resource use and accessibility. In many cases, the supply of natural resources such as water has been diverted to serve the needs of industries in the industrial estates, and communities have found their water supplies degraded and insufficient for their needs. Finally, air and water pollution problems are common in areas near industrial estates as are waste disposal issues (Misinthawisamai, 1997).

There are also the hazards of industrial accidents which may or may not spread to neighbouring communities, but which have often resulted in deaths or injuries to the workforce. The Pollution Control Department of the Royal Thai Government reports that in the year 1999-2000, there were 24 industrial accidents in Thailand involving chemical substances. 50 people died, and almost 1,400 were injured. In 2000, there were 31 industrial pollution incidents of which 16 involved leaks of chemical substances, 9 involved illegal dumping of hazardous substances, and 6 incidents were emergencies concerning water courses¹¹. It is worth noting here, that compensation to the injured is often not paid or is insufficient to cover the costs of medical treatment, loss of employment opportunities etc., whether or not those injured are employed in the facility or are resident in neighbouring communities.

Furthermore, as industrial development requires a large and often young workforce, local demographics change and in-migration increases with social problems stemming from inequalities in access to work, and prejudices between the migrant and resident communities. Thus for example, prior to the development of the Map Ta Phud Industrial Estate in Rayong province, Central Thailand, the local population was 8,000. Currently, the population registered as resident stands at 30,000¹².

¹⁰ The intent of these estates has been presented as one of bringing the industries together with appropriate environmental management to limit the spread of industrial pollution and provide suitable facilities for industrial development in the regions.

¹¹ Environment News 20/2543

¹² The actual population is likely to be considerably higher because many migrant workers rent accommodation and do not bother to move their house registration to the place of their work.

Industrial development also increases the production of industrial waste. Unfortunately, Thailand's capacity to deal with industrial waste is very limited (there are only two plants in the country equipped to handle hazardous wastes). It is therefore of no small concern that hazardous waste production has increased from 0.9 million tonnes per year in 1990 to 1.48 million tonnes per year in 1996 and 1.65 million tonnes in 2000. No more than 6 percent of all hazardous wastes is generated in communities in Thailand; the rest is industrial waste. The majority of this waste is produced by the electronics industry, the automotive parts industry, and the chemical industry.

In addition to the industrial waste Thailand produces itself, communities also have to contend with hazardous substances which were not produced in Thailand, but which are imported for use in agriculture and which, in some instances, are imported directly as waste.

5. Thailand Industrial Waste and Pollution Management in a Context of Environmental Governance

The previous sections examine the current trend of industrial development both at the global and at the national levels. This section analyzes the extent to which environmental governance in the case of industrial waste and pollution management in Thailand is being achieved in such a context of globalization. The analysis is based on the key findings of the first phase of the research project on "Good governance and public participation in environmental protection" undertaken by the Good Governance for Social Development and the Environment Institute or GSEI under the support of the Thailand Research Fund (TRF) (GSEI, 2002)¹³.

This project also emphasizes that "Good Governance" should not be confined to only good principles but equally importantly, how to achieve these principles. In other words, good governance is both the means and the ends. For example, laws which are good in writing may be useless if they fail to be effectively implemented.

¹³ The research team on this part includes Suthawan sathirathai (Project leader and researcher), Chaiyon Praditsil, Chantana Wankhao, Danai Sarapruk, Eathipol Srisawluck, Isra Sarntisart, Jaron Kampanna, Kwanchewan Buadaeng, Phongtape Wiwatanadate, Renu Sukharomana, Somsri Patamapan, Soparatana Jarusombat, Surichai Wankhao, Voravid Charoenloet, Yuwadee Kardkarnklai.

In this research project, GSEI considers the application of good governance principles in Thailand. To do so, GSEI has applied four theoretical perspectives: (1) political, social and cultural, (2) health and environmental, (3) management and economics, and (4) legal and institutional. These have focused on analysis of the constraints and conditions affecting the behaviour and decision-making of stakeholders in the context of environmental and natural resource management related to industrial waste and pollution. It is worth noting here that an underlying theme of the work undertaken by GSEI has been participation of all stakeholders in the research. GSEI has adopted a Participatory Action Research (PAR) approach to this research which reflects the commitment of the researchers to good governance principles in their research.

In analyzing the problems, the author applies an Institutional Analysis Development (IAD) framework (see Section 2.2)) to consider the existing environmental management governance situation in a number of industrial areas which are experiencing environmental problems, and to identify appropriate mechanisms to address problems in governance in management. Conditions conducive for environmental governance in a Thai context are also identified.

5.1) Institutional analysis of the governance problems based on the selected case studies

As discussed above, if the author applies an IAD approach to good governance in industrial waste and pollution there are at least two levels of implementation namely the *collective choice and operational levels* which are critical if sustainable development is to be achieved both as a goal and a process. It is also clear that the role of the local community in natural resource and environmental management must not be overlooked, and that community structures have significant roles to play in instituting appropriate checks and balances at the operational level. With respect to industrial waste and pollution management in Thailand it is clear that local communities are generally given virtually no say in determining the direction of management and lack any power to influence decision-making. Consequently, there are virtually no checks and balances with respect to industrial waste and pollution management in Thailand.

Furthermore, in areas where the main generator of income for a community is industry, an economic dependency is created whereby members of the community are often unwilling to challenge the behaviour of the private sector or the state with respect to industrial pollution and waste management. The extent of community economic dependency is exacerbated because of the country's adoption of mainstream development policy which

emphasizes industrialization with strong support of FDI¹⁴ while its relative lack of economic and political power in the world economy.

Globalization over the last three decades has been characterized by a shift of polluting industries (or dirty industries) to countries with weak enforcement of industrial environmental legislation (pollution havens). Effectively, governments establish national industrialization policies which market labour forces and natural resources at the lowest prices possible and with minimal safeguards for the health or the environment. So-called footloose industries in particular (those industries with minimal initial start-up costs and a high dependency on unskilled labour) remind local institutions and governments of their ability to move to more favourable production settings should the local investment climate become less favourable.

In fact, at the second level of analysis (the Collective Choice Level), Thailand has in place a number of legislation governing industrial production and its effects on natural resources, environmental quality and health. Notably, there are the following Acts in place:

- The Factories Act 1992 which covers health and safety of workers, industrial environmental management and responsibilities and duties of industrial production managers and directors;
- The Hazardous Substances Act 1992 which covers transportation, storage, safe handling, use and disposal of hazardous substances to minimize adverse effects on the environment and the health and safety of workers and communities; and
- The Enhancement and Conservation of National Environmental Quality Act 1992 which sets standards for environmental quality and establishes the rights and duties of individuals and communities with respect to natural resource and environmental management.

¹⁴ There might be some light at the end of the tunnel that the current development policy also encourages locally owned small and medium scaled industries.

Unfortunately, the nature of Thailand's industrial policy which leads to dependency, a lack of transparency and accountability in government practice, and inherent conflicts of interest in the duties of many government departments responsible for enforcement of environmental management controls¹⁵, has led to generally weak enforcement of these laws in practice (i.e. at the Operational Level or at the 3rd institutional level).

In some instances, international standards for environmental management have been set in place or demanded by consumers in the developed world (e.g. ISO 14001). There has been the hope that these might create an environment and generate the drivers necessary for industrial producers to voluntarily change their practice to improve industrial environmental management. However, a lack of good governance (notably transparency) in local practice, and inherent weaknesses in these voluntary standards quickly undermine the effectiveness of these voluntary controls and instead allows industrial producers an opportunity to hide behind these standards as demonstration that their industrial production facilities are not responsible for the environmental damage occurring in their vicinity (Pringle et al, 1998). Eventually these standards serve merely as a commercial trademark and at the same time create a moral hazard.

These problems in implementation of laws and voluntary standards demonstrate the importance of ensuring that all stakeholders at all institutional levels practice good governance principles and are aware of the inter-relationship among the three different institutional levels of practice.

In the Thai context, however, it is apparent that there is considerable asymmetry in the power to affect decision-making in industrial environmental management with power confined to state officials and the private sector.

In the context of industrial environmental management, we can consider governance systems at three different systems:

1. Industrial development system;
2. Internal industrial environmental management, including those aspects which affect worker health and safety; and

¹⁵ Government departments responsible for industrial environmental management also have the core mandate to promote industrialisation. In effect, in the context of Thailand's economic dependency and the tendency for TNCs to move towards cheaper production centres, this creates an internal conflict of interest at the heart of Thailand's industrial administration.

3. Management of environmental aspects which affect communities beyond the confines of the industrial facility.

With respect to GSEI's research context, the main focus has been on the *operational level* (level 3). At the same time, we recognize the importance of the *collective choice* and *constitutional choice levels* in creating the rules and context in which decisions are made at level 3.

Summary of the case study outcomes

As stated before, GSEI adopted a multidisciplinary Participatory Action Research (PAR) approach in its research which focused on the following four case studies.

1. Industrial Environmental Management in the Northern Region Industrial Estate in Lamphun Province: Worker health and safety – an examination of the effectiveness of internal industrial environmental management;
2. Industrial Environmental Management in Lamphun Province: The Nong Ped Community and Air Pollution Problems – an examination of the effectiveness of management of environmental aspects which impact communities beyond the confines of the industrial facility;
3. Industrial Waste Management – two case studies which examine the effectiveness of management of environmental aspects which impact communities beyond the confines of the industrial facility:

3.1 The Case of GENCO (a large industrial waste management facility);

3.2 The Case of Hazardous Waste Dumping in Kanchanaburi Province

The four case studies demonstrated different aspects of problems which arise in industrial environmental management in Thailand. These were considered from an IAD perspective.

Case 1: Worker Health & Safety in the Northern Region Industrial Estate in Lamphun Province

This case study considers worker health and safety as an indicator of internal industrial environmental management. In the course of the study workers in various facilities in the industrial estate in Lamphun province were asked about their work routine and the health problems they experienced. Blood tests were conducted to assess levels of heavy metals etc.

to which the workers were exposed during work. Abnormally high levels of some heavy metals were found in the blood of several workers involved in the electronics industries. The Actors at this level are recognized to include the private sector (industrial facilities), industrial workers, and state entities including the Industrial Estate Authority of Thailand, the Department of Industrial Works, and the Ministry of Labour and Social Welfare.

Core good governance issues which relate to the problems experienced by workers in these facilities can be described as follows:

1. The nature of the electronics industry requires use of heavy metals and hazardous chemicals. This type of industry is also a footloose industry which searches for host country with low costs of production especially cheap and unskilled labour. Further, an effective internal industrial environmental management process requires capital investment which means increased costs. With the highly competitive atmosphere in attracting foreign investment in the region, it is unlikely the industry will increase its costs by investing in effective environmental protection;
2. At the Collective Choice level the government policy emphasizes attracting foreign direct investment through low capital and operating costs. Furthermore, the component assembly line stage of the electronics industry which is currently operating in the Northern Region Industrial Estate is a footloose industry with high potential to move rapidly to areas with lower capital and operating costs than can currently be found in Thailand;
3. At the Collective Choice level there is a conflict of interest within the government departments responsible for industrial promotion and enforcement of environmental management and worker health and safety. That is to say, the same departments are responsible for both elements of industrial management;
4. Labour policy at the government level focuses primarily on attracting investment to create jobs rather than on protecting the health and safety of workers;
5. The majority of workers in the industrial facilities are migrant workers from other provinces. Consequently, they are not readily accepted as part of the local community and they thus lack social and economic security;
6. The conditions for labour management in place do not support workers protecting their health or other benefits. There is no support for unionization or means to establish bargaining power for protection or compensation if workers become ill or

are injured as a result of work. Such an act is considered to hamper the investment climate.

To summarise, this case demonstrates major asymmetries in terms of economic bargaining power and access to information, an absence of institutions to protect the rights of workers, and conflicts of interest in the government departments responsible for protecting the interests of the workers. Even where the law requires, for example, the creation of a position specifically for worker health and safety, the fact remains that such positions are in the company employ and almost inevitably are not so much representative of the needs of the employees as they are a protection of the interests of the employer. Research has found that most workers resign from their work as soon as they become sick and never demand compensation. Furthermore, because the majority of factory workers are migrant workers, once they leave the employ of the industrial facilities there is no follow up by state officials.

Case 2: The Nong Ped Community and Air Pollution Problems – Industrial Environmental Aspects Affecting the Wider Community

The Nong Ped community in Muang district, Lamphun province has suffered repeated air quality problems from a cement factory in the Northern Regional Industrial Estate.

The major Actors in this case study are the cement factory (private sector) which is a Thai-owned company, the Nong Ped community, and state entities including Lamphun province administration, the Industrial Estate Authority of Thailand, the Department of Industrial Works, and the Pollution Control Department (PCD). By law, the cement factory is responsible for effective management to minimize pollution and waste of all sorts affecting areas beyond the premises of the facility. In practice however, the level of industrial environmental management has been inadequate to prevent repeated air pollution problems being experienced by local communities.

During a period of 3-4 years local communities in this area made repeated complaints to the local authorities and to the industrial estate authorities. No actions were taken. After some consultation with GSEI research team, the communities made complaints to the PCD which has legal power to investigate pollution incidences. On investigation it was found that emissions of a toxic chemical were above health tolerances. Most notably, however, the Thai company which owns the facility was embarrassed by public attention given to the pollution incident. This Thai company has a reputation for sound environmental management which was adversely affected by the publicity given to the pollution problems affecting the plant

near Nong Ped. Consequently, in order to preserve its public image, the company has lately been giving a high level of attention to reducing emissions to within standards and is addressing the problems of a persistent smell for which no emissions standards have been promulgated.

Core good governance issues which relate to the problems experienced by the Nong Ped community can be described as follows:

1. Central waste treatment facilities established on the industrial estate were not designed to accommodate heavily polluting industries such as cement factories. Furthermore, the cement factory in question did not install adequate air pollution treatment equipment. Despite this omission, in its initial operation the facility in question was not notified of this inadequacy by the industrial estate authorities;
2. Local communities in the Lamphun area are heavily dependent on the industrial estate for their economic security. Previously, the community was largely dependent on agriculture. When the industrial estate was established there was a rapid and radical change in way of life throughout the areas affected by the estate. Immigration of migrant workers to work in the facilities on the industrial estate has further affected the structure and independence of local communities with many in the community providing services of various sorts to the migrant workers (e.g. food, accommodation etc.). Thus, despite the fact that many in the community see industrialization as having adversely affected their quality of life, nonetheless, they are unwilling to raise problems with industrialization for discussion for fear of deterring investment in the area. The economic study demonstrated high economic dependency of local communities on industry and severe unequal income distribution problems.
3. At the Collective Choice level, government policy on industrialization has focused on income generation by attracting industry and neglected to measure or address the resulting social and environmental costs.
4. Government entities responsible for enforcement of industrial environmental management legislation are also responsible for attracting industrial investment. In cases where local communities are affected by environmental management, the Pollution Control Department (which was established with a purely environmental protection/management remit) has powers to enter industrial facilities and identify the

source of such pollution incidents. However, actual enforcement is still coordinated through the industrial estate authorities or factory inspection authorities.

5. Decentralisation has delegated considerable powers in environmental management to local authorities such as the District Council. However, in most cases, the local authorities lack the capacity to be effective implementers or enforcers in environmental management, or are not genuinely representative of the community. In these instances, local communities do not feel they can depend on these institutions to address their problems.

To summarize, this case again demonstrates the problems that arise when the government entity responsible for enforcing environmental legislation relating to industrial management is also responsible for attracting industrial investment (conflict of interest). This case also demonstrates problems of a lack of capacity of local authorities in environmental management, and an absence of institutions for genuine community representation. Despite repeated complaints concerning emissions of a chemical known to be hazardous to health, nothing was done by the local authorities or the responsible industrial management authorities. It was not until officials were threatened with court action for dereliction of duty that any action was taken. This case also demonstrates an asymmetry of power between communities and industry (because of the economic dependency) and between communities and industrial management authorities that prevents the institution of proper checks and balances necessary for good governance.

Case 3.1: The Case of GENCO

The General Environmental Conservation Public Company Limited (GENCO) is an official industrial waste treatment facility. This case study centres around the selection process for the site on the Eastern Seaboard Development Area.

During the initial site selection, the company encountered several problems. Three sites were proposed in Rayong province: Tambon Nong Ta Sit (Pluak Daeng District – the Nong Ta Sit community), Tambon Huai Pong (Muang District – the Map Chalood community), Barn Khai District (Barn Nong La-Lork community). In all locations there was considerable opposition to the proposed construction of the facility and a complicated series of conflicts of interest at all levels from those existing between GENCO and local communities, to those between the company and local authorities, to those between GENCO and national decision-makers. The Actors in this case comprise the local communities, the company, civil society (at a wider level), local politicians, and state entities including the

Industrial Estate Authority of Thailand and local government officials. In the final analysis, there still exist problems with industrial waste treatment and the plant has in fact become simply a holding ground for industrial waste produced in Thailand.

In the analysis of this case, the following context is of interest:

1. The environmental constraints of the case arise from the fact that the proposed location for the facility is in the Eastern Seaboard Development Zone. This area was designated as an industrial development zone and as such has a large number of heavy industries notably petrochemicals. These industries produce large volumes of industrial waste. However, in instituting a policy to encourage this kind of investment the state sector neglected to consider the infrastructure requirements with respect to environmental management. Consequently, within the designated industrial estate areas there was no available space for industrial waste treatment. It was subsequently, therefore, very difficult to find appropriate locations for an industrial waste treatment facility beyond the boundaries of the existing industrial estates. Furthermore, negative perceptions of industrial environmental management both in the immediate and further vicinity of these industrial facilities exacerbated conflict and mistrust of government guarantees of the safety of the proposed industrial treatment facility.
2. The local community in the area had relatively strong bargaining power with the industries involved because these industries are heavy industries requiring heavy initial capital investment. Consequently, they have limited mobility once they are already established (quite different from the footloose industries in Lamphun). However, within local communities there were a number of bases for conflict including conflicts over land sale, construction contracts, political exposure and coverage, and conflicts arising from differences in values with respect to nature conservation. These different conflicts combined to create a complex environment for negotiations and resolution.
3. In the initial phases, the approach taken to conflict resolution was largely dependent on central government power and on obtaining support from upper level community leaders rather than on obtaining genuine acceptance from the local communities concerned. Consequently, this created even greater conflict within the community. Later attempts at conflict resolution aimed to give the community more input and more participation in resolving these problems.

4. The land selection process became a moveable platform for local politicians with direct relations with the potential benefits they could derive either from opposing the construction (with respect to re-election) or supporting the construction (with respect to effects on land sale and construction business).

Examination of this case from a good governance context highlights issues arising as a result of the global context of industrialization and the power relations which then created in the Eastern Seaboard Development Area. Thus competition to attract industries received the main attention from the government without due regard to planning for environmental management infrastructure. Subsequent attempts to address the problems arising from this oversight were negotiated initially from the context of centralized decision-making without consultation or participation of local communities. Centralised decision-making and dependence on local community members with close links to the centre exacerbated conflicts related to the different interests anticipated from the proposed project. However, in the context of heavy industries with limited mobility, the local communities concerned had considerably greater bargaining power than the local communities near the Northern Region Industrial Estate where the bulk of industries are footloose. Communities opposed to the construction of these facilities took to protests to demonstrate their opposition to the projects. Consequently, a different approach had to be taken in later stages with greater opportunities provided for community participation.

Nonetheless, the Rayong political and social context is one in which connections with central government and political influence play a critical role in access to decision-making forums. Decision-making by local government tended towards opportunities for individual political or economic gain rather than reflecting the genuine concerns of the local community.

From a good governance context it is apparent that the lack of participation of the community in decision-making for this project resulted in a loss of trust and receipt of incomplete information among local community members.

Case 3.2: The Case of Hazardous Waste Dumping in Kanchanaburi Province

This case study considers the dumping of hazardous waste illegally imported into Thailand for disposal. In this instance, the case selected focused on the ultimate disposal of the chemical waste from the disastrous chemical fire at Khlong Toey Port in Bangkok which occurred in 1991. After the fire was put out, the area was cleaned of remaining and resulting hazardous chemicals. The ideal goal of such an operation was intended to be the safe

disposal of this waste by land-filling with the acceptance of communities in the vicinity of the land-fill site. These chemicals were taken to the Khao Laem area of Muang district, Kanchanaburi province for disposal in a land-fill site. These activities were carried out by state agencies with the monitoring of local interest groups, nature conservation organizations and the media.

The Actors in this case study comprised the local community, local government officials, local nature conservation activists, Non-Government Organisations (NGOs), and state entities including the Port Authority, the 9th Army Division, and the Pollution Control Department. In this instance, initial opposition to the disposal of this waste became later acceptance as the various organizations involved worked together to ensure that communities were well-informed, and that disposal occurred in accordance with agreed controls.

In this case, observation can be made as follows:

1. A critical element of the physical local context is that the landfill site is land in the control of the Royal Thai Army. Further, the land does not have any communities living within especially close proximity. However, the land is close to a natural water source which is used by local communities further downstream. Consequently, there were concerns about the impact of the disposal site on this water source;
2. Concern about the impacts on local communities without personal interest (commercial interest) which was a feature of the action of local organizations in Kanchanaburi province formed a strong basis for participation of all actors in attempts really to address the problems which arose from the decision to dispose of the chemical waste in the province. These aspects of the local organizations concerned were well accepted by all stakeholders in the process. The area in question had already passed through the process of successfully opposing the construction of the Nam Choan Dam and consequently local communities were already strong and experienced in their consideration of and response to environmental management issues;
3. Communities in the immediate vicinity of the landfill site had limited participation in the decision-making because of their fear of the power of the Army at the time;
4. The government of the time attempted to ensure the wishes of local communities were always taken into consideration in order to counteract any perceptions of the government of the time as a dictatorship. This meant there was not a clear plan of action to address problems;

5. The involvement of non-government groups, civil society and the media and their role as a watchdog throughout the process was a direct response to the wave of democratization being experienced in Thai society at the time as a whole.

In consideration of this case study it is worth noting that the local organizations and local community played a somewhat exceptional role in implementing checks and balances and in pursuing active participation in decision-making and oversight of the plan for disposal of chemical wastes in Kanchanaburi province. In so doing, it was clear that the main motivation for the involvement of these groups was disinterested concern for the local communities and not personal interest. Although the state displayed apparent concern to allow participation of local community groups, in fact considerable efforts had to be made by the local community groups before such participation was allowed and the state was not the initiator of this participation but merely reacted to repeated requests for such participation. In this context, the media played an important role as a watchdog in ensuring the state entities were sensitive of their responsibilities to the local community at all stages of the management process.

Nonetheless, the state had not implemented sufficient forward planning with respect to the damage to life and property which arose from the chemical fire at Khlung Toey and were unable to name the owners of the industrial waste which had been stored at the port. The management process undertaken was a reactive response to an emergency which presented itself. The state was and is unable to provide any principles or guarantees with respect to future incidents arising from storage or disposal of industrial waste. Consequently, from a good governance context, it can be seen that industrial management beyond the extent of the industrial facility continues to lack efficiency and effectiveness.

5.2) Conditions for Environmental Governance

An institutional analysis approach has been taken to examining good governance in industrial environmental management. Consideration of four case studies has highlighted a number of necessary conditions for good governance. Although in practice the research considered the operational level, i.e. the practical application of good governance principles on the ground, the effects of decisions taken at the collective choice level was seen to have a bearing on the success of implementation on the ground. In three out of four of these case studies, industrial environmental management has not achieved what should be its core objectives of maintaining and protecting a healthy environment for workers and local

communities. Examination of the reasons why industrial environmental management has not been successful has identified the following necessary conditions for good governance and problems relating to these conditions:

- **The existence of a system of checks and balances which are continually maintained by public participation in the process of implementation.** In the context of industrial development focusing on encouraging industrial investment without due consideration of the social or environmental costs, these checks and balances are generally lacking within the state system itself. The industrial authorities tend to ignore their responsibilities of monitoring environmental management systems of the industries, especially when foreign investment is encouraged. Such checks and balances may be implemented where local community structures and processes are strong (as was seen to some extent in the latter two cases). However, where communities are weak or economic dependencies are strong as a result of negative globalization, no such checks and balances exist. Problems of asymmetric power and information have aggravated the situation. It is observable that in every case, state entities did not show sufficient awareness of the importance of community participation even where this is required by the current 1997 Constitution.
- **The institution of appropriate incentives / drivers and deterrents.** Currently, the state is lacking any sense of importance in ensuring that industrial development does not cause harm to local communities or the natural environment. In practice, the focus is entirely on attracting investment to the regions and in presenting these regions as attractive locations for industrial production for export purposes. This is a major obstacle towards good governance in industrial environmental management. Furthermore, local communities in industrial areas where those industries are relatively footloose live with the knowledge that these industries could leave for other more favourable investment climates. The development of an economic dependency of local communities on these industries thus results in communities effectively sacrificing their health and quality of life for the sake of not upsetting these industries and spurring their movement away from the region. This contrasts markedly with the experience of local communities dependent on natural resources such as forest where the drivers and deterrents for sustainable management of these resources exists within the context of community use and where community measures to protect these resource may reap their own benefits.

- **Access to information and the development of a sufficient body of knowledge including strengthening local wisdom and participatory research process.** Within the Thai context, reputation and image have an important role to play in encouraging improved industrial environmental management. Thus in the case of the Nong Ped community, where the facility responsible for air pollution was Thai-owned, fear of loss of reputation eventually created the impetus for improved environmental management. Similarly, there is apparent recognition of the need for a more sincere approach to addressing these pollution problems among state officials. However, where non-Thai companies are concerned, the response locally appears to be to present the industrial pollution problems as minor in order not to create problems for these companies which might encourage them to relocate their facilities to other areas or countries. Asymmetries in terms of access to information and power have been shown to create serious obstacles to good governance in industrial environmental management. Lack of knowledge and access to information among communities or the distribution of partial or inaccurate information can result in loss of trust which then threatens the entire decision-making and management process.
- **The prevention of corruption and the reduction of official discretionary power, which can be easily abused, such that conflicts of interest among representatives of the state and the interests of communities can be reduced.** The existing legal structure in Thailand frequently creates conflicts of interest in government departments responsible on the one hand for encouraging industrial investment and at the same time for enforcing environmental and social legislation. As long as government policy gives the priority to encouraging investment and job creation this severely limits the bargaining power of local communities and workers within official forums or processes. Furthermore, laws which provide discretionary powers to government officials create opportunities for corruption and influence-seeking which run counter to the principles of good governance.
- **Reduction of transaction costs among different stakeholders at all levels of the process and elimination of differences among the transaction costs depending on the stakeholders** (e.g. with respect to asymmetries of power, and asymmetries of access to decision-making forums etc.). In some cases, transaction costs and inefficiencies in the system exist even within the state sector, as is the case, for example, for the role of the Pollution Control Department. The PCD which has an exclusively environmental management mandate has a monitoring role but very

limited enforcement capability and is thus unable to act with any efficiency but must instead depend on the effectiveness of institutions which also serve a mandate to encourage investment.

- **Adoption of ethics and moral principles by all actors at all levels of the process.**
In the past ethical and moral action was given a high importance in Thai society. However, the effects of materialism and the development of a consumer society in the context of globalization have diluted the influence of ethical and moral action in the present day. In terms of good governance, without a sound moral or ethical basis for action at all levels and among all stakeholders, and perhaps most notably at the level of the state, then there will always be obstacles to effective implementation of good governance principles. Where there is clear recognition of an ethical basis for action, as was the case for Kanchanaburi, this can create the forum for effective decision-making, participation of local communities, and assist in the resolution of problems which might arise from or through the industrial environmental management process.

6. Conclusions

This paper examines the specific context of good governance in industrial environmental management in Thailand under the context of globalization. The focus is on environmental governance at the national level. By applying institutional analysis in analyzing the governance problems at the operational and collective choice levels of the selected case studies in the area of industrial waste and pollution management in Thailand, the study has identified necessary conditions for environmental governance. The important conditions include, for example, a system of checks and balances with public participation, appropriate incentives and deterrents, and access to information and the development of a sufficient body of knowledge including strengthening local wisdom and participatory research processes. However, the paper also illustrates the current trends of industrial development based on free capital movements and globalization of production which result in export of polluting industries, export of polluting technologies, and trade in hazardous substances and hazardous waste. This situation demonstrates the lack of environmental governance at the global level; and this lack of international environmental governance exacerbates problems at the local level. Under such a circumstance, the environmental governance at the local or national level is even much harder to be attained.

In the concluding remarks, when considering the state of industrial development alongside the recognition of core concepts of good governance, we can see that in the context of developing countries pursuing mainstream development paths under globalization there are inherent contradictions or dilemmas. Dilemmas which hinder sustainability include:

- **Public Participation in Decision-Making vs. Economic Dependency**

Public participation is recognised to be a critical component of truly sustainable development, and is an essential element of any global system containing checks and balances for community protection. However, this must be understood in a context whereby communities do not have economic freedom to make decisions, i.e. where investment capital comprises large sums of international capital which is free to move to wherever the greatest short-term return may be found (“footloose capital”). This international capital has a tendency to move towards those places that have low environmental standards, so-called “pollution havens”. In this context in which communities become economically dependent on industries, the negotiating power of communities is considerable lessened at the local level and, for developing countries, at the international level.

- **Effective Environmental Management Goals vs. Vested Interests**

Effective environmental management is not implemented where it conflicts with business interests. This dilemma or conflict occurs as a simple conflict between differing groups, or as internal divisions within communities or organisations. The emphasis of existing economic systems on short-term gains works against even the most well-intentioned business leader who may wish to change production technology or improve the efficiency of pollution control technology but finds that the long-term investment gains are disregarded in the light of short-term costs. Similarly, governments are constrained in their attempts to manage their economies and environments for the long-term by the need to demonstrate continuous economic growth and a continued ability to attract Foreign Direct Investment (FDI). Competition among developing countries for FDI is so intense that the bulk of government attention is focused on these economic indicators to the detriment of other elements of national management, vis-à-vis environmental protection and social welfare.

Some economic instruments and forms of environmental standards are not as effective environmental management tools as they are supposed to be because of vested interests. As earlier discussed, without an effective monitoring system and transparency, international standards for environmental management such as ISO serve merely as commercial trademarks and sometime even create a moral hazard.

Additionally, the creation of an effective structure for environmental management may also conflict with political interests which cannot be separated from business interests. National and international business interests provide financial support for political parties which bend to their will. There is negligible political support for any propositions for effective and fair environmental management where these will conflict with business interests.

- **Inspection and Public Scrutiny vs. Lack of Capacity and Readiness for Change**

Within the context of globalization and increasingly complex structures of production and business administration, it becomes increasingly difficult for the public to assess accurately the risk presented to them when a new product (e.g. a new chemical) or production process is presented to them. Effective public scrutiny depends on structures/tools such as effective legislation, a balanced economy, efficient and free public information services, open political structures and strong communities. Unfortunately, in developing countries at least, many of these structures are weak or non-existent. Consequently, there is no real public scrutiny and the development of structures which could support greater public scrutiny is at a rate not rapid enough to cope with the extremely rapid change occurring in the global economy, global business structures and in technology.

- **Environmental Conservation vs. Economic Growth**

At the heart of all dilemmas relating to sustainable development is the belief shared by some that environmental conservation can only happen within the context of economic growth. Such a belief depends on economic theory which describes how market-based tools can affect the prices of goods such that consumers (and producers) pay the full cost of production including environmental and social externalities. The question remains however, whether or not businesses which currently pass the social and environmental costs on to societies throughout the world, and which have made great efforts to ensure their financial capital remains free to move to countries where there is no effective full cost pricing of production or

goods will ever be willing to share their burden of the environmental and social costs of economic growth.

Conversely there is another school of thought which proposes that the environmental and social problems we are experiencing derive directly from the drive for economic growth and free trade at all costs which we are currently experiencing and which we have been following for the last five decades. This school of thought maintains that without limits to growth there can be no sustainable development.

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