

COMMUNITIES AS INFORMAL REGULATORS: LOCAL PROTESTS AGAINST INDUSTRIAL POLLUTION IN VIET NAM

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ABSTRACT

A number of studies in developing countries show that in the absence of strict environmental regulation and strong enforcement, communities have emerged as a new form of informal regulation. In Viet Nam, O'Rourke and others have pointed out that local communities in some cases are successful in forcing industrial polluters to reduce pollution or to change production processes into more environmentally sound directions. However, people living in the neighborhood of industrial firms are often dependent on firms in terms of economic and social benefits. This paper analyses if and to what extent economic and social dependencies of communities from industrial firms in their vicinity can hamper the communities' actions against industrial pollution.

Key words: community, informal regulator, local protest, industrial pollution, industrial zone.

1. INTRODUCTION

In many western countries, from the late 1960s onward, environmental movements have exerted pressure on governments to improve environmental quality and tried to redirect production and consumption patterns towards more ecologically sound practices. NGOs are seen as active non-state actors (see Rootes, 1999). In developing countries, protests against environmental problems by NGOs started later. Local NGOs in developing countries are often initiated and supported by international NGOs. Sonnenfeld (1999), for instance, points out that in newly industrializing countries such as Indonesia, Malaysia, Thailand, Greenpeace has made a lot of efforts to help local and national NGOs in their protests against chlorine and dioxin of pulp industry since the early 1990s. These environmental movements have had a profound influence on the transformation of pulp and paper industry towards more environmentally sound manufacturing. In Ecuador in the 1980s, local and international environmental groups began to protest against the impacts of oil and gas development in remote areas of the Ecuadorian Amazon (Garcia et al, 1999). In

some developing countries, NGOs are very active in environmental training and dissemination of environmental issues. In Thailand, for example, environmental consciousness is growing as a result of efforts by NGOs education and awareness programs (Parasnis, 1999).

Beside NGOs, which are well-organized groups of people, local communities who suffer from environmental impacts increasingly engage in environmental activities, asking for compensation, demanding for better environmental quality, protesting against the deterioration of their livelihood, etc. Local communities struggle to protect their environmental quality by blocking the siting of waste dumps, incinerators or polluting factories. But they more often protest against existing plants that have a rather poor environmental performance. Abundant evidence from countries all over the world have shown that local communities play a significant role in influencing polluters to change their behavior and to improve their environmental performance. Sonnenfeld (1996) showed that under the pressure of communities, pulp and paper industries in Australia, Indonesia and Thailand have improved their environmental performance by adopting cleaner production technologies. A number of studies have explained how 'informal regulation' (community pressures on industrial polluters and the state) can supplement formal regulatory strategies in developing and developed countries. These studies provide interesting evidence on the significant potential of public participation and public information for motivating pollution reduction (see O'Rourke, 1999 for review). According to the recent publication of the World Bank (2000), the success of the rating and public disclosure program in Indonesia and the Philippines are not surprising, because industrial polluters are very sensitive to public criticism on their poor environmental practices¹. Other studies of the World Bank in China, India, Thailand, Bangladesh, Indonesia documented the active role of communities through complaints on industrial pollution and environmental impacts of industrial activities (cf. Dasgupta and Wheeler, 1996; Wheeler, 1997). The World Bank reveals that in developing countries where monitoring is costly and agencies' budgets are lean, regulators can not fully informed about all polluters and so they often focus resources on responding to community complaints. The World Bank then concludes that in Asia, Latin America and North America, the neighboring communities can strongly influence factories' environmental performance. Where formal regulators are present, communities use the political process to influence the strictness of enforcement. Where regulators are absent or ineffective, NGOs and community groups pursue informal regulation by pressuring polluters to conform to social norms.

In Viet Nam, an almost similar picture of that in other developing countries can be found. O'Rourke and others (Nghiem et al, 1995; Sikor and O'Rourke, 1996; Le and Boot, 1998 O'Rourke, 1999) have pointed out that local communities in some cases are successful in forcing industrial polluters to take their environmental responsibility and to change into 'greener' production. These studies reveal that under the existing Vietnamese conditions (lack of staff, budget deficit, monitoring equipment is limited, etc.), environmental authorities often only take action to control, regulate and enforce industrial polluters after receiving frequent and strong complaints from local people on pollution and environmental deterioration. O'Rourke calls such informal regulation 'community-driven regulation' (CDR). He then concluded that although CDR has a number of weakness, community participation can support multiple mechanisms for environmental protection, by strengthening existing command-and-control programs, motivating the state to enter into

new roles, and promoting new forms of pressures through ‘reputational incentives’. However, in these case studies, people living in the neighborhood of industrial production units are frequently to some extent economically and socially dependent on the industrial firms. The question is if and to what extent the economic and social benefits of industrial activities for communities surrounding them can hamper the communities’ actions against pollution? This paper is an attempt to answer that question by analyzing evidence from industrial zones in Vietnam.

2. COMMUNITY’S REACTION TO INDUSTRIAL POLLUTION: THE CASE OF INDUSTRIAL ZONES IN VIET NAM.

From 1990 onwards a number of industrial zones (IZs) have been established in Vietnam, especially in the Southern Key Economic Region (SKER).² At the end of 1998, there existed 60 IZs throughout the country, among which 32 IZs are in the SKER (VIZA, 1998). The distribution of IZs in Viet Nam is presented in Figure 1. Although being located relatively far from existing populated residential areas, and having been in operation only recently, these IZs have been reported to have negative impacts on human health and environmental quality. Communities - and their members - in the vicinity of IZs have different interests, opinions and reactions to industrial pollution caused by these IZs. Some community members make their living working in the factories - or indirectly profit from the existence of the factories - that are the source of local pollution. Others are affected by pollution, losing crops or aquatic resources and experiencing diseases. A third group earns their living by working for polluting factories, and suffers from pollution at the same time. Finally, some make their living of pollution by recycling waste. In order to understand how specific environmental problems of IZs nowadays are perceived, how local communities define their situation, how they react to environmental impacts that they have to face, how local authorities and environmental agencies deal with these problems, why different people have different reaction, and how one can understand the result of communities’ actions, case studies have been carried out on three IZs in the SKER: Viet Huong IZ (Binh Duong Province), Le Minh Xuan IZ (Ho Chi Minh City), and Bien Hoa I IZ (Dong Nai Province). These IZs are chosen not at random, but on their record as bad practice IZs.³ In depth, semi-structured interviews with local authorities, local mass media and local communities (members and representatives) were carried out. Individual members and groups from local communities were selected first following the suggestion of local authorities. Subsequently the snowball effect was followed in which the first interviewee introduced the second, and so on. Besides, a random choice of a limited number of households at three sides of the IZ was made at each site. Information from different sources was cross-checked with each other and with staffs from local and provincial environmental agencies (Department of Science, Technology and Environment [DOSTE]). Interviews and analyses in this study were carried out on qualitative basis. In the following sections each IZ will be analyzed on the basis of these sources.

2.1. Community as Driving Force for Environmental Regulation: The Case of Viet Huong IZ (Binh Duong Province)

Viet Huong IZ is located in Binh Giao Hamlet, Thuan Giao Commune, Thuan An District, Binh Duong Province.⁴ Being established in 1996 on an area of 45 ha, it was developed by a private company owned by a Chinese migrant. In front of this IZ is the highway, on the

right is a porcelain making unit, behind one finds temporary houses made by local people for renting to workers of the IZ, and only on the left one can find the community.⁵ The community in Hung Loc Hamlet was chosen as a case study because it is affected by the wastewater downstream from the outlet of the IZ.

This IZ houses 21 Taiwanese small and medium sized enterprises (SMEs). Some of these enterprises are pollution intensive, such as paint production, textile and dyeing, and plastic production. It is widely acknowledged that the most striking environmental problem from Viet Huong IZ is wastewater. Viet Huong IZ has been operated without a common wastewater treatment plant up till today. All kind of wastewater from enterprises is discharged directly to the sewage and then flow to Chom Sao Spring. The spring runs through Hung Loc Hamlet before discharging into Vam Bun River. It is said that two textile and dyeing enterprises in this IZ are the most polluting ones. Although the two enterprises have their own treatment plant, they do not operate the system unless they are forced by Binh Duong DOSTE. The latter one only carries out inspection and enforcement after receiving complaints from the communities.

According to the Head of Hung Loc Hamlet, there are about 3,000 people living in Hung Loc Hamlet, among which approximately 150-200 people earn their living by working in Viet Huong IZ. The others are workers at porcelain production units, run a small shop, plant fruit trees or raise domestic animals. All the interviewees agree that the benefits they get from Viet Huong IZ, such as employment, is not very large. Meanwhile the damage they have to suffer is tremendous. First, their gardens and orchards are damaged by spring water, which is polluted by wastewater from Viet Huong IZ. Second, their domestic animals die when they drink spring water. Third, fish can not survive in the polluted spring, resulting in loss of fish as a source of income and food for the community. Fourth, the spring is not only colored black, blue, or red from time to time (depending on the discharge of textile and dyeing enterprises), but also smells badly. The community believes that the wastewater contains toxic substances, because some people have skin disease after using the spring water for cleaning. But it remains unclear what exactly these substances are. Fifth, previously the community could use ground water for drinking without boiling, but nowadays the ground water quality decreased due to high turbidity and nasty odor.

Faced with these problems the community suggested the Head to report to the Local People's Council in the latter's permanent meeting⁶ (in 1998). Subsequently, the People's Council 'complained' with Binh Duong Radio and T.V station. Reporters from Binh Duong Radio and T.V station visited the site, took pictures and made a video on the pollution. These pictures and video were sent to Binh Duong DOSTE, followed by DOSTE staff taking water samples. After these initiatives and the reactions of the enterprises the community recognized small improvements in water quality in terms of smell, but the color and the 'toxicity' of the wastewater remained unchanged. Again the community reported to the People's Council to ask for more improvement. The official reply was that the investor promised to treat the wastewater, but until the time of research (December 1999), the situation remained unchanged. The community reacted furious and intended to take strong actions against the IZ, claiming that they would 'destroy' Viet Huong IZ if no improvements in local environmental quality were made. There exists broad consensus in the community that it is not so much compensation what they want but rather proper treatment of the wastewater and active government intervention to prevent such problems,

also within other IZs in the future. The community members fear the pollution that they and other communities will have to suffer from existing and future IZs.

In order to crosscheck and complement this information, interviews with the People's Council and staffs from Binh Duong DOSTE and Binh Duong Radio-T.V station were made. It was clear that after receiving complaints from the People's Council again, Binh Duong Radio-T.V station broadcasted the video on pollution caused by Viet Huong IZ. Only after that, 'real action' took place. Twenty-one enterprises in Viet Huong IZ sent an official letter to the Ministry of Science, Technology and Environment (MOSTE), Binh Duong DOSTE, Binh Duong People's Committee, Binh Duong Radio-T.V Station, and Binh Duong Industrial Zone Management Board⁷ suggesting that the investor of Viet Huong IZ must construct a common wastewater treatment plant as he promised when he called for investment into this IZ. An official meeting was held on 29 September 1999, with representatives from Binh Duong DOSTE, the investor, and representatives of the 21 enterprises. In this meeting, DOSTE demanded the investor to submit the design of the wastewater treatment plant on 30 December 1999, and to start the construction in June 2000. Finally, the common wastewater treatment facility is now (autumn 2000) being built in Viet Huong IZ.

Four other interviews with the households in Binh Giao Hamlet, Thuan Giao Commune, next to the outlet of wastewater from Viet Huong IZ were made. These people are working on their own gardens. They said that the nasty odor of wastewater is unacceptable. According to them the ground water damaged their cassava garden, and pepper garden since the water was polluted by Viet Huong wastewater. They have to buy water for their daily use and often mention this problem in the permanent meeting within the hamlet. These households did not believe that the local authority would take their complaints seriously, as the benefits these households bring to the community are small compared to the economic benefit that the IZ has brought for Binh Duong Province.

A random choice interview was made with Ms. Hong (housewife) who has just immigrated to Binh Giao Hamlet by the time the IZ was established, and whose family earns their living by house renting to workers of Viet Huong IZ. She also agrees that Viet Huong wastewater has caused a lot of trouble for the local community. But she did not complain to the local authority, as, according to her, it would not work. The fear for loosing business related to Viet Huong IZ is an alternative or at least complementary explanation.

2.2. Economic Profit and Environmental Damage: the Dilemma of the Community around Le Minh Xuan IZ (Ho Chi Minh City)

Le Minh Xuan IZ is located in the Hamlet 2 of Tan Nhat Commune, Binh Chanh District, a relatively remote area of Ho Chi Minh City. This IZ was established in 1997 on an area of 100 ha. It was developed by Binh Chanh Building Investment Company (a state-owned company). This area is affected by alumiferous and brackish water so that it can not be used for agricultural purpose. The People's Committee of Binh Chanh District decided to use it for industrial development. Le Minh Xuan IZ is established to receive polluting industries and firms relocated from the inner city. At the time of research, Le Minh Xuan IZ had about 62 enterprises in operation. All of them are small-scale enterprises of different sectors: electroplating, textile, dyeing, rubber production, food processing, etc. The existing dyeing enterprises have just relocated from Tan Binh District (one of the most

populated district of Ho Chi Minh City). In order to know if such industrial development helps to increase the living standard of people in remote areas or only brings problem to local people, how people define their problem, and how they react towards relocation, eight individual interviews were made with the community members around this IZ.

People in Hamlet 1 of Tan Nhat Commune revealed that previously they earned their living by agriculture. In the mid 1990s the local authority suggested them to sell part of their land for industrial development. Most of the community members (99%) agreed to sell the land, because the productivity of rice on this soil was very low. Especially the old people continued to work on the rice field, while the young people started to work in the enterprises of Le Minh Xuan IZ. In addition, together with the development of the IZ, the transport system and electricity network were developed. Although the electricity network was not connected to the households, households can be served by a subordinate system to the main system of the IZ. Thanks to these developments (increase in income, better transport system, connecting to electricity grid) the number of children going to school increased, and the average knowledge standard among the community also increased. However, there were also negative side effects. According to the community members, they are suffering from wastewater. Previously the community used water from the Canal No. 8 for drinking, daily use, and agriculture. But nowadays the canal has become sewage, since it receives untreated wastewater from Le Minh Xuan IZ. The water in the canal has become dark with bad odor. Fish can not live in such a polluted canal. During the rainy season nearby rice field and fishponds are flooded and damaged by wastewater from the canal. Individually, affected people talked with the investor who has his representative office within Le Minh Xuan IZ. Some sent complaints to the investor asking for environmental improvement (among them are workers or who have relatives working in the IZ). As a result, the investor tried to solve the problem via effect-oriented measures - setting aeration systems in the canal to reduce odor - and via compensation by providing water supply at low price for some households nearby the canal. Moreover, after receiving repeated complaints from the community members, the representative of the investor also promised to construct a common wastewater treatment plant in the near future. In August 1999 the investor of Le Minh Xuan IZ started the invitation to bid for the construction of common wastewater treatment plant.⁸

The communities in Hamlet 2 of Tan Nhat Commune and in Hamlet 5 of Le Minh Xuan Commune both benefit from the transport system accompanying the development of IZ. But their experience in pollution is different. Community members in Hamlet 2 sometimes see a huge smoke from the IZ passing their house, but that happens rather infrequent. People in this hamlet do not send complaints nor discuss pollution affairs with the representative of the investor, because they do not take the problem seriously. The community in Hamlet 5 of Le Minh Xuan Commune is affected by wastewater from Le Minh Xuan IZ, because the canal B, which has served as an important water source for their daily use, is polluted since it mixes with water from canal No. 8. After receiving wastewater from the IZ, canal no. 8 discharges to canal B. As shallow ground water in this area is affected by aluminumiferous water, it can not be used, and the community has to buy water. Community members claimed that water in the canal B has become dark with high turbidity and large amounts of fish died in this canal. This has not been observed before the IZ went into operation. However, community members in this hamlet show no interest in complaining, asking for compensation or demanding for better water quality.

2.3. Challenges for State Owned Enterprises under the Pressure of the Communities in Bien Hoa I IZ (Dong Nai Province)

Bien Hoa I IZ is located in An Binh Ward, Bien Hoa City, Dong Nai Province. Bien Hoa I IZ is different from other IZs in many aspects such as development history, technological development, management organization, environmental problems, etc. Being established in 1963 on an area of 511 ha with 52 factories, Bien Hoa IZ (former name of existing Bien Hoa I IZ) was the first IZ in Viet Nam. At that time, the infrastructure was constructed with high quality. Factories in Bien Hoa IZ were private owned and all equipped with modern production technology imported from different capitalist countries (the USA, Germany, France, Japan, etc.). This IZ has contributed significantly to the economic development of South Viet Nam from 1960s until the late 1980s. However, since 1975 all factories became state-owned. Due to a lack of investment to upgrade the technology and a lack of staff for adequate management, the equipment soon became out-of-date and environmental issues have increasingly become a major problem in this IZ. Bien Hoa I IZ differs from the others in terms of land use pattern. Since the first investments people have settled down within this zone so that factories are intermingled with residential and even agricultural areas. Nowadays, except for the residential and agriculture area, the industrial zone covers about 382 ha with approximately 80 factories of all types (food processing, chemicals, construction materials, metallurgical and metal processing, electronic, mechanical, animal foodstuff, paper-match-wood, consumer goods, and other services). Since 1996 the name Bien Hoa I IZ has been given to this IZ to distinguish it from Bien Hoa II IZ. The two Bien Hoa IZs are located at the opposite sides of Hanoi National Highway. Bien Hoa I represents the out-of-date technology and poor environmental performance, while Bien Hoa II stands for modern technology and best practices (SONADEZI, 1997).

In Bien Hoa I zone, interviews were carried out with two groups of people in Quarter 6, Quarter 7, and three individual interviews with households in Quarter 5, Quarter 7, Quarter 9 of An Binh Ward, one individual interview with people who live next to Bien Hoa Sugar Cane Factory, one individual interview with people in Thong Nhat Ward. The result of the interviews is very interesting. Mr. Trung in Quarter 5 and Ms Lien in Quarter 9, for instance, presented different opinions on the same issue. Mr. Trung works for VICASA Factory; Ms. Lien's husband and her three sons are employed by Dong Nai Paper Company. Mr Trung is indifferent to environmental problem of Bien Hoa I IZ. By contrast, Ms Lien is well aware and receptive of the pollution issues in this area. As her family lives next to the outlet of Ajinomoto Factory, she witnesses everyday the dark and nasty odor of wastewater coming from the joint-venture company that produces glutamate mono-sodium and discharged into Dong Nai River. As she reports, chickens and ducks die when drinking river water in this area. The community in the neighborhood has to endure the 'unbearable smell' from day to day. Besides, she claims that people in this quarter also suffer from air pollution, but they do not know exactly the source of the air pollutants (it might come from Ajinomoto Factory, or Dong Nai Paper Company, or Bien Hoa Chemical Factory-VICACO). According to her, most of the community members have respiratory diseases due to air pollution. However, when being asked about her and other people's reaction against pollution, she said that although all people feel uncomfortable, no strong and coordinated action has taken place. They just complain with each other, being so busy to earn for their living and not knowing exactly what to do. They did not report pollution to the local authority as in the case of Viet Huong IZ, nor discuss pollution issues with the

investor as in the case of Le Minh Xuan IZ. Because the community lives on the land of the IZ, they think that they have no right to complain and that the local authority favors the industries. Above all is the dominant fear to lose job and to be relocated out of the IZ.

The two group interviews and individual interview with the Head of Quarter 7 present an opposite picture to the above individual interviews. Most people in Quarter 6 are employed by factories in Bien Hoa I IZ. Some of them are retail dealers; others work on vegetable gardens. They came to settle down at the time when the IZ was established. But according to the new plan for Bien Hoa I IZ, they have to move out and the land will be developed for new factories or reserved for expansion of existing factories. The present direct benefits they receive from the IZ are employment and electricity use⁹. In the meantime, they have to suffer a lot from industrial pollution, specifically air and water pollution. The community lives near Dong Nai Paper Company and Bien Hoa Chemical Factory (VICACO). The interviewees said they inhale particulate from the smoke of VICACO, and 'chemicals' (it might be ammonia) from the Paper Company almost every hour. Sometimes they feel hard to breathe or tightness across the chest. With respect to wastewater, the community complains most on wastewater of the Paper Company. While some other factories discharge their wastewater to the sewage system, the Paper Company discharges its wastewater directly to Dong Nai River, making it easy to actually see the link between cause and effect. The dark brown wastewater with high suspended solids from the Paper Company has caused a lot of fish kill, and it is claimed that children get skin disease when they swim in the viscous stream of the receiving river. However, some people also get benefits from such polluted waste stream. These people earn their living by collecting waste fibers in the waste stream. The community members do not have any access to neither DOSTE nor the investor of the IZ. They do not know any kind of local environmental agency, and living on the land of the IZ make the cautious not to discuss pollution issues directly with the investor.

Instead, in this area people are organized in and have close relations with social organizations through which they express their preferences and complains. Faced with pollution problems community members have complained in various ways. In the monthly permanent meetings people complain to the Head of the Quarter, and to the representatives of the Women Association, the Veteran Association, the Retired Civil Servant Group, etc. These representatives transfer the complaints to the local People's Council, who discusses this with the Provincial People's Committee. A result of these complaints has been the work of an inspection team in checking the local situation. However, the community disagrees with the procedure the team has taken. According to the community, the factories that are subject to inspection have been informed in advance. It is impossible to have an objective and representative conclusion on the environmental performance of the factories, if these knew the time of inspection. The majority of the people living in this quarter showed their anger regarding the pollution and the absence of any serious action to combat that. The fear for losing their job or place to live as a consequence of complaining strongly against industrial polluters is felt. The fact that these people have to move out of the area anyhow (albeit no exact time is known), makes this threat bearable. And most feel a need to struggle for better environmental quality as long as they still live there. The Head of Quarter 6 emphasized that he and his community will again send complaints but now directly to DOSTE, and ask them to carry out inspections without informing factories in advance.

For another community in Quarter 7¹⁰, employment (approximately 90% of workers work for Dong Nai Paper Company), electricity use, water use, retail trade, and collecting waste fiber are among the benefits they get from the IZ. On the other hand, they are victims of air pollutants from Dong Nai Paper Company. All interviewees reported health effect, such as difficulties to breath, tightness across the chest, dizziness, headache, irritated eyes, lung disease, asthma, due to the emission from the Paper Company.¹¹ They also reported that the smoke damaged the roofs of their houses and that their clothes were covered with black spots when these were drying in the open air. The community members mentioned also environmental issues caused by other factories in Bien Hoa I IZ, such as wastewater from Bien Hoa Sugar Cane Factory, and air pollution from the brick kiln, Bien Hoa Chemical Factory (VICACO), and VICASA Steel Factory. But they are mainly concerned on the Paper Company. Similar to the community in quarter 6, this community also reported to the local authority, to representatives of social organizations, and so on. Moreover, in 1991 they sent an official letter with 175 signatures to the Prime Minister to call for help. Copies of this letter were sent to the District People's Committee and the Provincial People's Committee. According to the community in quarter 7, in 1992 and 1996 a team of UNICEF came to carry out a survey on environmental quality of Bien Hoa I IZ. The team concluded that the Bien Hoa I IZ has been polluted heavily. One of the consequences was that the Provincial People 's Committee planed to relocate people out of this zone. But until the time of research (March 2000) nothing happened. With respect to Dong Nai Paper Company, according to both the head of the quarter and a former worker in the chemical plant of the paper mill, it was subjected to many inspections, regardless of the fact that it is state-owned company which belong to Viet Nam Paper General Company. The company made large efforts to deal with its environmental problem, such as increase the height of the smokestack, constructing wastewater treatment plant (with SIDA aid), and investing in the chemical recovery system. However, these treatment measures and systems did not work effectively. The sedimentation tank, meant to settle down fibers in wastewater, does not collect most of the fibers. As a result fibers find their way to the outlet. The tank has been cracked and if it is broken a huge amount of wastewater will flood the neighborhood. The chemical recovery system, established by a Chinese company, stopped working already after one year. The community continued to complain to the head of the quarter and the manager of one workshop of the Paper Company during the permanent meetings. The latter two regularly report these complaints to the Director of the Company. Although the Director did try to solve the problem, no effective solution has been achieved up till now.

While some people fail to achieve results in struggling for better environmental quality, others succeed. The interviews with people in Thong Nhat Ward (Bien Hoa City), for instance, revealed that they used to suffer from the smoke of Dong Nai Paper Company. After sending complaints to the Provincial People's Committee their problems were solved. It is not surprising that the community in Thong Nhat Ward succeeds in reaching improvements of their environmental situation. Because they live far from the Paper Company, their problems are not difficult to solve. The Paper Company has 'collected' the waste streams to the air and discharged it into the sewage instead of discharging it into the air. In another case, the houses and fishponds next to Bien Hoa Sugar Cane Factory have been flooded by wastewater from the factory, causing sever fish dying. Community members discussed this directly with the manager of the factory. As a result, they were compensated for the damage to their houses and for fish kill.

Although there is no clear evidence that the 1991 letter of the community in Quarter 7 and the complaints of communities within Bien Hoa I IZ were the direct cause, some actions have been taken after both. In 1992, Environmental Protection Center (EPC) was asked to carry out a survey on environmental quality related to industrial pollution in Bien Hoa I IZ. The result of the survey showed that Bien Hoa I IZ was heavily polluted by wastewater (major sources are Dong Nai Paper Company, Bien Hoa Sugar Cane Factory, Ajinomoto Factory, etc), air pollutants (major sources are Dong Nai Paper Company, Bien Hoa Chemical Factory, Dong Nai Asbestos Cement Factory, VICASA, Dong Nai Match Factory, NET Detergent Factory), and solid wastes (major sources are VICASA, Sadakim, Bien Hoa Chemical Factory, Glazed Tiles Factory) (EPC, 1992). It is not surprising that Dong Nai Paper Company, Bien Hoa Chemical Factory, Bien Hoa Sugar Cane Factory, and Ajinomoto are subject to many complaints. EPC proposed to construct a common wastewater treatment plant for Bien Hoa I IZ as a measure to reduce industrial water pollution. However, even in the year 2000 a common wastewater treatment plant in Bien Hoa I IZ is still far away. In the meantime, many factories within the IZ have made efforts to improve their environmental performance since 1992. For example Dong Nai Paper Company, Bien Hoa Sugar Cane Factory, Dong Hiep Pulp Mill, and Dong Nai Battery Factory have constructed their own wastewater treatment plants and Dong Nai Asbestos Cement Factory has its own treatment for air pollutant.¹² In general, although there have been many efforts at both sides (government and industrial polluters), the main focus remains on end-of-pipe technologies that add on cost and provide no incentive for further improvement. Also the environmental results are still limited.

Among these companies, Dong Nai Paper Company can be used to illustrate the continuous efforts to improve environmental performance (albeit with limited result). Dong Nai Paper Company has applied end-of-pipe technologies such as treatment systems for air pollutants and wastewater, but these systems do not function well. Later on the company has invested in clean technologies such as recovery systems for white water from the paper section, the chemical recovery system for NaOH, and the partly substitution of chlorine by H₂O₂. Dong Nai Paper Company and Concrete Enterprise (within Bien Hoa IZ) have also tried to experiment with 'black liquor' exchange, but this exchange activity was not successful because the amount of black liquor produced is much more than the amount of black liquor input needed for concrete production. Recently, the company has participated in the cleaner production program organized by Dong Nai DOSTE with the help of UNIDO. More and more, the common opinion is that the environmental problems in Bien Hoa I IZ can not be solved by factories separately, and that an end-of-pipe approach has its limitations: it is often not feasible, it is ineffective and it is costly. In April 15, 1996 the Prime Minister issued the Directive No. 217/TTg on the reconstruction, management, and development of Bien Hoa I IZ. More recently the Prime Minister instructed the Viet Nam Industrial Zone Authority to study the feasible options to improve environmental quality in Bien Hoa I IZ. Until that is found and implemented the communities in Bien Hoa I IZ have to live with the pollution, unless they can resettle elsewhere.

3. LESSONS FROM THE REACTIONS OF THE COMMUNITY

Even though these case studies do not provide all information on the complexity of local community protest, the results do provide some insights in local community reactions

under different conditions of economic and social dependency. Four lessons can be drawn from the case studies.

3.1 Reactions of Local Communities

It becomes clear that in all the cases community members do not know the local/provincial environmental authority DOSTE. It might be because they are low educated and living in remote areas (except for the community in Bien Hoa I IZ) that they do not have any relation with other actors in the society who can help them to gain access to the environmental authority. This at least slows down the effect of complaining, as it takes time to see the result of the complaint because the complaints have to pass by many levels.¹³ However, the case studies do show interesting evidence that even though people are sometimes low educated, have no access to environmental authority and are economically and socially dependent on the industrial activities of IZs, when being affected by industrial pollution, people nevertheless tend to react strongly on environmental pollution and ask for better environmental quality. The ways people react vary from community to community. Community members can either make verbal or written complaints directly to the investor of IZ (the case of Le Minh Xuan IZ). In some cases, when talking directly to investor is impossible (the case of Viet Huong IZ), community members sometimes rely on the support from the mass media. The latter plays a vital role in pushing the environmental authority to carry out monitoring and enforcement on industrial polluters. This confirms the findings of O'Rourke (1999) that in Viet Nam DOSTEs are sensitive to media criticism on their failure to enforce pollution laws. In other cases, community members exert their pressure through their social organizations (Women Association, Retired Civil Servant Group, Veteran Association, etc.; the case of Bien Hoa I IZ). While on paper all investors are required to build common treatment facility for their own IZ and individual firms have to install pre-treatment facilities, in practice most of them try to avoid this for various reasons. And also for many reasons, enforcement systems of DOSTEs do not work well enough to push industrial polluters for compliance with environmental regulations. Evidence from Viet Huong IZ and Le Minh Xuan IZ show that in the absence of strict regulation and strong enforcement, investors to IZs try to avoid environmental investments into common treatment facilities as it is required in EIA reports.¹⁴ However, under enduring pressure of the communities (with or without the support of the mass media and the social organizations), environmental regulations are slowly moving from the written word to effective implementation.

3.2 The Influence of Local Community Pressure on Foreign Investor

It was said, "Binh Duong Province gives high priority to industrial growth and economic development. While on paper, environmental concerns must be incorporated into the provincial development plan, in practice environmental protection is only on the periphery of the provincial program. The province tries to attract as much foreign investment as possible because foreign direct investment is seen as the driving force for the provincial development. As a result the failure to enforce environmental regulation for powerful foreign firms should not surprise us"¹⁵. The case of Viet Huong IZ shows this picture. In the SKER, Viet Huong IZ is the only IZ developed by a private company (the others are mostly developed by state companies or joint-venture companies). A Chinese migrant owns this private company and investment into the development of the IZ is in fact a kind of foreign investment from Taiwan. As mentioned earlier, this IZ houses Taiwanese SMEs.

Meanwhile on paper all investors to IZs have to submit EIA report as one of the requirements for establishing an IZ, in practice this IZ was established without submitting EIA report. No factory in this IZ operates its treatment facility (albeit some have installed one) and there is no common treatment system for wastewater. As a result, the communities in the vicinity have to suffer from pollution. The provincial environmental agency failed to enforce environmental regulations towards these foreign companies and the investor. It has been only under pressure of the communities and with support of the media that finally the investor had to invest in a common wastewater treatment plant.

3.3 The Influence of Local Community Pressure on SOEs

With regard to SOEs in Viet Nam, O'Rourke (1999: 147, 201) argues "when the state is both the polluter and the regulator it is particular difficult to overcome agency conflicts and advance normal regulation, ... Unfortunately, some SOEs still operates as if they are above the law". Indeed, in the case of Bien Hoa IZ, where most factories are SOEs and face severe constraints to reduce pollution, enforcement by environmental authority was hampered by economic priority of the province. It was only under the pressure of the local communities that some of these SOEs were forced to invest in pollution control facilities. Of course community pressure by itself is usually not strong enough to change the situation. Also in this case community actions required internal and external support. Internal support refers to the contribution of social organizations, which on the one hand belonged to the community while on the other hand they have - to a certain extent - their position in the conventional political system. The external support refers to the response of the Prime Minister. With the instructions of the Prime Minister, an environmental agency can exert its enforcement on SOEs. In this case, community members have pulled an alarm on environmental deterioration and health problems related to industrial pollution in a specific area to motivate state action, but the alarm must resonate in the political system and catch the attention of a powerful state actor, if it is to lead to specific actions.

3.4 The Role of the Media and Social Organizations

In the above case studies, where community members have no access to neither investor nor DOSTE, the media and the social organizations prove to be helpful in supporting community actions to influence changes in industrial practices or government regulatory enforcement. The media can emerge as a supporting actor for community protest against industrial polluters (in the case of Viet Huong IZ). Staffs from DOSTE acknowledge that in some cases DOSTE failed to enforce industrial polluters but after the latter's poor environmental performance was presented in the newspaper, or broadcasted on television, a change in environmental practice could be identified. O'Rourke (1999:163) confirms that 'two main sources generate public pressure on industrial polluters and the officials who regulate them: citizen complaints and media coverage'. There is no doubt that industrial polluters are embarrassed by public disclosure of their poor environmental practices and are motivated by reputational incentives to improve their environmental performance. In Viet Nam recently the mass media has given more publicity to environmental issues. Interviews with reporters revealed that they experience considerable freedom to write about environmental conflicts, and that environmental issues are 'hot issues' nowadays. Viet Nam television and radio have separate sciences and education programs focused on environment; newspapers have separate sections on environmental issues. Bad practices of specific firms can be subject to discussion in newspapers or on television. In some cases,

citizens send complaints on pollution directly to the mass media. More and more the media seem to play a critical role in increasing environmental awareness, dissemination of environmental information, supporting local protest against pollution, etc. The conventional (non-environmental) social organizations, especially the Women Association and the Youth Union, participate in campaigns on environmental awareness and training, information dissemination and practical clean-ups organized or co-organized by local government: 'Green Sundays', 'Green Weeks', 'Women and Home Sanitation', 'Green Houses, Nice Streets' campaigns are examples of these activities. Hardly any information on more structural activities involving protest against pollution can be found. It seems that such involvement is certainly not a policy from the top of these organizations (cf. Frijns et al., 2000). However, the case of Bien Hoa IZ has shown that to a certain extent and at the local level, the Women Association together with Veteran Group, Retired Civil Servant Group also contribute to the struggle against industrial polluters to protect local environmental quality.

4. OPPORTUNITIES AND CONSTRAINTS IN MOBILIZING COMMUNITY ACTION

There are many factors contributing to the mobilization of community action in Viet Nam. First, with the Law on Complaint and Accusatory (May 1991) complaints and accusatory have become legal and legitimate action. Community members know that they have the right to complain. Since 1994, after the passage of the Law on Environmental Protection, complaints and protest around environmental issues have grown exponentially (O'Rourke, 1999). Beside the law, Decree 175 (Article 6f), Decree 26 (Article 26.2) and Decree 29 form important legal frameworks for local communities to complain on their local environmental quality.¹⁶ Second, beside the legal right, the increasing knowledge on environmental impacts of industrial pollution, stimulates grass root reactions against industrial polluters. In Viet Nam, it is the state, Vietnamese scientists, and the media who play a vital role in raising environmental awareness and disseminating information. At school and colleges, environmental issues have become part of the curriculum. Scientists and the results of their studies highlight the significance and urgency of environmental problems in the country. The Ministry for the Environment MOSTE, together with organizations of culture, information, and fine arts, has organized several national contests on the environment with active public participation. Viet Nam television, radio and newspapers have separate programs and sections on the environment. Third, DOSTEs are sensitive to public criticism on their failures to enforce industrial polluters; industrial polluters are sensitive to public disclosure on their poor environmental performance. These are critical opportunities to motivate community action in Viet Nam.

However, many constraints exist that hamper community action. Low environmental awareness, limited access to environmental agencies, lack of local independent NGOs working on pollution issues are among the most significant constraints. Although environmental awareness has been increased recently, most of the grass roots citizens hardly know anything on for instance long-term impacts of industrial pollution. Consequently, community members often react only to direct economic impacts and health effects rather than to long term impacts. Their protests have an ad-hoc character. While the Law on Environmental Protection writes that "any person who discovers any sign of environmental damage have to report immediately to the local People's Committee or any

other governmental organizations... (Article 33, Chapter III)”, the practice (as in our case studies) is that community members often do not know DOSTE even by the name. Consequently, their complaints have to pass many bureaucratic levels before reaching the right place and community members lose their trust in state organizations (and thus stop complaining). In some case, it proves to be more effective when complaints take the route via the mass media (the case of Viet Huong IZ). In other (developed and developing) countries domestic environmental NGOs link to and draw resources from international environmental NGOs, and in that way succeed to mobilize concerned citizens to participate in policy-making and support social movements to push state and industrial polluters towards radical environmental reform. In Viet Nam such independent local or national environmental NGOs are absent. A number of national branches of international environmental NGOs can be found in Viet Nam (e.g. ENDA, IUCN, and WWF), but these NGOs limit their focus on either nature conservation or raising environmental awareness. They hardly pay attention to campaigning, protesting or challenging industrial polluters.

5. CONCLUSION

The results of our case studies are in line with the conclusion of O'Rourke (1999) in his study on CDR in Viet Nam that in the absence of strict regulation and strong enforcement, community actions as a kind of informal regulation can supplement existing command and control regulation. Furthermore, this study has shown that even though community members are more or less economically and socially depend on industrial firms, when being affected by industrial pollution, they nevertheless tend to react strongly on environmental pollution and ask for better environmental quality. Regarding to foreign investment companies and SOEs that seem to be 'outside' of environmental enforcement, under the endurable pressure of community actions, environmental agencies can be motivated to regulate these polluters. In the absence of the intervention of local NGOs, the protests of community against industrial pollution have other forms of internal and external supports. In this sense, local mass media and local social organizations play critical role. Beside some institutional, organizational, cultural factors that contribute to the mobilization of community actions, many constraints do exist that hamper the community actions. However, more knowledge and access to environmental policy-making can push forward the successful and effective community actions. The government can mobilize these actions through the environmental awareness program, and policies that provide more incentives to the public participation in policy-making.

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NOTES

¹ Since 1980s Indonesia and later on the Philippines have initiated a programme for rating and publicly disclosing the environmental performance of factories. The programme is called PROPER in Indonesia and Eco-Watch in the Philippines. Under this programme, each polluter was rated on its environmental performance from black to gold –equivalent to very poor and very good respectively- then the result of rating was released to the public, the Indonesian Vice President and the Philippines President congratulated best practice plants in a public ceremony. Such a programme has induced factories of all types to cut pollution and to improve their environmental performance. In the wake of Indonesia and the Philippines, at least five other countries have also begun pilot implementation or active consideration of the programme.

² The SKER in Viet Nam includes Ho Chi Minh City, Dong Nai Province, Binh Duong Province and Baria-Vung Tau Province. This region has the highest rate of economic and industrial development in Viet Nam.

³ Interviews with staffs from local and provincial environmental agencies reveal that complaints on industrial pollution of IZs are mostly focused on these three IZs.

⁴ In rural areas in Viet Nam the administrative units are classified into village, hamlet, commune, and district. In cities these are classified group of households, quarter, ward, and district.

⁵ . In this zone, one group interview with the Head of Hung Loc Hamlet (Hung Dinh Commune, Thuan An District) and 5 households in the same hamlet, and 5 other individual interviews with people who live in the vicinity of the IZ have been made

⁶ In Viet Nam, each administrative unit has to organise permanent meeting with the community or representatives of communities to inform new regulations, governmental programme, or plan for the following period, etc. During the meeting citizens can have opinion on all kind of issues, through which the authority can understand the situation of the communities, their wish, their difficulties, etc. in order to help them properly. Members of the People's Council are elected, and they nominate the members of the People's Committee that is the executive body.

⁷ Within a province or city, IZs are under the management of local industrial zone management board (IZMB), the latter belong to Viet Nam Industrial Zone Management Authority (VIZA) in vertical line, and belong to Provincial People's Committee in horizontal line

⁸ Interview of a staff from HCMC DOSTE.

⁹ At home, workers can use electricity of the factories they work for by connecting to the electricity network of the factories, but they have to pay for the industrial price-1, 200 VND/KWh- instead of the domestic price-500 VND/KWh. People who do not work for any factory can make a subordinate network from workers' houses.

¹⁰ Interviews in this community included the Head of the quarter (a former police man, now a driver working for Dong Nai Paper Company), the chairman of the local Cross-Road Association, a representative of local Women Association, the chairman of the local retired civil servant group (former worker in the chemical plant of Dong Nai Paper Company), and the secretary of local Communist Party (worker for VINAPRO Factory in Bien Hoa I IZ).

¹¹ The researcher also felt difficulties to breath and tightness across the chest during the interviews.

¹² These data were based on the follow-up survey of the researcher in 1993-1994 (Phung Thuy Phuong, 1994) and the EIA Report on Bien Hoa I IZ (SONADEZI, 1997).

¹³ In our previous study in Tan Dinh Hamlet, Ben Cat District, Binh Duong Province, following a community complaint, a Korean Electronic Company was forced by DOSTE to stop burning its solid waste in open air which produced a lot of hazardous smoke. Among the community members who live next to the company, there is one person working for HCMC DOSTE, he knows what he should do. He suggested the community to send complaint directly to Binh Duong DOSTE, and this proved to work (**Truong Thi Thu Thao, 2000**).

¹⁴ Except for Viet Huong IZ that has no EIA report, Le minh Xuan IZ , and Bien Hoa I IZ have EIA reports.