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Developing fears Environmental conflicts and pollution accidents in China

With the growth of environmental awareness, it is becoming common to consider harmony between human beings and the environment as a major goal of human progress. Rapid economic development can without doubt enhance people's quality of life. The challenge, though, is to develop in a manner sympathetic to existing environments. Two cases of environmental accidents in China highlight the mismatch between these two needs and the increasing reality of environmental conflicts.

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IN DEVELOPING COUNTRIES, environmental conflicts flare up over issues linked to social inequalities. In rural areas, these clashes are triggered more by the seizure of natural resources (land, water or forests) or the preservation of indigenous peoples and protection for poverty-stricken families living in these areas. Guha and Martinez-Alier (1997) call these disputes 'ecological and distributive'. In urban areas, these conflicts are prompted by the takeover of land and the benefits of government investments, or mitigating and offsetting the impacts of development projects. In this paper, environmental conflicts refer specifically to mass protests over environmental pollution.

In recent years, China has been keen to demonstrate its engagement in environmental protection work in various fields together with the development of civic environmental awareness, which has come about as a direct result of the pollution and environmental damage caused by a rapid increase in disputes in recent years. Statistics gathered by China's State Environment Protection Administration (SEPA) in 2006 suggest that from the mid-1980s to 1997 environmental disputes remained steady at about 100,000 a year. In 1998 the figure soared to more than 180,000 incidents, in 1999 to 250,000, and to more than 300,000 in 2000. Since 1997, environmental disputes have risen annually by 25 per cent with an upward linear trend. SEPA statistics also show that mass protests due to environmental problems have increased annually by an average of 29 per cent. Using two typical cases which occurred in China in 2006, this paper will discuss the increasing trend in environmental pollution accidents in the country which have not only led not only to a growing number of environmental disputes but also to a growing number of health risks for the population. It is important to examine both the reasons and characteristics of these disputes so as to resolve them successfully, and where possible reduce their occurrence.

Incident 1: liquid chlorine leak

On March 22, 2006, a short circuit occurred at an electrochemical company located in the Ningbo Daxie Development Zone, (in the Yangtse River Delta area). This led to liquid chlorine leaking out of a pipeline for about 10 minutes. The company failed to report the accident to any managerial department and also to inform the nearby residents. The decision was taken to deal with the incident as a simple production accident and production was resumed that same afternoon.

The accident caused pollution damage to food crops in the area and some villagers nearby reported dizziness, tightness in the chest, an irritating cough, skin irritations and other symptoms. In fact, by March 28, 678 people had visited the hospital, 51 were kept in under observation, and two people were diagnosed with mild chlorine poisoning. The lack of information and communication about the incident caused panic within the community and more than 100 people who lived in the village nearby the accident site besieged the electrochemical company.

The Environmental Protection Bureau of Ningbo City received a report of the accident the day after it occurred, on March 23. Yet it took until March 26 for the Ningbo Daxie Development Zone to officially order the company to cease production. On the morning of March 28, Ningbo City held a special meeting which established an inspection group, headed by the deputy mayor, in order to deal with the accident. On that same morning, SEPA was passed information about the incident from the Office of the State Council of Information. Only then were field surveys and an official investigation into what had happened set up.

According to expert assessments, approximately 100-120 kilogrammes of liquid chlorine had leaked. Traces of chlorine gas were detected up to 1.2km away. A large area planted with broad bean crops was damaged. The investigation later revealed that the scope of the chlorine affected area had been approximately 1,000 metres long and 500 metres wide.

Incident 2: contaminated drinking water

On April 5 2006, more than 40 people blocked the main thoroughfares through the village of Nanshan in Taizhou City, (situated in Zhejiang province, eastern China), in protests against the rupture of a sewage pipeline which had spilled waste water into surface water and nearby wells. Environmental protection departments confirmed that water in a number of the village's wells had become acidic, and levels of organic (soil) pollution had been detected. Two companies were suspected of the pollution and ordered to stop production.

Four days after the initial incident, on April 9, 29 villagers went to hospital to ask for a medical examination. Nine of them produced urine samples which tested 'positive' and could suggest exposure to pollution. Once again protesters blocked the roads through the village. On April 10, some villagers attacked one of the suspect factories and assaulted the owner. On the afternoon of April 14, more than 60 villagers approached local government offices demanding that the government close down the suspect businesses, provide monitoring data about the incident and pay the medical expenses of all those affected by the polluted water. By April 15, a total of 190 villagers had been examined by the hospital, and 59 people (including the 9 referred to above) had tested positive for signs of contamination. However, it was later to be stated by the team investigating the incident that none of these test results had a link with the rupture of the sewage pipeline.

In fact, field surveys carried out by a joint investigation team, comprising both provincial and municipal public health and environmental protection departments showed: (1) there was no obvious correlation between the results of the urine tests and the contaminants; (2) the results of urine tests carried out on the population in Nanshan Village produced results similar to those of tests carried out on villages which were not affected by the pollution; (3) there was evidence that a number of businesses adjacent to Nanshan village had been, to varying degrees (the report was vague in this respect), responsible for polluting the environment. Investigations also discovered that only one out of 13 companies in the affected areas had an official licence to carry out production for five years; the remaining 12 companies had all been producing illegally for two years – they had been manufacturing, albeit on a small-scale, obsolete equipment without the approval of environmental protection departments. The waste being generated from this illegal production and processing was being left untreated.

On April 25, the local government entered into a dialogue with the villagers. Compensation for health damage was offered (although the amount of compensation was not specified) and the villagers' access to relevant environmental monitoring data was agreed. In order to facilitate the clean-up operation after the incident - the complete removal of sources of pollution and dealing with the contaminated water and soil - SEPA demanded that all those companies which did not comply with Environmental Impact Assessment (EIA) procedures halt production immediately; that environmental monitoring in the area would continue and be strengthened; that there should be a timely reporting of monitoring data; and that a widespread investigation of all businesses in the area would take place to weed out any hidden environmental dangers and inconsistencies in the environmental protection procedures.

'Since 1997, environmental disputes have risen annually by 25 per cent with an upward linear trend'

Findings

While the two events documented here are distinct from each other, the reasons behind the incidents, the exposed population, the information publishing process and the effects of both pollution accidents have much in common.

Both incidents were caused by a facility failure. One was caused by an electrical short-circuit, the other by a pipeline rupture. Evidence and experience suggest that facility failures usually occur as a result of one of the following: improper operation, neglect of maintenance, no prior maintenance, no replacement of ageing equipment or a design fault in the equipment itself. Yet in the reports which followed the investigation of these two cases, there was no mention made of any of these things.

The exposed groups in the two incidents described here were similar. Both incidents occurred in industrial areas which were in close proximity to rural areas. The individuals affected in both accidents were villagers. Until conflict between the villagers and the polluters occurred there had been no information made public regarding either of the accidents. The incident at the Ningbo Daxie Development Zone occurred on March 22 2006, but it took six days for SEPA to be informed of the accident. The Nanshen incident took place on April 5, 2006, yet it was more than half a month before the Environmental Protection Administration of Zhejiang Province reported the accident to SEPA. We would suggest that the site survey data was available almost immediately.

In the first incident, exposed individuals reported dizziness, chest tightness, irritating cough, skin irritations and other acute symptoms. Only two were officially diagnosed with mild chlorine poisoning following chest x-rays. In the second incident, 59 people produced a urine test positive for contaminants, yet no obvious correlation between the results of the urine test and the contaminants could be found according to the joint investigation by provincial and municipal public health and environmental protection departments.

Crop damage and fears of adverse health effects aroused disputes between villagers and the polluting companies in both cases. Pollution prevention practices were implemented by local government to appease angry villagers.

Comments

That there are so many factors common to both incidents is worth further examination. An important question is whether there were corresponding circumstances associated with each incident that could explain the similarity. An in-depth causal analysis of the accidents and disputes is required.

Emergency situations and how to handle them should be addressed in the operating instructions for facilities and, in particular, be dealt with in training. Clearly, the strengthening of operators' awareness of production safety, compliance with operating regulations, and the timely maintenance and decommissioning of old equipment will help to reduce the risks of pollution accidents.

Oversights in terms of environmental management and a lack of emergency plan probably contributed to unnecessary damage in both cases mentioned here. The fact that the majority of firms were active without the necessary environmental permissions shows inherent weaknesses in environmental regulation and corporate social responsibility. As shown above, there is no legislation instructing companies to pass on information about incidents, in a timely manner, to the authorities. Accident information depends largely on reports put together some time after events have taken place, and often many details of incidents simply go unreported. Significant communication problems occur and, as shown, the consequences can be serious conflicts. Encouraging firms to act in an honest and ethical way is the only way forward.

In both cases, damage to crops and personal health aroused disputes between villagers and the polluting companies. According to China's 'Environmental Protection Law', a citizen has the right to challenge a firm's actions regarding violations of environmental laws and, where damage has occurred, ask for compensation. Yet few environmental conflicts have been resolved in this way in the recent decades, and our two case studies were no exception. The complexity of the law, the costs of legal action and the difficulty in identifying causal relations between pollution and damage are the major obstacles.

Fear appears to be a major factor which leads to many disputes. This fear is not limited to the immediate, tangible, environmental impact of an incident but includes uncertainties as to what the long-term impact of a pollution accident will be on a community. Debates frequently centre around the nature of health effects experienced, often couched in terms of 'true' effects - objectively measurable - versus 'perceived' effects. It is argued that levels of compensation for possible health effects is difficult to determine because of the absence of sound epidemiological evidence against which to judge individual or collective cases.

Conclusions and recommendations

A side effect of China's rapid development has been an increase in environmental problems, including the frequent occurrence of pollution accidents and environmental disputes. It wasn't until after the 9th 5-year plan that Chinese officials began to develop an awareness of environmental issues, and that these issues started to influence domestic politics and economy. There appears to be a correlation between the growth of environmental awareness and an increase in disputes following environmental pollution accidents.

Our study shows that an environmental conflict often occurs following a pollution accident where urban and rural China converge – areas where development zones or industrial parks are usually located. It is very important for regional development that ways are found of resolving these kinds of disputes. The key actors in these disputes tend to be contractors, local and national governments, and local residents (villagers). The major causes of environmental disputes are fears over health damage and fear of the unknown. Gaining the co-operation and trust of local residents is critical to dispute resolution.

Under current practices, efforts to resolve disputes with the public are left to the somewhat arbitrary discretion of regulatory officials or the firms involved. According to China's 'Environmental Protection Law', a citizen has the right to challenge, publicly, or even sue a firm whose development plans or actions are in violation of environmental laws. Yet few environmental conflicts have been resolved in this way. While suing a company is not the only way to resolve environmental disputes, we suggest there is urgent need for a legal mechanism to be put in place which maintains the people's rights and interests.

Finally, we would like to emphasise that the fact that so many companies are operating without the necessary environmental licences or permits shows major weaknesses in the environmental management of China. Environmental Impact Assessment (EIA) is an important tool in environmental management used for deliberating various claims concerning proposed activities. The EIA requires developers to prepare a report regarding any development plans, demonstrating to decision makers the environmental soundness of the project. In fact, the EIA has evolved into a vital instrument for mitigating the adverse impacts of any development plans. These EIAs are used to help define the types of activities that can or cannot be conducted in certain types of geographic areas; to define the conditions under which permitted activities may take place; or to define (based upon scientific findings) acceptable thresholds for certain activities or, for example, the acceptable level of certain substances in given environments. This is positive, but stricter observance and enforcement of EIA is needed in China.

The administrative and enforcement power of environmental laws and regulations need to be strengthened. At the very minimum, regulatory officials should develop guidelines for firms who recognise their corporate social responsibility and see the value and efficacy of addressing issues based on the lessons learned thus far.

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References

1 Harashina, Sachihiko. 1995. *Environmental dispute resolution process and information exchange.* Environmental Impact Assessment Review (15)
2 Guha R, and J Martinez-Alier. 1997. *Varieties of Environmentalism.* London, UK: Earthscan
3 Celso, Simoes Bredariol and Alessandra Magrini. 2003. *Conflicts in developing countries: a case study from Rio de Janeiro.* Environmental Impact Assessment Review (23)