



Green Beagle

China chemical safety case study: Chemical factory pollution in Shouguang, Shandong Province

In the frame of the EU-funded project: Strengthening the capacity of pollution victims and civil society organizations to increase chemical safety in China (China Chemical Safety Project)

IPEN and Green Beagle

February 2015

Introduction

Shandong Province is a key region for economic development in China. The Province is a major agricultural production base, contains the second largest oil field in China, and operates one of the top ten coal mines in the country.¹ In addition, Shandong has been the leading province in China for the chemical industry for the past 20 years and reached 1.95 trillion yuan in sales in 2011 – 17% of China’s entire chemical industry revenue.² In 2013, Shandong Province contained more than 150 development zones including 137 provincial level zones along with 13 state level economic and technological development zones, and three export processing zones, among others.³



Lianmeng Chemical; photo by Wang Chunsheng

Shouguang is a city of approximately one million people located in Weifang – a prefecture level city in the heart of the agricultural production area of the province. In fact, the city holds an

annual Vegetable Sci-Tech Fair each year as it is the vegetable capital of China and the largest vegetable provider of Beijing.^{4 5} The Fair has a show area of 450,000 m² and received 2.1 million visitors from 20 countries in 2012.⁶ Despite its large agricultural production, Weifang and its accompanying cities including Shouguang, are also a key provincial production base for the chemical industry. As a result, Weifang has the highest discharge volume of industrial waste water in the province.⁷

This case study focuses on how a resident who found himself confronted with massive pollution transformed from being a victim to an environmental journalist. The case illustrates permit violations, inter-agency fumbling, questionable land deals, and the importance of public disclosure to begin to make things right.

Chemical production close to home

Shandong Lianmeng Chemical Group produces ammonia, urea, compound fertilizer, mixed fertilizer, carbinol, glucitol, gasoline, diesel oil, sulfuric acid, 2-Acrylamido-2-Methylpropane (AMPS) and more.⁸ The company began as a fertilizer plant and grew to become, “*an integrative large-scale chemical enterprise*” that is ranked in the top 100 in China.⁹

The Lianmeng facility grew to occupy over 40 hectares and produce approximately one million tonnes of urea per year among other chemicals. One problem with Lianmeng’s operation was its location in the middle of residential housing on rented land. For example, Wang Chunsheng lived in Houzhang Village across the street from the facility. Wang took the pictures above and below by looking out his window.



View of Lianmeng Chemical across the street from a residential apartment window; photo by Wang Chunsheng

Another issue that should concern consumers about the pollution released by Lianmeng Chemical and other nearby industrial facilities is that the plants are located close to vegetable cultivation fields that supply food for Beijing and the rest of the country.^{10 11} Ironically, in 2010 The Ministry of Housing and Urban-Rural Development awarded the 2010 China Human Habitat Environment Prize of 2010 to Shouguang City and three other Chinese cities.¹² At the same time, the excessive pollution from the facility became reflected in a rising number of reports of cancers, leukemia, cerebral hemorrhage and other serious diseases.

In 2011, Wang Chunsheng, who could no longer tolerate the pollution, bought his first digital camera and started recording contamination caused by Lianmeng Chemical. Wang took the photo below out his window, across the street from the facility.



View of Lianmeng Chemical across the street from a residential apartment window; photo by Wang Chunsheng



Boy plays in Lianmeng Chemical waste dump; photo by Wang Chunsheng

Wang posted shocking photos of pollution and other information on social networking sites. He documented Lianmeng Chemical's close location to residential areas and advocated for urgently restoring the large waste dumps produced by the company. He noted how farms used industrial wastewater for irrigation and called foul on company claims that dumping polluted wastewater on wetlands meant "developed in a protective manner".



Lianmeng Chemical's gigantic waste dump; photo by Wang Chunsheng

Wang Chunsheng's momentum continued with active reporting and micro-blogging and he ended up becoming influential in the city. He caught the eye of the local environmental authority who agreed to deal with the issues raised by Wang to a certain extent. Interestingly, both the local environmental authority and police often communicate with him and have even offered him a job, which he has refused. Wang tried to set up an environmental organization, but the civil affairs department staff refused, saying, "*It is impossible. You don't need to prepare materials.*" In this way, the local government prevented Wang from setting up an environmental organization. However, Wang's activities also caught the eye of Green Beagle and collaboration began.

A brief history of long-standing pollution

Lianmeng Chemical began operating in 1960s in Houzhang Village where Wang Chunsheng lives. The company became larger and larger and in 2003 the company rented a piece of land from Houzhang Village and started a synthetic ammonia and methanol project that began operation in 2007 (renting land like this is illegal according to Chinese laws and is described further below). This vastly increased pollution levels in surrounding communities.

Lianmeng Chemical permit granted based on incorrect EIA

To obtain information about company operations, Wang Chengsheng filed for the Lianmeng Chemical's environmental impact assessment (EIA) report. In May 2013, he successfully obtained one part of the picture when he received the *Environmental Impact Assessment Report on the 400,000-ton/year Amino Alcohol Technology Innovation Project of Shandong Lianmeng Chemical Group Co., Ltd.* This EIA report was compiled by Shandong Province Metallurgical Engineering Co., Ltd. (SDME) in May 2004. SDME has operated since 1959 and works closely with the steel industry to provide a full set of engineering services.¹³ The Weifang Municipal

Environmental Protection Bureau (WFEPB) approved the company's EIA in July 2004 and Lianmeng Chemical finished the project and received its permit by the WFEPB in March 2007.

In China, a proposed project needs two kinds of approvals: 1) EIA before construction and 2) acceptance check approval after construction and a test of trial operation to ensure the facility meets standards. The problem with the Liangmeng Chemical EIA was that it said that the factory would be built within the existing site. However, in reality the company built the facility on land it acquired from Houzhang Village. This indicates a discrepancy between the planned land use and the actual use.

On June 5, 2013, Wang Chunsheng publically reported to the Shandong Provincial Department of Environmental Protection (SDEP) via China's popular micro-blogging site, Sina Weibo, that the EIA contained false information. Wang asked, "*Why does this report contain information far from consistent with the truth? There are more than 600 residents in our village, but this report says there are only 286 residents. The facility site is close to our village, but it says there is no residential area near the site, for example.*"

On July 10, 2013, Shandong Provincial Department of Environmental Protection replied to Wang Chunsheng via SinaWeibo. The agency agreed with Wang that the Lianmeng Chemical EIA report contained erroneous data in terms of the population of Houzhang Village. As a result, the authority promised to reprimand Shandong Province Metallurgical Engineering Co., Ltd for falsifying data in the EIA. Even more surprising was that the Provincial environmental authority promised to make a formal application to the national Ministry of Environmental Protection (MEP) for follow-up action in accordance with relevant State regulations.

Promises but no action

Three months later, Project Personnel followed up on the promise by Shandong Provincial Department of Environmental Protection to notify the national Ministry of Environmental Protection (MEP) about the false information in the Lianmeng Chemical EIA. A search for information on the MEP website revealed that no punishment of Shandong Province Metallurgical Engineering Co., Ltd had occurred. Project personnel promptly submitted two applications for information disclosure to MEP: 1) information about punishment that Shandong Province Metallurgical Engineering Co., Ltd had received since 2004; and 2) a copy of the document sent by Shandong Provincial Department of Environmental Protection to MEP. On November 28, 2013, MEP replied that it had not punished Shandong Province Metallurgical Engineering Co., Ltd. Even more surprising, the national environment agency revealed that it had not even received such a document from the Shandong Provincial Department of Environmental Protection.

Outlining the reasons for action

Project personnel promptly released the MEP reply via its Weibo account and asked the Shandong Provincial Department of Environmental Protection for an explanation. In addition, we notified MEP that the EIA report compiled by Shandong Province Metallurgical Engineering Co., Ltd contained significant errors and omissions. We requested that MEP disqualify Shandong Province Metallurgical Engineering Co., Ltd as an EIA service provider and deregister the EIA engineer responsible for the compilation of the Lianmeng Chemical EIA report.

Project personnel outlined two broad categories of errors in the EIA report as follows:

Contradictory descriptions of the locations of the factory site

Fig. 2-2 in Chapter 2, “Project Analysis”, shows that the factory site is east of Houzhang Village and does not extend beyond the road between it and this village. In contrast, Fig. 3-1 in the same chapter shows that the factory site also covers land north of Houzhang Village. In reality, the facility occupies part of the land that belongs to the original Houzhang Village, suggesting that Fig. 2-2 is obviously erroneous.

Faulty analysis of air pollution impact assessment

Shandong Province Metallurgical Engineering Co., Ltd already knew that the proposed project would cause smoke and dust and that the surroundings failed to meet Total Suspended Particulate and PM10 requirements. The EIA report contained no information on the aforementioned problems in the section regarding air impact assessment, nor did it propose any plan for reducing particulate matter in the area. The EIA only predicted that sulfur dioxide requirements would be met. This is a typical example of irresponsible behavior and poor quality EIA preparation.

Chinese law specifies certain requirements for EIA service providers and penalties for false information in EIA documents.¹⁴ The law notes the following penalties when EIA documents contain false information due to irresponsible behavior or falsification:

- The level of qualifications of an EIA service provider shall be lowered or its qualification certificate shall be revoked
- The EIA provider shall be fined one to three times as much as it has charged
- The EIA engineer responsible for the compiling of the EIA reports shall be deregistered Individuals or organizations shall be held criminally responsible where a crime has been committed
- The EIA service provider shall be punished by warning, reprimand, and/or rectification within 3-12 months including via a reduced scope of assessment or a lowered level of qualifications depending on severity in the event of a low-quality EIA report or significant omissions in the selection of environmental impact identification and assessment factors.

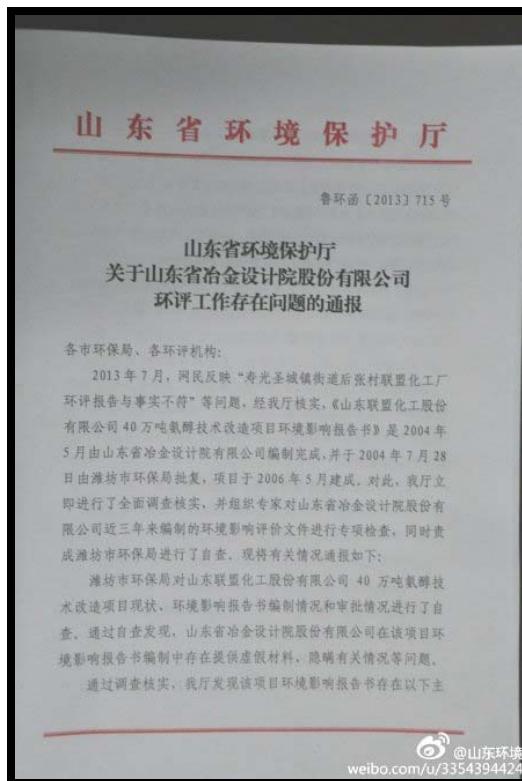
False EIA gets a government agency in trouble

Fortunately, our efforts yielded results. On December 13, 2013, the Shandong Provincial Department of Environmental Protection responded via its Weibo account by making public the *Statement of the Shandong Provincial Department of Environmental Protection on Problems with Environmental Impact Assessment by Shandong Province Metallurgical Engineering Co., Ltd.*, citing five problems with the EIA report on the Lianmeng Chemical facility in Houzhang Village, including the following significant issues:

- Houzhang Village as an environmentally sensitive area involved in this planned project, had a population of 613 in 2004 rather than 286 as claimed in the EIA report
- Air impact assessment factors should include both conventional pollutants and specific pollutants such as SO₂, NO_x, H₂S, NH₃ and methanol, among which H₂S and NH₃ are missing in the EIA report

- No analysis of hazardous waste emissions is available
- Ambient air quality monitoring fails to cover Qianzhang and Houzhang Villages, both of which are within the health protection zone, and data from measured points lacks that about H₂S, NH₃ and methanol
- No forecasts are available in terms of NO_x, H₂S and methanol within the scope of assessment as well as the compliance of fugitive emissions

Finally, the Shandong Provincial Department of Environmental Protection reprimanded Shandong Province Metallurgical Engineering Co., Ltd and ordered it to make corrections within a specified period of time. At the same time, the agency reprimanded the local Weifang Municipal Environmental Protection Bureau for loose control over the EIA and required that certain persons in charge of this facility project be held responsible. Media outlets such as *China Environment News*, www.dzwww.com, *Shandong Business Daily* and www.iqilu.com covered this event, with their reports published again by other media outlets such as www.xinhuanet.com and www.ifeng.com.



First page of Shandong Province EPB decision on punishing EIA institute for falsification of Lianmeng Chemical EIA; photo by Xie Xinyuan

Air pollution off the chart

On July 25, 2013, Green Beagle conducted an investigation of company operations in Shouguang. The results showed a narrow road with walls on each side and Lianmeng Chemical operating on both sides of the street. On the other side of the walls stood desulfurization towers, methanol storage tanks, coal conveyors and other large pieces of equipment. Huge overhead pipes crossed the street to connect the two sides of the company. The Houzhang Xincun

apartment complex where Wang and other residents live is close to a T-junction 50 meters away. In other words, only a road separates Liangmeng's gigantic production operation and Wang's apartment complex. Looking through a window at home, Wang Chunsheng can see the cooling tower and the gas generation unit of the facility.

Project personnel also visited the Gucheng Street Industrial Park to check Lianmeng's branch operation at the new site. Visibility became lower and lower and the overpowering smell of urea became stronger and stronger. It was only until personnel were beside the walls that we could barely see a few characters on the cooling tower -- "Lianmeng Chemical". Our handheld detector showed that the particulate matter (PM2.5) concentration exceeded 600ug/m³. We measured PM 2.5 many times during our visit to Shouguang and always found concentrations greater than 300ug/m³.

The World Health Organization (WHO) guidelines for PM2.5 are 10ug/m³ annual mean and 25 ug/m³ for a 24 hour average.¹⁵ This indicates that levels in Shouguang are routinely 12 – 30 times higher than WHO guidelines. The agency notes that there are adverse effects from both short-term and long-term exposures to PM2.5 pollution and that there is no threshold for adverse effects:

The risk for various outcomes has been shown to increase with exposure and there is little evidence to suggest a threshold below which no adverse health effects would be anticipated. In fact, the low end of the range of concentrations at which adverse health effects has been demonstrated is not greatly above the background concentration, which for particles smaller than 2.5 μm (PM2.5) has been estimated to be 3–5 $\mu\text{g}/\text{m}^3$ in both the United States and western Europe.”¹⁶

Pollution in the middle of China's vegetable capital

The industrial park in Beiluo Town where the new branch of Lianmeng Chemical is located covers an area of several square kilometers. The place already houses steel mills, rubber plants, thermal power plants, etc., which are surrounded by vegetable greenhouses in the “vegetable capital”. In fact, some greenhouses are even within this industrial park. As for the greenhouses covering over 26 hectares in the village, a farmer told us that over 13 hectares have been left unfarmed mainly because the land uses would be redistributed, after which they would be farmed once again.



Dead trees outside the Luli Steel smelter; photo by Wang Chunsheng



Luli Steel smelter dust on vegetable greenhouses near the plant; photo by Wang Chunsheng

There is a railway running into the industrial park and a garbage zone more than 300 meters in length on one side of this railway. On the other side is a dump of cinder allegedly from the steel mills. Filled with wastewater, Zhangseng River flows beside the industrial park. Beside this river,

a buried sewage pipe runs to a sewage treatment plant in Yangkou Town. We sampled wastewater from within a sewer. It was pink. There was a sign less than three kilometers away from the industrial park, that reads, “Level 1 Protected Source of Drinking Water”. But here we could still smell garbage.



In Hou Town, Luli Steel is honored for its environmental stewardship; photo by Wang Chunsheng



Luli Steel smelter; photo by Wang Chunsheng

We then visited Chenming Industrial Park, which surrounds a village and brings local villagers more polluted air and water than business opportunities. This industrial park has caused a one third reduction in crop yields, according to local villagers. Green spaces outside the walls of these plants are very wide. In addition to landscaping, these spaces serve as a good cover for waste dumping – and there are sewers behind trees. Less than one kilometer from here is a waste pit, which is being dealt with by the local environmental authority after it received a report from Wang Chunsheng. But we do not know where these wastes will be shipped.



Luli Steel smelter pollution falls on corn; photo by Wang Chunsheng

There is an industrial park in almost every town of Shouguang City, plus a coastal development zone, according to maps made by Wang Chunsheng (Please see Annex 1). Whether these industrial parks have been reasonably planned with respect to water resources, capacities of aquatic and atmospheric environments as well as the traditional vegetable and salt industries in Shouguang and whether these plans have been well implemented or not will have a great impact on the local environment and the health of its residents as well as consumers throughout the country who eat the crops grown here.



Gigantic waste pile from Juneng Steel Corp; photo by Wang Chunsheng



Luli Steel smelter waste dump; photo by Wang Chunsheng



Wastewater released by Luli Steel smelter; photo by Wang Chunsheng



Waste from Juneng Steel Corp contaminates irrigation canal for crops; photo by Wang Chunsheng

Contamination due to land rental Instead of expropriation

In China, one of the root causes of environmental problems occurs when companies gain the right for using land by means of land rental instead of expropriation. The problem worsens when

the involved land has close ties with certain residents and farmland, making the consequences of contamination even worse. The Liangmeng Chemical case clearly illustrates this problem.

In May 2013, after applying for information disclosure, Wang Chunsheng obtained the permit granted to Lianmeng Chemical for the right to use the land for the project near his residence in Houzhang Village. The permit showed the legal transfer of the land from the government to the company. This contradicted what the Houzhang Village Committee had told Wang – that Houzhang Village had leased over five hectares of land to Lianmeng Chemical, and that the company paid the village committee a rent once every five years. In this way, Lianmeng Chemical was using land owned collectively by Houzhang villagers. According to the then *Land Administration Law of the People's Republic of China*, collectively owned rural land is prohibited from being used for industrial projects, as companies may only obtain the land use right by means of right transfer after the government expropriates the land from the village. Expropriation of basic farmland requires approval by the State Council of China. This raised an important question: Did Lianmeng Chemical really rent land from Houzhang Village or did the government expropriate the land of Houzhang Village before handing over the land use right to Lianmeng Chemical?

On January 8, 2014, Wang Chunsheng posted a message on the official micro-blog of the General Office of the Shandong Provincial People's Government, saying that Lianmeng Chemical has been using the land of Houzhang Village by means of rental rather than expropriation.

On February 14, 2014, the provincial government replied via private message, but with the addressees being the Weifang Municipal Land and Resources Bureau (WFLRB) and the Weifang Environmental Protection Bureau. This probably means that the Shandong Provincial People's Government was simply using comments written by the Weifang municipal government departments. The reply from the Shandong Provincial Government noted the following:

(1) The Provincial People's Government went through formal procedures to expropriate 3.73 hectares of land from Houzhang Village, including 3.42 hectares of arable land, and paid the latter 1,747,200 yuan. In return, the Houzhang Community Committee confirmed receipt of the compensation fees for the land expropriation. Then the Shouguang municipal government transferred this piece of land to Lianmeng Chemical, which was granted the State-owned Land Use Permit. In short, this piece of information was intended to demonstrate that Lianmeng Chemical went through the correct legal formalities to obtain the right for using this piece of land so that it could use it for industrial purposes.

(2) Strangely, even though the land expropriation was already in the approval process, the Houzhang Community Committee still leased the 3.73 hectares of land to the company plus an additional 1.61 hectares of land for road “on an unauthorized basis”. They set a rent of 65,519.67 yuan per hectare per year with a requirement that it should be paid once every five years. Lianmeng Chemical has since paid the rent three times.

Project personnel collaborated with Wang Chunsheng to analyze this information and post a Weibo message with the following three points: (1) Why was the company renting the land if it

had already received the permit for “legal” usage from the local government?; (2) Why did the company pay rent for 1.61 hectares of land for a road if this piece of land was still used as a road in the village? Lianmeng Chemical seemed to be curiously generous; and (3) The message noted the incredible coincidence that the total cost of five year’s rent of the land happened to be 1,747,200 yuan which is absolutely equal to the price Shandong Provincial Government supposedly paid to expropriate the land from Houzhang Village. This coincidence could mean that there was only a fee for rent and no compensation price for actual land expropriation, in violation of the law. If the land was not legally expropriated, then the land use of Lianmeng Chemical’s project within the land of Houzhang Village was illegal, and likely subject to criminal prosecution.

Through this investigation, Project personnel and Wang Chunsheng raised the possibility that the Shandong provincial government illegally expropriated the 3.73 hectares of land from Houzhang Village. The plan worked as follows: Lianmeng Chemical pays rent to keep the Village happy and in return gets the land use permit without going through the lengthy complicated process of State Council approval. In this way, the company gets rights only granted by expropriation without having to actually expropriate anything.

Restoring the contaminated site: the primary Issue

Lianmeng Chemical turned to leveling its facility in Houzhang Village in a very barbaric manner. There were more than ten days when intense noise lasted from 6:00 am till 10:00 pm and disturbed residents in the Houzhang Xincun apartment complex, who then complained about it once and again to the local police, but were still unable to stop it. Wang Chunsheng posted messages to Weibo showing that the noise level was up to 93.57 db. This situation lasted for more than two months. On June 5, 2014, Lianmeng Chemical was so shameless that it even made huge amounts of noise that distracted students during the critical National College Entrance Examination.

In November 2014, Wang Chunsheng discovered a new problem with the demolition by Lianmeng Chemical. A few years ago the contaminated site was built, without restoration, into a residential area after the Lianmeng Chemical compound fertilizer production facility was demolished. Now, Lianmeng Chemical planned to demolish buildings once again on about 66.7 hectares of brown field. The Shouguang Municipal Environmental Protection Bureau (SGEPB) said on its official microblog that it urged Lianmeng Chemical to conduct ecological restoration. The Bureau stated that the demolition and relocation of Lianmeng Chemical methanol facility in Houzhang Village was to implement the so-called “Move into the industrial park from the city” policy in favor of the public. The Bureau said that the original site will be ecologically restored after the relocation is completed and will not be used for any other purpose until the ecological restoration is completed. However, the Shouguang Municipal Environmental Protection Bureau has yet to disclose how this land will be restored.

Wang Chunsheng also revealed that he had learned from the Houzhang Village committee and the village committee of the Communist Party of China that Lianmeng Chemical wanted to return the contaminated land to Houzhang Village without doing any ecological restoration. Moreover, the Shouguang Municipal Environmental Protection Bureau even told the Houzhang Village committee that they did not know how to do soil remediation. Lianmeng Chemical’s

attempt to return the contaminated land to Houzhang Village also demonstrates that its prior use of the land was based on rental instead of expropriation, which is illegal under Chinese law.

As for the Lianmeng Chemical facility in Houzhang Village, soil remediation is the primary environmental issue that needs to be resolved. In 2014, the MEP issued four technical guidelines regarding the management of contaminated sites, including the *Technical Guidelines for Site Environment Surveys (HJ 25.1-2014)*, the *Technical Guidelines for Site Environment Monitoring (HJ 25.2-2014)*, the *Technical Guidelines for Contaminated Site Risk Assessment (25.3-2014 HJ)* and the *Technical Guidelines for Contaminated Site Soil Remediation (HJ 25.4-2014)*, plus the *Notice on Strengthening Pollution Prevention and Control in Industrial Enterprise Shutdown and Relocation and Original Site Redevelopment*. This notice makes it clear that environmental surveys/monitoring, risk assessment and soil remediation at contaminated sites must be conducted in accordance with the guidelines as follows:

- relevant data/information should be recorded at the environmental authorities in cities with districts and be open to the public;
- land transfer is prohibited where no environment site survey or risk assessment has been conducted in accordance with relevant regulations and entities responsibilities for restoration have not been identified; and
- no project irrelevant to restoration may be implemented where the contaminated site has not been restored.

Project personnel and community residents can actively participate in these processes.

Wang Chunsheng – Best citizen journalist of 2014

In 2014, Wang Chengsheng was awarded “Best citizen journalist” by the China Environmental Press Awards, organized by *chinadialogue*, *the Guardian*, Netease New Media Center and Renmin University’s School of Environment and Natural Resources and School of Journalism and Communication.¹⁷



Winners of China Environmental Press Awards for 2014; From left to right: Xuan Jinxue (Biggest impact), Li Feng, Gao Shenke (Best scoop), Wang Chunsheng (Best citizen journalist), Huang Yunguo (second prize winner for the best citizen journalist), Huang Fang (second prize winner), Gao Xiao (second prize winner), Chen Haobo and Liu Bo (second prize winners for the best citizen journalists); photo by China Dialogue¹⁸

Upon receiving the award Wang noted that, “*It's not easy to be a journalist in China and it's even harder to be an environmental journalist. Therefore, I hope that there will be more acknowledgement and recognition for our profession.*” Journalist Feng Yongfeng noted that Wang, “*...met with opposition, not just from local officials and farmers, but even people he was trying to help were sometimes unwilling to listen, preferring to believe that there was nothing to worry about.*”¹⁹ Community residents have a vital role to play in environmental protection. As Feng observed, “*Ordinary people are doing what professional reporters can't: exposing and taking action against local polluters.*”²⁰

Conclusion

The Shouguang case study provides opportunities for improvements in several areas:

Updating pollution prevention and control

This case reflects some of the typical problems with legislation and enforcement of air pollution laws in China. Often the focus is on regional- or national-level actions but this case and others illustrate how measures need to improve situations locally. In late 2014, China released a draft amendment of the *Act of Air Pollution Prevention and Control*. Some additional recommendations for this law could include:

1. Enhancing monitoring of medium- or small-scale companies. The current draft addresses State- or Provincial-controlled facilities. However, medium- or small-scale companies can be enormous polluters. Lianmeng Chemical in this case is a clear example.
2. Expedited research on the health impacts of air pollution that can be used in legal processes to remedy pollution violations that cause harm.
3. Developing some mechanism for compensation and/or humanitarian aid for pollution victims should be part of amendments to the *Act of Air Pollution Prevention and Control*. This is needed not only due to suffering, but also because it is extremely difficult to resolve these situations by litigation. In these situations, the government should provide (at least temporarily) help to victims including medical, psychological, technical and legal aid, and compensation for reasonable measures they take to protect themselves from air pollution such as masks and air cleaners.
4. The role of local communities needs to be addressed in the new law. Residents in an impacted neighborhood should be given the right to supervise the local plant. Very often, companies operate air pollution devices during government inspections and simply shut them off to save money for most of their operating time. This works because local environmental officials are too understaffed to adequately monitor pollution. The public could play a role in environmental enforcement by being trained to take evidence and participate in plant supervision.
5. Law enforcement officials should be trained and assigned to collect evidence of environmental law violations. This could include surveying, sampling, monitoring, taking photos, making video, audio and written records, copying records of manufacturing and pollution and other materials concerning environmental protection.

Finally, the existing law on *Emission Standards of Odor Pollutants* (GB 14554-93) issued in 1993 could be used more effectively. Under the law, determining “concentration of odorous gas” requires no precise instrument to make a judgment of “beyond standard” judgment. All that is needed is the nose.

Land use laws should be enforced

When companies gain the right to use land by means of land rental instead of expropriation, they violate Chinese law and cause thousands of protests in China each year. Cash-hungry local governments fuel this process. The problem is significantly aggravated when the company causes outrageous pollution as illustrated in this case study. In this case, Lianmeng Chemical pays rent to keep the Village happy and in return gets the land use permit without going through the legally required process of State Council approval. In this way, the company gets rights only granted by expropriation without having to actually expropriate anything. The circle is completed when the company contaminates the land and then returns it back to the local government to clean up its mess. The entire process turns company profit into a public liability, often with great harm to human health and the environment. Land use laws in China need to be enforced. An independent province by province examination of land use compliance would reveal where problems lie and provide a first step toward remedying the situation.

Industrial parks

Industrial parks need careful planning. In this case, it is hard to believe that a large, highly polluting industrial park could escape enforcement and actually operate in the middle of China's "vegetable capital". EIAs should be required for industrial parks as an entity and proceed through a critical process that includes public participation and access to information. In general, the process of site selection should be transparent and include true public participation. In the Shouguang case, Lianmeng Chemical operated an outrageous polluting facility across the street from residents.

Effective remediation

In this case, Lianmeng Chemical wanted to return the contaminated land to Houzhang Village without doing any ecological restoration. To make matters worse, the Shouguang Municipal Environmental Protection Bureau admitted that they did not know how to do soil remediation. The root cause of this problem is the illegal land rental to the company. However, the issue of what to do with a contaminated site remains. The new technical guidelines for remediation issued by MEP in 2014 provide for public provision of relevant information and prohibit any land transfer without restoration of the site. These guidelines should be fully implemented and enforced. A key component for success will be active public participation in the process.

EIA needs correct implementation and enforcement

The central government has an important role to play to ensure that Chinese law is effectively implemented and enforced. Frequently companies and EIA agencies do not respect the relevant law and local people's basic rights. In this case, a false EIA allowed a polluting company to obtain a permit. The EIA was performed by a well-known company and ignored air impact assessment factors, hazardous waste emissions, and fugitive emissions. Additionally, it did not even cover two villages within the health protection zone. This highlights the importance of the intervention of the central government on the duties of provincial and local environmental protection departments or bureaus to conduct necessary investigations on the content of EIA statements and enforce violations when they occur. As a first step, a guideline on checking some common errors in EIA statements should be provided by the Ministry of Environmental Protection.

The EIA process should be prioritized for facilities with potential pollution so that if it is unsatisfactory, no other permits or licenses proceed. Other processes that often take precedence include investment approval by the development and reform department, land use approval by the land resource department, mining approval by the mining resource department, planning approval by the municipal planning department, and a business license by the industry and commerce department. If these approvals are obtained first (as they often are) it will be difficult for an EIA to stop a polluting project due to “administrative momentum”.

Legal reform

Fines for pollution are generally low so companies often calculate a cost – benefit of polluting vs. paying to properly operate factories, and that calculation often results in a “pay to pollute” situation. This problem is compounded by the fact that revenues obtained from pollution fines often go into the general funds of local governments instead of being separately earmarked for environmental regulation. Local governments do not like to give up this money and begin to view local factories as economic partners. Taken together the motivation to reduce pollution gets sharply reduced. The situation will never be resolved without a newly revitalized set of institutions that can impartially address these types of pollution and subsequent harms. This case, like many others, illustrates the urgent need for effective legal reform that creates truly impartial administrative and legal institutions to regulate pollution.

Media reports

http://www.cenews.com.cn/sylm/hjyw/201401/t20140116_763698.htm

<http://shrb qlwb com cn/shrb/content/20131217/ArticelA15002JQ.htm>

<http://www.dzwww com/dldc/wyjbhpzj/>

<http://www qlwb com cn/2013/1216/68649 shtml>

Annex 1. Maps of facilities in Shouguang



Heavy concentration of industrial parks in Beiluo Town of Shouguang County;
Image produced by Wang Chunsheng



Heavy concentration of industrial parks in Chahe Town of Shouguang County;
Image produced by Wang Chunsheng

About the China Chemical Safety Project

This is an EU-funded project of IPEN with partner Green Beagle that aims to strengthen the capacity of civil society organizations and communities impacted by pollution to increase chemical safety in China. The Project (also known as the China Chemical Safety Project) is being implemented in China over two years with total EU funding of €344,580 and EU contribution of 77.84% of the total cost.

The Project includes:

- Improving capacities of impacted communities and civil society organizations for involvement in policy making
- Training on public participation in environmental impact assessment
- Generating new publicly available data about pollution and impacted communities that contribute to increased implementation of local and national chemical safety policies
- Raising awareness on emissions-related pollution



European Union

Strengthening the capacity of pollution victims and civil society organizations to increase chemical safety in China (China Chemical Safety Project) is funded by the European Union. The contents of this report are the sole responsibility of the IPEN and Green Beagle and can in no way be taken to reflect the views of the European Union.

The European Commission is the EU's executive body. "The European Union is made up of 27 Member States who have decided to gradually link together their know-how, resources and destinies. Together, during a period of enlargement of 50 years, they have built a zone of stability, democracy and sustainable development while maintaining cultural diversity, tolerance and individual freedom. The European Union is committed to sharing its achievements and its values with countries and people beyond its borders."

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In addition, IPEN would like to acknowledge that this document was produced with financial contributions from the Swedish International Development Cooperation Agency through the Swedish Society for Nature Conservation (SSNC), along with other donors. The views herein shall not necessarily be taken to reflect the official opinion of any of these donors, including SSNC or its donors.

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