



Water Pollution in China: How Can Business Influence for Good?

Rebecca Nelson

Blake Dawson, Melbourne, 101 Collins Street, Melbourne, Vic. 3000, Australia.

E-mail: rebecca.nelson@blakedawson.com

Despite China's comprehensive system of environmental laws and standards, poor water quality is widespread. This has significant detrimental effects on Chinese society and business, and causes serious economic losses. Academic commentary on this issue has largely focused on increasing the effectiveness of government enforcement of laws related to water pollution. However, effective enforcement will depend on legal and institutional reform, and problems are unlikely to be solved quickly. As a result, it is necessary to look beyond the state. This paper argues that some businesses, here termed 'influencing firms', have significant capacity to influence other businesses ('target firms') to improve China's environmental situation. This paper brings together recent empirical research, documented case studies, and public corporate reports to demonstrate how and why influential firms can and should use their influence for environmental good in this context. Four key tools are suggested for influencing firms to encourage improved environmental management in target firms: (1) green supply chain management measures; (2) influencing through business groups; (3) publishing environmental performance reports; and (4) forming alliances with environmental groups.

Asian Business & Management (2008) 7, 489–509. doi:10.1057/abm.2008.21

Keywords: supply chain management; water pollution; China; environmental reporting; environmental law; corporate social responsibility

Introduction

Business can be an influential and practical force for good...

We commit to build on best practices and to form alliances and collaborative efforts with like-minded businesses, including between foreign and local companies and within industry sectors.

We recognize the promise of cross-sectoral approaches to overcoming societal challenges and will form alliances and partnerships with actors in other sectors of society, such as not-for-profit organisations...



We commit to addressing key environmental challenges by taking action, where practical, in areas such as research, innovation, sustainable consumption and production, clean technologies, cooperation, education, and self-regulation that can positively address the environmental degradation and damage to the planet's life support systems brought by human activity...

We ask Government to actively encourage principled corporate practices and promote accountability and transparency.

— Excerpt from the Shanghai Declaration (Global Compact, 2006: 31).

In 2006, global business leaders endorsed a view of business as an 'influential and practical force for good'. Accordingly, they committed their organisations to collaborate with other businesses and form cross-sectoral alliances to address key environmental challenges. This endorsement occurred in Shanghai, against the background of an environmental situation in China that many continue to view as dire, particularly in the case of water pollution. This paper seeks to add to that endorsement by bringing together recent empirical research, documented case studies, and public corporate reports, to demonstrate how and why influential firms should use their influence for environmental good in the context of water pollution in China. This paper argues that some businesses, termed 'influencing firms', have significant capacity to influence other businesses ('target firms') to improve China's environmental situation. It suggests that influencing firms can gain significant benefits from using their leverage in this way. Moreover, if they apply this influence in considered ways, target firms too may gain important benefits.

The first part of this paper gives a brief overview of the water pollution situation in China, its key causes, the implications in economic and social terms, and the central government's response. The author then presents the case for looking beyond regulatory action as the sole solution to China's water pollution problems, by outlining the profound and, in the short term, intractable problems with enforcing environmental laws in China. The paper then posits a series of drivers experienced by influencing firms for encouraging better environmental performance on the part of their supplier and competitor firms, and drivers for the latter to respond to this influence. Three main tools are suggested for influencing firms to act alone or in concert with other businesses to apply this influence. In decreasing order of directness, they are: (1) green supply chain management (GSCM) measures; (2) influencing through business groups; and (3) publishing environmental performance reports. Moving beyond the business sector, a fourth additional tool is suggested, namely forming alliances with environmental groups. Finally, the paper returns to the role of governments, and suggests that both Chinese and foreign governments have a policy role to play in supporting the suggested actions of influencing firms.



Water Pollution China

China's most recent State water quality figures are very sobering. Of the water resources monitored at the national level in 2005, 59 per cent of major rivers and 72 per cent of lakes and reservoirs fell into or below the worst two of China's five water quality classes (SEPA, 2006). Under China's water quality standards, such water is classed as unfit for human contact or industrial use. Poor water quality exacerbates water scarcity, which is severe in some parts of China — water pollution is highest, and water availability lowest, in northern China, where some areas have only 4 per cent of the world average availability of water per person (Varis and Vakkilainen, 2001). As a result, about one quarter of the population does not have access to water that will not cause immediate health impacts (Klaver and Mulkey, 2006–07).

Key causes of water pollution in rural China are agricultural production methods in northern China, and rural industry, particularly Township and Village Enterprises (TVEs). TVEs are small enterprises that are engaged in potentially very polluting industries such as pulp manufacturing, leather tanning, and electroplating. As they require little capital investment, TVEs tend to lack the resources effectively to manage waste streams, they are difficult to monitor as they are widely dispersed, and they often have close ties to local government, which can shield them from pollution enforcement activities (Wang *et al.*, 2008). In addition, agriculture in northern China has expanded in response to industrialisation in the south, leading to increased irrigation and overuse of fertilizers to compensate for drier conditions (Webber *et al.*, 2006). In cities, water quality is threatened by the discharge of untreated industrial effluent and sewage to waterways, since about half of China's 661 cities lack sewage treatment (Varis and Vakkilainen, 2001; Klaver and Mulkey, 2006–07).

China's central government considers water pollution a threat to both economic prosperity and social harmony. Pan Yue, vice-minister of the national level State Environmental Protection Administration (SEPA), has referred to water problems as 'the bottleneck constraining economic growth in China' (Blumenauer, 2004). SEPA estimated in 2006 that water pollution and total environmental pollution caused economic losses of about 1.7 and 3.05 per cent of GDP, respectively (OECD, 2006). Water pollution may threaten social harmony since it may catalyze internal migration and reinforce social stratification as it disproportionately affects peasants, who may lack alternative, unpolluted water sources (Li, 2007). Indeed, it appears that Chinese community concern over water pollution is growing. According to SEPA, there were 50,000 pollution-related disputes in 2005, and between 2001 and 2005, environment agencies received 2.53 million letters and 430,000 visits from people requesting redress (Wang, 2006–07). Hostile



public protests have also been documented in relation to water disputes (Cannon, 2006).

The central government has shown its concern over water pollution through numerous formal statements, policies, and plans. For example, the Ninth and Tenth Five-Year Plans included major water quality measures (Chen, 2005). Further, dedicated Five-Year Environment Plans now set out detailed targets and programmes for environmental protection, in addition to measures set out in the main social and economic development plans (SEPA, 2006). Chinese governments at the central and lower levels have also enacted myriad water-related laws — over 800 such laws at the provincial level alone (Wouters *et al.*, 2004). In 2005, the government focused on water pollution through a formal State Council Decision and a 5-month long anti-pollution enforcement campaign (Wang, 2006–07b). However, despite the gravity of water pollution in China, the seriousness with which the central government views the problem, and the relatively comprehensive nature of its system of environmental laws, the central government faces significant challenges to enforcement. These challenges are profound, and are unlikely to be resolved quickly. As a result, it is necessary to look beyond the state to address water pollution in China.

Challenges Facing Government Enforcement: The Need to Look Beyond the State

Difficulties with environmental enforcement in China point to fundamental systemic problems relating to inappropriate institutional arrangements, inadequate resourcing, and unclear legislative drafting. In institutional terms, the mandate of local level environmental protection bureaus (EPBs) to carry out SEPA's environmental protection goals conflicts with the economic objectives of local governments that fund the EPBs. Local governments may rely heavily on polluting enterprises for tax revenue and employment of citizens. For example, in Fujian province's Pingnan County, one polluting enterprise was found to constitute 25 per cent of the county's tax base (Wang, 2006–07a). This reliance can lead local governments to prevent EPBs from imposing pollution fines (Wang, 2006–07a), or disseminating information relating to a company's poor environmental performance (OECD, 2006). Connections between enterprises and village heads may also encourage local governments to impose less severe sanctions, such as pollution fees, which are usually cheaper than the cost of installing pollution prevention equipment (Moorman and Zhang, 2006–07; Wang *et al.*, 2008). They may even fail to follow central government directions to close down polluting businesses (Chen, 2005). In other cases, local governments have revoked fines imposed by EPBs or refused to permit an EPB to apply for a court order in relation to a fine



(OECD, 2006). Even in more developed areas, EPBs may lack the capacity to control powerful State-Owned Enterprises (SOEs; Tilt, 2007).

Scarce central government resources also compromise SEPA's ability to directly enforce laws. In 2007, SEPA had only five regional enforcement centres (Wang, 2006–07). This exacerbates problems in the approach to enforcement. Enforcement tends to be targeted at large polluters, rather than the numerous smaller polluters, the cumulative impacts of which may be greater (OECD, 2006). Further, enforcement agencies favour using administrative penalties over prosecution under the Criminal Law, which applies to serious environmental pollution (Wang, 2006–07a, b).

The style of Chinese legislative drafting also presents an obstacle to effective enforcement. Chinese environmental legislation often uses hortatory rather than mandatory language, and some obligations do not clearly apply to any entity, or have no procedures for enforcement. Moreover, conflicts between agencies sometimes mean that broad 'framework-style' laws never gain implementing regulations or standards that are more clearly capable of enforcement (Wang, 2006–07b).

There is widespread recognition of the need for significant efforts to improve the state's capacity to enforce environmental laws, and for profound reforms to China's institutional and legal framework for environmental protection, of a similar scale to the reforms carried out over the past three decades in relation to SOEs (Xue *et al.*, 2006). The depth of the problems outlined above suggests that these reforms will require significant resources and time. In this context, it is vital to consider developing the role of the business sector (both acting alone and in concert with other sectors) in improving the environmental situation in China, independent of pollution enforcement by the State. Such a development may help to reduce the strain on environmental enforcement agencies and help China to reap wider benefits from the environmental knowledge and capacity of the business sector. This approach also takes advantage of the comparatively strong influence that supply chain and community pressure currently have on Chinese businesses, relative to the influence of regulatory pressures on environmental performance (Xue *et al.*, 2006; Zhang *et al.*, 2007).

This paper focuses on the potential role of the following elements of the business sector (here termed 'influencing firms'):

- foreign firms with connections to China (whether through supply chain connections to China, having operations in China, or partnering with a Chinese business in a joint venture); and
- Chinese firms, particularly those with foreign supply chain connections, in influencing the environmental management of their Chinese suppliers or competitors ('target firms').



Business Drivers for Improved Environmental Management

Before asking how influencing firms can ‘influence for good’, it is important to determine why they would do so, and the existing drivers for improving environmental management in target firms, to which influencing firms can add. Prominent practical reasons for acting are to help influencing firms maintain supply continuity, and to safeguard the market value of their reputation. On the other hand, compelling competitor firms to adopt better environmental management practices serves to lessen the competitive disadvantage that firms, which are subject to international scrutiny may face in meeting high levels of environmental performance. Motivated by these reasons, influencing firms can add to existing drivers for target firms to improve their environmental performance, in particular the need to meet foreign environmental standards.

Drivers for Influencing Firms

In a direct sense, improved water quality in China would benefit the business continuity of influencing firms. This would apply where water is a business input for a firm’s own production processes. As set out in the introduction, under current conditions, some major water resources fall below the standard required for industrial use. Improved water management in supplier firms would reduce the risk that a supplier’s production would be disrupted due to government enforcement measures. Dramatic crackdowns, or ‘strike hard campaigns’, a traditional enforcement method in China, can disrupt business across vast areas and large numbers of entities. In the environmental scenario, this occurred with the ‘fifteen small’ (*shiwu xiao qiye*) campaign in 1996, when China’s State Council ordered the closure of 57,330 small, highly polluting enterprises in 15 categories (Vermeer, 1998).

In some cases, factory shutdowns may disrupt even entirely foreign-based businesses that use Chinese businesses to perform crucial steps in their production chains. For example, a massive blue-green algae outbreak in mid-2007 in Lake Tai at Wuxi township led the Chinese Government temporarily to shut down the many wool-scouring plants discharging wastewater to the lake. This raised significant concerns in Australia over the fate of sales to China of Australian wool, 30 per cent of which is transported to Wuxi for scouring (Anon, 2007). Nor are these concerns over environment-related business disruption restricted to foreign firms — this risk was one reason cited by a Chinese automobile manufacturer for the practice of monitoring suppliers’ internal management programmes (Zhu *et al.*, 2007a). Given the increasing global attention being paid to China’s environmental performance, businesses that rely on potentially polluting Chinese industries can expect an increase in such crackdowns and associated business disruption, as China responds to



pressure to bring polluting industries into line. Ensuring that supplier firms are not affected by such shutdowns will therefore become even more important for influencing firms.

A second driver for ensuring that suppliers and partners have sound environmental management is a desire to reduce the business risks of being associated with polluting suppliers. Market scrutiny may result in negative publicity, such as has surrounded water pollution caused by Chinese joint ventures with global corporations such as Panasonic, Pepsi-Cola, and Nestle (Sun, 2006). Multinational corporations with operations in China receive particular public attention through dedicated 'watchdog' websites, such as China CSR Watch (<http://www.csrcsr.com/>). However, reputational risks are also considered by large Chinese businesses with international exposure. For example, Vincent Cheng, Chairman of Hong Kong Shanghai Banking Corporation Ltd. has stated that his company's focus on environmental responsibility 'makes good business sense because [these commitments] illustrate to all stakeholders that HSBC is a responsible company' (Global Compact, 2006: 18).

Finally, businesses that experience high market pressure for good environmental performance (particularly foreign businesses) may benefit from industry-wide environmental compliance. Placing greater pressure on competitors to match the environmental performance of influencing firms could theoretically act to minimize the competitive disadvantage experienced by the latter in terms of the contribution of environmental compliance measures to the cost of production.

Drivers for Target Firms

The business continuity and reputational considerations given above apply to large Chinese target firms as they do to foreign influencing firms. However, target firms, which either compete with or supply influencing firms face additional drivers for environmental improvements by virtue of this relationship. A significant additional driver for Chinese businesses to improve their environmental performance is the need to attract or maintain export contracts. Cumulatively, the volume and value of Chinese export goods rejected due to a failure to meet environmental standards is significant. From 1997 to 1999, the value of such rejected goods was estimated to be US\$20 billion (Zhu *et al.*, 2005). Recently, foreign countries have banned Chinese products including textiles, seafood, pig products, tea, poultry, and honey due to contamination caused in some cases by leaching of contaminants from industrial and electronic wastes into water and soil (Yang and Turner, 2007). The threat of products being rejected on environmental grounds appears to be achieving



results in environmental management terms. A study into the motivations of Chinese companies for obtaining certification under the ISO14001 environmental management system found that the prime motivator for the majority of respondents (52 per cent) was 'to enter the international market', followed by 'to improve management' (35 per cent), while improving the corporate image and gaining the confidence of customers were considered to be important benefits (Zeng *et al.*, 2005).

Chinese businesses also have an interest in overcoming the preference of some joint ventures or foreign direct investment enterprises in China to prefer to purchase materials from their home countries, due to the inability of Chinese goods to meet environmental standards (Zhu and Geng, 2001). One example of how improving environmental performance can turn this situation around is that of the State-owned Guitang Group, one of China's largest sugar producers, located in Guangxi Zhuang Autonomous Region. Its sugar operations form part of an eco-industrial complex, whereby wastes from each of several operations become raw materials for the next. This system has enabled the Guitang Group to dramatically reduce its wastewater emissions, in particular, while also reducing the sulphur content of its sugar. The Guitang Group has thereby attracted significant contracts with Coca-Cola, Pepsi-Cola (which both previously sourced sugar from other countries), and China's largest domestic beverage producer, Wahaha (Zhu and Cote, 2004).

This section has posited several drivers for influencing firms to apply pressure to Chinese businesses to improve their environmental management, and drivers for Chinese businesses to improve their environmental performance independent of pressure from influencing firms. The presence of these drivers suggests that there is a significant chance that pressure applied by influencing firms on target firms can translate into improved environmental management. Using empirical evidence collected from a range of recent studies, and in view of the suggested drivers, the next section sets out a number of ways for influencing firms successfully to apply their leverage to target firms, to add to preexisting drivers for change.

How Can Business Influence Environmental Management in China?

In late 2006, the Task Force on Environmental Governance of the China Council for International Cooperation on Environment and Development reported on major ways to improve China's environmental governance. Among other actions, it recommended 'engaging the business sector to take a more proactive role in environmental management'. In this context, it encouraged corporate social responsibility through environmental audits, annual environmental performance reporting, and 'partnerships and dialogues



among government, business, and non-governmental organisations (NGOs)' (Xue *et al.*, 2006: 8, 13). This section expands upon and explores the empirical support for three groups of related methods that influencing firms may use to improve the environmental management of target firms, namely: (1) using GSCM with their suppliers; (2) applying pressure or encouragement through domestic and international business groups and initiatives; and (3) indirectly increasing community information and expectations through publishing environmental performance reports.

Influencing Business Partners: Green Supply Chain Management

The most direct and relatively well-studied way by which firms may influence their suppliers' environmental management is by applying specific performance requirements. Influencing firms may focus on the following key areas of a Chinese supplier's environmental practices (with bracketed information providing examples in the water pollution context):

- the supplier's internal environmental management (eg, quantity and quality of wastewater produced);
- the supplier's external environmental practices, which may include environmentally influenced purchasing (eg, considering the water pollution impacts of its suppliers — ie, the influencing firm's second-tier suppliers);
- the extent to which the supplier engages in investment recovery, that is, recovering value from surplus or idle assets by, for example, recycling or re-selling (eg, re-using process water); and
- the extent to which the supplier uses eco-design, an approach to product design, which considers the whole-life environmental impacts of a product (eg, by designing a product so that it contains fewer materials which would contaminate water bodies as the product degrades after disposal).

These four elements are regarded as the main elements of GSCM (Zhu *et al.*, 2005). Empirical research provides support for a relationship between Chinese firms exposed to foreign firms, and take-up of GSCM. This suggests that GSCM can be an effective tool of influencing firms. A comprehensive study led by Qinghua Zhu examined the drivers for, and the nature of adoption of GSCM practices by, Chinese businesses in China. It surveyed 341 predominantly large manufacturing and processing businesses in Liaoning and Shandong Provinces, most of which had associations with foreign businesses, either as FDI enterprises, joint ventures, or suppliers. The research results, published in a series of papers, found that the electrical/electronic industry had higher levels of GSCM implementation, and achieved better environmental outcomes than the other surveyed industries. This difference was explained by



increased pressure and knowledge transfer due to that industry's long association with foreign buyers and partners (Zhu *et al.*, 2007b). Moreover, even in the automobile industry, which has historically had less international exposure, exports and sales to foreign customers were found to be the two most important drivers for adopting GSCM measures (Zhu and Sarkis, 2006). A further case study of a diesel engine plant suggested that its actions in eliminating wastewater emissions were driven by the need to improve its environmental image in light of new international competitors such as Volvo, Isuzu, Hitachi, and Hyundai (Zhu *et al.*, 2007a).

A major way to directly address the elements of GSCM given above is through agreements in relation to 'supplier codes of conduct', preferably supported by environmental audits. Such audits are intended to identify areas of potential improvement, or areas in breach of agreements. Experience in relation to labour conditions in the clothing sector suggests that passive tools such as contractual provisions or agreements to abide by a code of conduct, when used without checks or audits, may not translate into improvements in performance (Clarke, 2007). Bayer CropScience is one large firm, which uses a 'supplier qualification project' in China to check that its suppliers have acceptable health, safety, environment, and quality management standards, and as a vehicle for suggesting improvements and training (<http://www.sustainability2006.bayer.com/en/supplier-management.aspx>).

In determining the most effective way to apply GSCM to a Chinese supplier or partner, it is important to consider the risks associated with audits and implementing different elements of GSCM, and the characteristics of both the influencing and target firm. Auditing the environmental practices of overseas suppliers can carry potentially high costs for influencing firms, and there is a risk that this investment may be lost if suppliers change frequently (Anon, 2005). Influencing firms should also note that audit results may be influenced by limited access to suppliers' premises, poor training or understanding of auditors, or even corruption (Clarke, 2007). Influencing firms should therefore consider either assisting target firms to carry out an audit, or using external auditors or other quality assurance methods. The complexity and cost of the different GSCM elements being encouraged by the influencing firm are also relevant in considering whether target firms will require assistance for effective implementation. For example, while green purchasing has been shown to be relatively easy to implement in the Chinese business context, with no adverse economic impacts, eco-design is more involved due to the need to train workers and invest in supporting technology, which appears to result in short-term net economic costs (Zhu and Sarkis, 2007).

Influencing firms should also consider the expertise and managerial attitudes of target firms in determining a GSCM strategy. Studies have shown that adoption of GSCM by Chinese firms is positively related to senior and



middle-level management support, and organisational learning (shown by whether other programmes are being implemented at the target firm, eg, ISO14001 certification and Total Quality Management; Zhu *et al.*, 2008). Utilisation of anti-pollution technology, in particular, has been found to depend on training, ongoing costs, and the attitudes and experience of managers (Cole *et al.*, 2007). The most effective avenue for applying influence will also be affected by characteristics of the influencing firm. In what appears to be the only study of its kind, research into 12 global companies determined that four factors determined how a company could, in practical terms, organize responsible supply chains. These were: the diversity of the chain, its complexity, the extent of the company's ambition to reach performance standards, and the power of the company within the supply chain (Cramer, 2008). For example, in the case of a relatively small company with little power in the supply chain, or many suppliers, it may prove easier to use industry associations to coordinate audits of suppliers than directly carrying out 'private' audits (Cramer, 2008). In addition to these inherent characteristics of the influencing firm, the consistency of its overall approach to its suppliers is also important. For example, influencing firms should be careful not to compromise the ability of suppliers to improve production processes by simultaneously demanding lower prices (Clarke, 2007).

Influencing Through Business Groups

Influencing firms may also use industry associations, environment-oriented business groups, and global business initiatives to effect improvements in the environmental performance of target firms. Such associations provide a forum for sharing environmental knowledge or more actively encouraging improved environmental performance, including through pooling resources to coordinate supplier audits as suggested above. The research of Zhu and colleagues (see above) suggests that industrial professional groups and other relationships with domestic and foreign competitors are motivators for adopting better environmental performance. These factors were also found to lower the economic costs of adopting better environmental practices (Zhu and Sarkis, 2007). This suggests that involving such groups may help to address some of the risks to adoption of GSCM such as cost and experience, discussed above.

Relevant associations in this context include the non-profit business association Business for Social Responsibility, which promotes corporate social responsibility in China, and the China Business Council for Sustainable Development. The latter, established in 2003, aims to be the 'leading business advocate' for sustainable development, to assist in policy development, and to promote exchange and cooperation between Chinese and foreign enterprises on



environmental matters (<http://english.cbcsd.org.cn/cbcsd/objectives/index.shtml>). Its members include Chinese companies such as China Merchant Bank, Changling Chemical Refinery Ltd., and Hainan Airlines Group, and multinationals such as Rio Tinto, Alcoa Asia, BHP Billiton, and Bayer (China) (<http://english.cbcsd.org.cn/cbcsd/chm/index.shtml>). Similarly, the Business for Poverty Relief Alliance (BPRa), an alliance of large companies with Australian operations (including IAG, ANZ, Pfizer, and VISY) focuses on the Millennium Development Goals, one of which is increased access to safe drinking water. The BPRa promotes the principle of ensuring that suppliers do no harm to the communities in which they operate, and actively encourages its members to partner with 'sister companies' in developing countries to transfer skills (www.businessforpovertyrelief.com.au). General industry associations may also encourage environmental improvements. For example, in 2004, the Zhejiang Province Hotel Association requested that its 417 members cease using paper products produced by Asia Pulp & Paper Co. This was apparently based on allegations made in a Greenpeace report that the company conducted illegal logging in Yunnan Province and planted eucalyptus forests that used excessive amounts of water (Ellis, 2007).

Global programmes with an environmental focus represent another way potentially to improve environmental management in target firms. One notable global programme is the UN Global Compact (Compact), launched in July 2000. It is the world's largest global corporate citizenship initiative, with almost 5,000 company participants from over 120 countries. Participants voluntarily agree to align their operations with 10 governance principles. The Compact's three environmental principles require participants to support a precautionary approach to environmental challenges; undertake initiatives to promote greater environmental responsibility; and encourage the development and diffusion of environmentally friendly technologies (Principles 7–9, UN Global Compact, <http://www.globalcompact.org/AboutTheGC/TheTenPrinciples/index.html>). As at 29 January 2008, 144 Chinese participants were listed on the Compact database, including business associations, NGOs and firms from diverse sectors, from oil and gas, to telecommunications, to manufacturing (http://www.globalcompact.org/ParticipantsAndStakeholders/search_participant.html).

Twenty-three Chinese companies have lodged Communications on Progress in accordance with the Compact's reporting requirements. The available reports suggest, on face value, that some Chinese participants are undertaking actions in relation to water in accordance with their pledges under the Compact. For example:

- the Yunnan Hongyu Group Co. Ltd. (a large privately owned enterprise operating in education, high-technology, agriculture, and other sectors), reported in 2006 that its Yunnan Hongyu Lemon Processing Plant



- constructed a large new treatment plant to filter and recirculate wastewater to minimize water pollution (http://www.unglobalcompact.org/data/ungc_cops_resources/F9CADF60-6418-48FE-999E-4B774031B253/COP.pdf);
- the New Hope Group, one of China's largest private agribusiness enterprises, reported in 2007 that the company used standard contracts to require its animal suppliers to record production information, including water-related data. The Group has also assisted in constructing piped drinking water facilities in rural areas (http://www.unglobalcompact.org/data/ungc_cops_resources/B87E564D-A371-4CC7-9103-69455DDA32C8/COP.pdf, pages 48 and 86); and
 - the China Petroleum and Chemical Corporation (Sinopec) reported that in 2006, in pursuit of its goal of establishing 'clean production enterprises', it reduced the chemical oxygen demand (a measure of organic pollution) in its wastewater discharges by 6.3 per cent, and reduced its industrial water consumption by 4.9 per cent, compared to 2005. Unusually for Chinese companies (although perhaps not surprisingly, given its size), Sinopec also produces annual summary statistics on wastewater discharges per thousand RMB of production, and water consumed — in 2006 each of these was reportedly less than half of 2003 levels (http://www.globalcompact.org/data/ungc_cops_resources/E3AEFF30-E075-420A-8014-CEAB1242A592/COP.pdf, page 15).

A recent development in the context of the Global Compact is the *CEO Water Mandate* (Mandate). Thus far, 17 CEOs of large companies have endorsed the Mandate, including those of PepsiCo, Inc., Coca-Cola Company, Levi Strauss & Co., Unilever, and Dow Chemical (http://www.unglobalcompact.org/Issues/Environment/Water_sustainability/endorsingCEOs.html). Endorsing companies pledge to take action in six water-related areas: direct operations, supply chain and watershed management, collective action, public policy, community engagement, and transparency. The specific actions pledged go beyond the production and supplier issues covered by GSCM, extending to wider social action, such as building 'closer ties with civil society organisations', and working with public authorities 'to support the development of adequate water infrastructure'. Disappointingly, as at 2 January 2008, no Chinese firm had endorsed the Mandate. The Mandate provides a significant new opportunity for Chinese influencing firms to influence target firms in a comprehensive and structured way.

Influencing Through Environmental Performance Reporting

Influencing firms can also encourage improved environmental management in target firms in a more indirect way, by publishing details of their own



environmental performance — in other words, by leading by example. Corporate environmental reporting (CER) in China can best be described as embryonic, and little empirical research on the subject is available. However, a study by Rowe (2007) of 15 enterprises in Shanghai suggests that the main drivers for CER are reputation, gaining a competitive edge, responding to public ‘need-to-know’, corporate citizenship, perceptions of shareholder value, and assessment of executive performance. The study also suggests that firms will engage in CER if their competitors do so. On the other hand, a cultural preference for secrecy represents a key barrier to CER (Rowe, 2007).

While conducting CER alone may not improve a firm’s environmental performance, or that of its competitors, at minimum, CER increases the environmental information available to the Chinese public, investors, and the media. Indeed, studies have revealed a significant public appetite for environmental information in China (Li, 2007). CER therefore creates an opportunity to raise public expectations of acceptable corporate environmental performance in China, and potentially to heighten public, media or investor pressure for improved performance. Studies cited earlier in this paper suggest that public and market pressure are strong drivers for improved environmental performance. To maximize these benefits, reporting should be bilingual and readily available (eg, online). The Communications on Progress under the Global Compact programme present one method of effectively disseminating CER reports.

Although embryonic, CER by both foreign and Chinese firms is present and growing. Some multinational companies have embraced comprehensive stand-alone environmental reports for their Chinese operations. Alcoa, for example, publishes a stand-alone bilingual sustainability report for its operations in China, which details its environmental strategies, performance, and projects (http://www.alcoa.com/china/en/alcoa_china/China_Sustainability_Report_2006.pdf). Ford China has published such a report since 2003 ([http://www.ford.com/aboutford/microsites/sustainability-report-2006-07/documents/2006CSR_per cent20Report per cent20Final.pdf](http://www.ford.com/aboutford/microsites/sustainability-report-2006-07/documents/2006CSR_per%20Report_per%20Final.pdf)). Further, from a mere 2 CSR reports published in 2005, Chinese firms produced 13 in 2006, and 34 in the first half of 2007. Chinese reporting firms include China Mobile, China Ocean Shipping Group, State Grid Corporation of China, and Xi’an Jiefang Group (Financial Times Information, 2007).

This section has suggested three categories of tools that influencing firms may use either directly or indirectly to encourage their Chinese suppliers and competitors to improve their environmental management. A combination of these may effectively reinforce positive outcomes or address risks inherent in a particular tool. For example, an influencing firm could use a local industry association to encourage members to endorse the CEO Water Mandate, and to report on progress in achieving the relevant objective either publicly, or for



knowledge-sharing purposes within that association. A business group could also offer training in GSCM implementation for target firms. Alternatively, an environmental report could include details of a firm's membership of business sustainability groups, thereby benefiting the reporting firm's reputation and the groups' public exposure.

How Can Business Ally with Environmental Groups to Influence Environmental Outcomes?

Beyond acting alone or through business groups to improve the environmental management of target firms, influencing firms may also move outside the business sector to form alliances with non-profit civil society organisations sharing this aim. In China, such groups include registered and unregistered NGOs, government-organized NGOs and informal neighbourhood coalitions of residents (here collectively termed 'environmental groups'). An alliance between an environmental group and an influencing firm may take several forms, including a direct funding relationship, a formal partnership whereby the environmental group is actively involved in the business practices of the influencing firm, or an informal relationship through, for example, an influencing firm sharing a common director with an environmental group. This paper suggests that such alliances are likely to benefit both allies and the environment, since there is increasing evidence that environmental groups can effectively act to improve China's environmental situation.

Foreign businesses can benefit from relationships with environmental groups by gaining local knowledge and connections, increasing their social legitimacy and fending off the potential for adverse publicity (Turner, 2003). Environmental groups can gain technical and management capacity, and the ability to directly influence business. In some cases, a large and technically competent environmental group's expertise may help to fill gaps in a firm's environmental expertise (Turner, 2003). Although it is important not to overstate the influence of environmental groups in China, it is clear that they are taking advantage of a historically large 'political space for environmental activism' to open 'new channels for influencing environmental governance' (Lu, 2007: 65). The activities of environmental groups include augmenting government enforcement activities through litigation (Wang, 2006–07; Wang *et al.*, 2006–07), working with business groups in relation to business operations, using journalists to expose pollution problems (Lu, 2007; Tilt, 2007), and engaging in development-related activities with environmental benefits, such as building community sanitation works.

Although very much in their infancy, there are examples of direct funding and partnership arrangements between environmental groups and businesses in



China. For example, the Beijing-based NGO Institute for Environment and Development has worked on production issues and corporate responsibility with small and medium-sized enterprises in Liaoning and Sichuan (Turner, 2003). It also currently runs a corporate social responsibility project focusing on CSR training and research for Chinese businesses, including effective environmental reporting, and a programme called 'New Ventures', supported by Citi Group and Shell, which provides funding and expert advice for environmentally friendly business start-ups (<http://www.csr.ied.cn/>). Another partnership was formed between Friends of Nature and Beijing hotels to assist in the creation of an environmental certification programme in preparation for the Beijing Olympics (Turner, 2003).

At present, direct funding relationships with environmental groups appear more common in China than partnership arrangements. Shell, Manganese Metal, and Corning are examples of multinational companies funding local environmental NGOs (Economy, 2004). Shell (China) Ltd., among other things, sponsors indigenous Chinese NGOs Friends of Nature and Global Village, and supports a 3-year programme working with small and medium enterprises on biodiversity and renewable energy (http://www.shell.com/home/content/china-en/society_environment/dir_socialinvestment_1030.html, accessed 27 September 2007). The Alcoa Foundation partners with the China Forum of Environmental Journalists to raise the professional skills of environmental journalists and increase public awareness of environmental issues (Alcoa China, 2006). Ford Motor China, which annually awards environmental grants to Chinese NGOs, in 2007 supported a public ecological protection programme for the Yellow River, and lake ecology work in Yunnan (http://www.media.ford.com/article_display.cfm?article_id=27101). These forms of support from foreign businesses are vital to supporting public involvement in water quality activities — international organisations and corporations comprise about 80 per cent of donations to Chinese charities (Chen *et al.*, 2006).

Other more informal relationships between environmental groups and businesses or business groups in China may also prove beneficial in influencing the latter's environmental performance. For example, business leaders may also be board members of leading environmental NGOs. This occurs in the case of the environmentally proactive Zhejiang Province Hotel Association, which is led by a director of the NGO Friends of Nature (Lu, 2007). Although unorthodox, partnering with environmental groups in China represents a grassroots way to improve environmental outcomes, in ways that might otherwise be impossible. Environmental groups enable influencing firms to raise overall public awareness and indirectly to touch the environmental practices of smaller firms, or areas, that may be beyond the reach of enforcement agencies.



How Can the Government Encourage Business Influence for Environmental Improvement?

The focus of this paper has been the role that leading elements of the business sector can play in improving environmental outcomes in China, responding to non-regulatory drivers such as maintaining supply continuity and reputational factors. Nonetheless, it is important to note that governments (both Chinese and foreign) may further encourage influencing firms in this goal, using policy measures that support the methods outlined in this paper.

Some Chinese Government entities actively encourage good environmental management in leading Chinese firms. Some use private enterprise recognition systems for environmental performance, such as the Ministry of Chemical Engineering's list of 'National Advanced Enterprises for Environmental Protection' and 'National Excellence Enterprises for Environmental Protection' and Shenyang's Top Ten Worst Environment Enterprises and Best Environment Enterprises (OECD, 2006). A performance assessment system that includes environmental performance has been announced in relation to the managers of 154 SOEs and local government and Party officials (Fu, 2007a, b). In the relatively developed area of Wujin county in Jiangsu Province, local governments have established disclosure systems that publicize industrial firms' environmental performance using a five-color system (Zhang *et al.*, 2007). While these systems are too new to determine their motivating effect on the environmental performance of Chinese businesses, there is at least anecdotal evidence that such systems reinforce other methods of improving performance. For example, lawyers in the successful pollution case of *Zhang Changjian et al. v Pingnan Rongping Chemical Plant* believe that a SEPA listing of the defendant as one of China's top 55 polluters contributed to the plaintiffs' success (Wang, 2006–07). Further, such systems may encourage businesses to improve their performance by driving at their corporate image, which the research cited in this paper suggests is a key motivator for environmental responsibility measures in China.

Government policy measures in support of influencing firms should not be restricted to the Chinese Government, since foreign governments have an interest in improving China's environmental situation. For example, it has been suggested that poor water quality in China is a national security issue for the USA in terms of China's social stability and the potential impacts of refugees fleeing pollution (Bell, 2004; Cannon, 2006). The broader international community has also shown interest in issues of environmental compliance in China through joint studies undertaken between the Asian Environmental Compliance and Enforcement Network and the OECD (OECD, 2006). Financially, foreign countries assist China to resolve environmental issues through environmental loans from the World Bank,



Asian Development Bank, and bilateral aid cooperation arrangements (Vermeer, 1998). Through these measures, foreign governments assist the Chinese Government to address the challenges that it faces in enforcing environmental laws and providing adequate environmental infrastructure. It is suggested that another way in which foreign governments may effectively improve China's environmental situation is by assisting foreign influencing firms to take advantage of the influencing methods outlined in this paper, whether through environmental funding opportunities, GSCM training, raising awareness of the available options, or other forms of support.

Conclusion

In light of the profound institutional and regulatory problems facing China's environmental enforcement agencies, China must look beyond regulation as the only solution to its environmental problems. There is a need for urgent action. Influencing firms are capable of taking such action, and have the incentives to do so. Significant business benefits may also accrue to Chinese target firms, which accept this influence. This paper has attempted to ground the laudable aspirations of business leaders making the Shanghai Declaration in evidence from China that the actions urged by these leaders can effectively address one of China's worst environmental problems. This requires that leading firms with connections in China give careful consideration to their sphere of business influence. Influencing firms may encourage improved environmental performance of target firms through supply chain management of potential pollution impacts, through business groups aimed at environmental concerns, and by using public reporting. Further, supporting environmental groups that address water pollution presents a powerful, if unorthodox, alliance. It is hoped that through using methods such as those outlined in this paper, leading firms can help address this major economic, social, and environmental concern, while achieving benefits for themselves, their Chinese suppliers, and the Chinese environment and society at large.

About the author

Rebecca Nelson is a lawyer at the international law firm Blake Dawson, based in Melbourne. She practices primarily in the areas of environmental and water law, and is currently seconded to the Murray-Darling Basin Commission, which manages water and watersheds over more than 1 million square kilometers in eastern Australia. Rebecca holds degrees in Law and Environmental Engineering from the University of Melbourne. Her current research activities focus on watershed management and the regulation of surface and



groundwater quality and quantity in both developed and developing economies. She has authored papers for, among other publications, the *Melbourne Journal of International Law*, the *Environmental and Planning Law Journal*, the *Asia Pacific Journal of Environmental Law*, and the *Asian-Pacific Law and Policy Journal*.

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