

# IMPACT OF EMERGENCIES IN 2007: THREE CASES

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## IMPACT OF EMERGENCIES: FOOD SAFETY, PRODUCT QUALITY, AND CLIMATE CHANGE

The context of China's domestic rule of law development changed from 2006 to 2007, with a sharp rise in domestic and international concerns over food safety, product quality, and climate change. These concerns, and China's response to them, will both shape and be shaped by China's rule of law reforms. Because their impact on the course of rule of law in China is expected to be large, these developments are covered here in added detail.

### FOOD SAFETY

Domestic and international concerns over the safety of Chinese food products have increased significantly in the last five years due to unsafe food production and insufficient government oversight. The Ministry of Health (MOH) reported that 31,860 people suffered from food poisoning in 2006.<sup>1</sup> A recent survey found that more than 80 percent of Chinese consumers are now willing to pay a premium for food safety, up from 57 percent in 2005.<sup>2</sup> In a particularly notorious case from April 2004, 13 babies died and hundreds more suffered from serious malnutrition after consuming counterfeit and substandard milk powder in Anhui province.<sup>3</sup> In early 2007, pet food produced in China and containing wheat gluten contaminated with melamine reportedly caused the deaths of at least 16 cats and dogs in the United States, and sickened some 12,000 pets.<sup>4</sup> In June 2007, the U.S. Food and Drug Administration (U.S. FDA) restricted the import of five types of farm-raised fish and shrimp from China because they were found to contain unsafe antibiotics.<sup>5</sup>

#### *Unsafe Food Production: Regulatory Challenges*

With the transition to a market economy, many of China's food producers are small landholders or family workshops who rely on excessive amounts of fertilizers, pesticides, or veterinary drugs to maintain high production rates.<sup>6</sup> Water and soil used for this production may already be contaminated with metals from the poor disposal of industrial and electronic waste.<sup>7</sup> For example, up to 10 percent of farmland in China is thought to be polluted, and 12 million tons of grain is contaminated annually with heavy metals in the soil.<sup>8</sup> Inferior raw materials, the use of production chemicals unsuitable for food, and the lack of a safe infrastructure for food delivery and storage also contribute to substandard food products.<sup>9</sup>

#### *Insufficient Oversight: Regulatory Fragmentation*

Fragmentation of regulatory authority among 10 major government agencies makes it more difficult for the government to regulate the smaller family workshops that comprise the majority of China's food producers and processing centers.<sup>10</sup> [See Tables 1 and

2 for a list of government agencies involved in the oversight of food safety at the national and local level.] According to the State Council White Paper on Food Quality and Safety released in August 2007, China has 448,000 food production and processing enterprises, of which 353,000, or 78.8 percent, are small businesses or workshops with fewer than 10 employees.<sup>11</sup> Public officials established the State Food and Drug Administration (SFDA) in 2003 to consolidate oversight of food safety management, but resistance from other agencies who fear losing their revenue-generating ability has limited the transfer of power and responsibility to the SFDA. As a result, the SFDA and its local food and drug bureaus remain hampered in their ability to effectively regulate food safety and coordinate policy below the provincial level. The local bureaus remain beholden to local governments for their budgetary and personnel allocations, and approvals in promotions for their staff.<sup>12</sup> The central government has not instituted an effective regulatory system in rural areas that is in keeping with similar improvements in urban areas, including an increase in urban residents' awareness of their rights. Only some of the agencies have extended their presence down to the township and village level, and this regulatory void has led many counterfeiters to distribute their products in these areas, much to the worry of villagers.<sup>13</sup>

*Government Response to Domestic and International Food Safety Concerns*

China's international response is to reiterate its status as a developing country that had a late start in developing foundations for food and drug supervision, and to assert that it is the foreign media that exaggerate the extent of safety-related issues. Official Chinese figures report that 99 percent of its exports meet quality standards.<sup>14</sup> In late July and early August 2007, high-level officials from both the European Union and the United States met with Chinese public officials to discuss the quality and safety of China's exports and ways to improve inspections.<sup>15</sup> Both U.S. and Chinese media have reported back-and-forth blocking or banning of products from the other country.<sup>16</sup> While each country annually blocks food exports from the other country,<sup>17</sup> some of the current exports are probably being blocked in response to heightened attention on China's export safety issues.

*Domestic Response*

Domestically, central government reform of the food safety system has been in progress throughout the last five years, though largely in response to domestic food-related incidents. China's domestic response is aimed at increasing inspections and oversight of food producers; strengthening law enforcement, including increasing the punishment for violators; establishing a national recall system, national standards, and an emergency response mechanism; and strengthening international cooperation. To date, China has issued 14 national laws, 16 administrative regulations, 76 departmental regulations, and a five-year plan on food safety.<sup>18</sup> Within the past year, local governments have passed 129 regulations and other policy directives relating to food safety.

Since SFDA's creation in 2003, the central government has passed regulations on food quality monitoring and hygiene licensing, and strengthened the regulatory framework in local and rural areas. There are also periodic national campaigns against counterfeit and substandard products. For example, between 2006 and June 2007, inspectors from the General Administration for Quality Supervision, Inspection and Quarantine (AQSIQ) closed 180 food plants and discovered more than 23,000 food safety violations.<sup>19</sup> SFDA has also promoted the establishment of local food safety commissions to improve interagency coordination and cooperation.<sup>20</sup> As of August 28, 2007, food safety commissions have been established in all provinces, and in most major cities. In addition to a national informational Web site on food safety established by the SFDA, many of these provincial and municipal commissions have also established active informational Web sites.<sup>21</sup> In terms of rural areas, Zhejiang province, for example, established a rural consumer rights protection network to help residents seek redress from producers or sellers of counterfeit or substandard products.<sup>22</sup> A municipal bureau in Zhejiang noted several shortcomings with this network, however, including its lack of financial resources and influence, and the lack of incentives to conduct inspections.<sup>23</sup> By mid-2005, SFDA and the State Administration for Industry and Commerce (SAIC) had taken measures to boost information gathering in rural areas by recruiting volunteer food safety supervisors or coordinators to monitor food safety and the food production situation.<sup>24</sup>

The central government initiated the market access system in 2001, whereby food producers will be issued production licenses only when they have met the official standards for production conditions and facilities and the quality of foodstuffs.<sup>25</sup> This system, however, has undermined the government's objective to increase employment by forcing many of the smaller food producers to close.<sup>26</sup> Because implementation of this system has forced non-compliant smaller food producers to close, and because those producers contribute to local economic performance on which local officials are evaluated, the system must overcome political constraints that are not insignificant. The AQSIQ announced that it hopes to cut the number of these workshops in half by the end of 2009.<sup>27</sup>

After a series of domestic incidents in 2004, most notably the Anhui "fake baby milk powder" scandal, the State Council issued the Decision on Further Strengthening Food Safety Supervision in September 2004 to clarify the functions and responsibilities of the agencies with food safety oversight. Under this decision, the State Council divided food safety supervision into four "monitoring links," with each link managed by either the Ministry of Agriculture (MOA), AQSIQ, SAIC, or MOH. For example, MOA supervises the production of primary agricultural products; AQSIQ supervises the quality and safety of food processing, as well as imported and exported agricultural products and other foodstuffs; SAIC supervises food circulation and distribution; while MOH supervises the catering and restaurant industry. The SFDA is charged with the comprehensive supervision and coordination of food safety, and manages the investigation of major incidents and the punishment of those responsible for them.<sup>28</sup>

Even though the State Council has adopted measures to clarify the regulatory responsibilities of different agencies, recent food safety incidents reveal that there are still various regulatory loopholes that food producers and exporters can use to evade quality inspections. In terms of the pet food incident in 2007, AQSIQ noted that one of the companies who used melamine in its product bypassed quality checks by labeling its product as exports not subject to inspection.<sup>29</sup>

The current international spotlight has accelerated the issuance and implementation of regulations and other policy directives. For example, between June and July 2007, both President Hu Jintao and Premier Wen Jiabao pledged to improve food safety and product quality, which reflects high-level government attention to the issue.<sup>30</sup> On July 25, 2007, the State Council published draft regulations to strengthen the food safety oversight responsibilities of local governments, to increase the punishment for illegal activity, and to strengthen international cooperation efforts.<sup>31</sup> The meeting, chaired by Premier Wen Jiabao, also promised better safety checks and greater openness with quality problems.<sup>32</sup> In addition, the central government has established an emergency response mechanism among several ministries and a national food product tracking system.<sup>33</sup> At the local level, the Beijing Municipal People's Congress is considering the passage of regulations regarding food safety that offer producers and vendors incentives to voluntarily recall unsafe food, which is of special concern for Beijing during the 2008 Summer Olympics.<sup>34</sup> For example, Article 28 states that producers and vendors could receive lenient treatment or be exempted from penalties if they took the initiative to promptly recall unsafe food. The draft regulations also contain 18 articles regarding penalties for violations, including a maximum fine of 500,000 yuan (US\$66,556). Some policymakers, however, believe that these penalties are too lenient to act as an effective deterrent.<sup>35</sup>

In terms of policy objectives, the State Council publicly released its national Five-Year Plan on Food and Drug Safety (2006–2010) on June 5, 2007,<sup>36</sup> with the aim to implement strict controls to prevent farmers and producers from overusing pesticides and additives, to publish online lists of blacklisted food exporters and restrict their ability to export, to strengthen investigations of major food safety incidents, to upgrade standards, and to severely punish offenders.<sup>37</sup> The AQSIQ announced plans to implement the first national recall system by the end of 2007, which would contribute to building a food safety credibility system, if implemented effectively, and would fill a regulatory void in the national law.<sup>38</sup> The Standardization Administration of China and the AQSIQ also aim to standardize processes in the food industry by changing, abolishing, and amending standards so that the average duration of food standards will be reduced from 12 years to 4½ years by 2010.<sup>39</sup>

**Table 1.—Major National Government Departments With Food Safety Oversight Responsibilities**

(Note: Under some circumstances, other national-level departments not listed here may perform food safety oversight functions.)

Government Agency	Main Responsibility With Regard to Food Safety
State Food and Drug Administration (SFDA) <sup>40</sup>	Established in 2003, the SFDA is charged with comprehensive supervision over the safety management of food and health foods. Within the SFDA, there is a Department of Food Safety Coordination and a Department of Food Safety Supervision.
General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) <sup>41</sup>	AQSIQ is charged with the supervision, management, inspection, and quarantine of import and export products, including food, and their producers. AQSIQ has a few departments that directly focus on food safety, including the Bureau of Import and Export Food Safety and the Department of Supervision on Food Production.
Ministry of Health (MOH) <sup>42</sup>	MOH is charged with the supervision of food health, the formulation of food and cosmetics quality control protocols, and responsibility for its accreditation, as well as the supervision of the catering and restaurant industry.
Ministry of Agriculture (MOA) <sup>43</sup>	MOA is charged with the supervision of the production of primary agricultural products.
Ministry of Commerce (MOFCOM) <sup>44</sup>	MOFCOM is charged with researching and managing measures for the regulation of import and export commodities and compiling a catalogue of these regulations, organizing the implementation of an import and export quota plan, deciding on quota quantity, issuing licenses, and drafting and implementing import and export commodity quota tendering policies. In addition, it is charged with a broader mandate to formulate development strategies, guidelines, and policies that relate to domestic and international trade, and economic cooperation.
State Administration for Industry and Commerce (SAIC) <sup>45</sup>	SAIC is charged with the supervision of food circulation and distribution.

**Table 2.—Major Local-Level Government Departments With Food Safety Oversight Responsibilities**

(Based on analysis of Hangzhou City, Zhejiang province)<sup>46</sup>

Government Agency	Main Responsibility With Regard to Food Safety
Municipal Food and Drug Supervision Bureau	Responsible for the comprehensive supervision and management of food safety, and the investigation and prosecution of major incidents.
Municipal Party Committee Propaganda Department	Responsible for propaganda work related to food safety.
Municipal Party Committee Rural Affairs Office	Responsible for coordinating work with the Municipal Rural Affairs Office's related system to monitor food safety.
Municipal Development and Reform Commission	Responsible for carrying out the implementation of policies relating to the development of the food industry.
Municipal Economic Commission	Responsible for directing and managing the food production industry.
Municipal Education Bureau	Responsible for school food safety management and food safety and health education work.
Municipal Science and Technology Bureau	Responsible for the formulation and implementation of food safety science and technology plans.
Municipal Public Security Bureau	Responsible for investigating and prosecuting suspected criminals in cases involving the production or sale of counterfeit, poisonous, or harmful food products.
Municipal Supervision Bureau	Responsible for participating in the investigation, handling, inspection, supervision, and disciplining of those responsible for major food safety incidents.
Municipal Finance Bureau	Responsible for safeguarding expenses related to food safety monitoring work and the supervision of the use of funds.
Municipal Agricultural Bureau (Aquatic Product Division)	Responsible for the monitoring of the production of primary agricultural products. <sup>47</sup>
Municipal Forestry and Water Bureau	Responsible for providing guidance, coordination, supervision, and management on the use of terrestrial animals and wildlife, and forest products development plans.

**Table 2.—Major Local-Level Government Departments With Food Safety Oversight Responsibilities—Continued**

(Based on analysis of Hangzhou City, Zhejiang province)<sup>46</sup>

Government Agency	Main Responsibility With Regard to Food Safety
Municipal Trade Bureau	Responsible for the management of the livestock slaughtering industry and the supervision and management of slaughtering activities.
Municipal Grain Bureau	Responsible for management work to ensure the quality of grain that has been purchased, in storage, and in transit, and the safety of unprocessed food grains.
Municipal Culture, Radio, Television, and News Publishing Bureau <sup>48</sup>	Responsible for monitoring and discipline work related to the city's printing industry of packaging materials for food products.
Municipal Health Bureau	Responsible for the supervision of food consumption in the catering and restaurant industry. <sup>49</sup>
Municipal Environmental Protection Bureau	Responsible for the monitoring, supervision, and investigation of environmental pollution that affects food.
Municipal Industry and Commerce Bureau	Responsible for the supervision of the circulation and distribution of food. <sup>50</sup>
Municipal Quality Supervision Bureau	Responsible for the supervision of food product quality and safety during processing. <sup>51</sup>
Municipal City Management Law Enforcement Bureau	Responsible for the investigation and prosecution of unlicensed outdoor sellers and unlicensed outdoor breakfast stalls.
Municipal Legal Affairs Office	Responsible for the supervision and inspection of food safety work units in charge of law enforcement, and to ensure that they are administering their duties according to law.
Municipal Supply and Marketing Cooperative	Responsible for the supply and marketing system of agricultural products in wholesale markets, the production, processing, and circulation of agricultural products, and the management of the agricultural industry's means of production.

**Table 3.—Select Major Events and Government Food Safety Initiatives From 2003 to 2007**

Date	Initiative
September 2004	The State Council issued the Decision on Further Strengthening Food Safety Supervision.
September 23, 2004	SFDA issued its opinions regarding the implementation of the Decision of the State Council to Further Strengthen Food Safety.
December 2004	The Standardization Administration of China, the National Development and Reform Commission, MOA, MOFCOM, MOH, AQSIQ, SFDA, China National Light Industry Associations, and China General Chamber of Commerce jointly issued the National Food Standards Development Plan 2004–2005.
March 2007	Pet food incident: Pet food companies initiated a national recall in the United States after tainted wheat gluten was found in cat and dog food. The tainted wheat gluten was eventually linked to the deaths of at least 16 cats and dogs and the illnesses of some 12,000 pets.
May 7, 2007	Investigations revealed that two Chinese corporations, Xuzhou Anying Biologic Technology Development Co. and Binzhou Futian Biology Technology Co., are linked to the tainted wheat gluten.
May 10, 2007	The State Council vowed to crackdown on the food industry.
May 24, 2007	Toothpaste incident: The U.S. FDA announced that it would block imports of toothpaste from China due to reports elsewhere that diethylene glycol was found in toothpaste exported from China.
May 30, 2007	AQSIQ announced plans to establish a national food recall system.
June 5, 2007	The State Council publicly released its national 11th Five-Year Plan on Food and Drug Safety (2006–2010).
July 25, 2007	The State Council released the Special Regulations of the State Council on Intensifying Safety Control of Food and Other Products (No. 503 Decree of the State Council).
August 17, 2007	The Information Office of the State Council released a White Paper entitled “China’s Food Quality and Safety.”
End of 2007	AQSIQ plans to implement the first national food recall system.

**Table 4.—Number of Food Safety Laws and Regulations Issued By Month and Level of Government in China in 2007**

Month (in 2007)	National and Local Total	National	Local
January	17	3	14
February	12	2	10
March (Note: pet food incident first begins)	13	2	11
April	21	1	20
May (Note: toothpaste incident, and widespread reporting of poisonous cough medicine, first begins)	10	4	6
June	18	1	17
July	8	0	8
August	3	1	2
Total (as of August 28, 2007)	102	14	88

## NON-FOOD PRODUCT QUALITY

Drug and product safety have been a longstanding domestic issue of concern in China. Recent incidents involving poisonous diethylene glycol in toothpaste and cough medicine, including the reported deaths of at least 100 people in Panama, have captured international attention.<sup>52</sup> A survey by the General Administration of Quality Supervision, Inspection and Quarantine released in 2007 discovered that 23 percent of locally made toys failed to meet quality standards,<sup>53</sup> and at least 18 Chinese people died in 2006 when they ingested medicine containing diethylene glycol.<sup>54</sup> Since the 1980s, the Chinese central government has passed numerous national laws, regulations, and other legislative measures concerning drug and product safety.

Despite the number of laws and regulations in the area of drug and product safety,<sup>55</sup> domestic and international consumers continue to face the possibility of being harmed by products made in China without a standardized and transparent way to seek redress. For example, the Chinese government has repeatedly ignored or delayed responses to requests by foreign government officials to release the identity of companies that manufactured substandard drugs and to investigate these companies.<sup>56</sup> Without this information and greater transparency, it is difficult for domestic and international consumers to bring cases against these companies and to avoid future incidents. Rural consumers and consumers in developing countries, who may not have adequate access to resources or knowledge of their rights, are particularly hard hit. Scholars have noted an influx of counterfeit goods into rural parts of China in re-

cent years and a corresponding lack of bureaus at the local level who can address this influx.<sup>57</sup>

Chinese public officials have taken some steps in the past year to address concerns over drug and product safety, possibly in response to recent incidents and international pressure, although these steps are reactive measures that are insufficient to address the root causes of safety concerns. For example, the Supreme People's Court approved the execution of Zheng Xiaoyu, former Commissioner of the State Food and Drug Administration (SFDA), in July 2007 after he was charged with accepting bribes from pharmaceutical companies in exchange for approving drug production licenses.<sup>58</sup> Commentators have noted that Zheng's swift trial and execution were meant to serve as a warning to other officials,<sup>59</sup> but it remains to be seen if Zheng's execution will serve as an adequate deterrent and have a lasting impact, especially given the lack of mechanisms in place to consistently and effectively address official corruption and counterfeit products.

Amid recent incidents, the central government highlighted the forthcoming release of a revised drug registration regulation and its funding pledge of 8.8 billion yuan (US\$1.1 billion), which was first approved in 2005 as part of the government's 11th Five-Year Plan (2006–2010). The regulations charge the SFDA with the responsibility to fine companies that submit counterfeit drug samples or inaccurate information, to establish a panel system to review drug approvals, to raise approval standards, and to disclose on the Internet the name of the official reviewing a drug application and its stage in the submission process.<sup>60</sup> The SFDA and corresponding bureaus will use the 8.8 billion yuan to improve infrastructure, such as the renovation or building of inspection and testing facilities. The central government will contribute 71 percent of the funds, with the remainder coming from local governments.<sup>61</sup>

Despite these initiatives, serious challenges remain, including local government implementation of legislative measures, official corruption, and inadequate attempts to address the counterfeiting of products. Overall, enforcement remains hindered by China's existing regulatory structure, such as local food and drug safety bureaus that are beholden to local governments for their budgetary and personnel allocations, and national agencies providing these bureaus with non-binding and often unfunded policy directives for implementation.<sup>62</sup> Local government officials, whose promotions are largely based on their ability to promote economic growth, have more incentive to allow the counterfeiting of products than to effectively regulate drug and product safety.<sup>63</sup> In addition, regulatory loopholes hamper the government's oversight ability, with dangerous consequences for consumers. For example, in the case involving at least 100 reported deaths in Panama due to the use of diethylene glycol in cough medicine, the Ministry of Foreign Affairs noted that neither the chemical company that made the cough medicine, nor the state-owned company that exported it, fell under the regulatory supervision of the SFDA.<sup>64</sup> These companies were not classified as pharmaceutical production or sales businesses. In the case of the chemical company, it classified itself as making chemical industry raw material and was not licensed to make pharmaceutical products nor subject to inspections under the SFDA.<sup>65</sup>

Limited civil society activity, as well as continued official harassment of whistleblowers, place additional limitations on the government's ability to effectively regulate the drug and product industries and ensure consumer safety. Currently, there is a lack of effective consumer protection laws and very few consumer associations or other civil society groups to help monitor the quality and safety of consumer products.<sup>66</sup> Instead, public officials continue to punish those who try to notify others, via the Internet or through other forms of communication, of collusion between food and drug agencies and industry, or of unsafe or unconscionable industry practices.<sup>67</sup>

In 2006, law enforcement officials in Haikou city, Hainan province, detained Zhang Zhijian for nine months for reposting an anonymously written essay on the Internet that detailed collusion between high-level officials in the SFDA and a pharmaceutical company.<sup>68</sup> Public security officials detained him on "suspicion of damaging company reputation" after the company filed a complaint. He was finally released after investigations revealed that the accusations of collusion and corruption were true.<sup>69</sup> As a result of his detention, Zhang lost his job and reported difficulty finding other employment.<sup>70</sup> On March 26, 2007, Zhang filed a lawsuit with a Haikou city court seeking state compensation for wrongful detention and damage to reputation.<sup>71</sup> The court awarded Zhang 24,000 yuan (US\$3,190) on July 20, 2007.<sup>72</sup>

In another case, Zhou Huanxi posted a story online in March 2007 that described how the company she worked for made substandard tonic for pregnant women.<sup>73</sup> When she initially tried to inform public officials in 2002, her employer fired her from her job and she was imprisoned for three years and six months on charges of extortion.<sup>74</sup> Zhou was released in November 2005.<sup>75</sup> Although there are provisions in the State Compensation Law that allow for individuals to sue the government for wrongful punishment, these provisions are not traditionally thought of as a whistleblower protection law since they only apply after the fact, nor are there other whistleblower protection laws currently in place.<sup>76</sup>

#### CLIMATE CHANGE

Some Chinese government officials reportedly have made statements that recognize that human activity worldwide is contributing to greenhouse gas (GHG) emissions. For example, China's first National Report on Climate Change, released in December 2006 by the Ministry of Science and Technology, concludes that "greenhouse gas (GHG) emissions from human activity contribute to increasingly serious global climate change problem."<sup>77</sup> China's domestic stance regarding climate change, however, is quite different from its stance in international forums. Internationally, China assumes the posture of a developing country, which drives much of its behavior with respect to the issue of climate change in the international context. Since 2002, China has announced domestic goals and initiated reforms that are aimed at energy security and China's economic development strategies, but these policies can also help to combat climate change if implemented properly at the local level. There is, however, no current policy that directly addresses China's heavy reliance on coal, and current measures are not

enough to stop emissions from increasing significantly. It is unlikely that China will accept a mandatory reduction in its GHG emissions.<sup>78</sup>

The Chinese government changed its stance on climate change in 2002 as China's energy consumption growth surpassed its economic growth for the first time in modern history.<sup>79</sup> China could no longer claim that it was not contributing to the severity of global GHG emissions as it pursued rapid industrialization. President Hu Jintao's administration came into power at the same time and pledged to move away from the "economic growth at all costs" stance of his predecessor to a policy approach that, in Hu's words, called for "scientific development" and a "harmonious society" with a focus on conservation and sustainable development ("circular economy").<sup>80</sup> These two pledges reflect concerted efforts to combat climate change, and public officials have taken some steps to mitigate and adapt to climate change by adopting laws and other policy initiatives and by establishing a National Coordination Committee. Public officials could achieve more, but they are hampered by ineffective administrative and market incentives that fail to encourage local compliance, and by limitations on civil society activity.

Since 2002, China's annual GHG emissions have also increased rapidly due to strong economic growth and an increasing demand for energy.<sup>81</sup> The International Energy Agency has projected that China will surpass the United States in annual GHG emissions by 2010, and possibly as early as 2007.<sup>82</sup> In June 2007, the Netherlands Environmental Assessment Agency noted that China's emissions for 2006 surpassed the emissions from the United States in that year.<sup>83</sup> Although China's per capita GHG emissions and cumulative GHG emissions are still comparatively low,<sup>84</sup> its increasing share of global GHG emissions may be a trend that cannot be significantly reduced or reversed without governmental intervention.

#### *China's International Response to Climate Change*

China ratified the UN Framework Convention on Climate Change in 1993 and the Kyoto Protocol (Protocol) in 2002.<sup>85</sup> As a non-Annex 1 (developing) country, China has no binding emissions limits under the Protocol's first commitment period from 2008 to 2012. China is, however, an active participant in the Clean Development Mechanism established under the Protocol, which allows developed countries to use emissions credits for reductions in developing countries toward their own Protocol targets.<sup>86</sup> Despite China's increasing share of global GHG emissions, its current position as a developing country translates into "common but differentiated" responsibilities that are based more on its level of historical responsibility for the problem, its level of economic development, and its capability to act on the problem, than on its current annual GHG emissions rate.<sup>87</sup> The Chinese government continues to welcome international cooperation, and bilateral and multilateral exchanges with the United States and other countries in the form of the Asia-Pacific Partnership on Clean Development and Climate and the China-EU Partnership, that help to promote clean energy production projects and technology transfer.<sup>88</sup>

*China's Domestic Response to Climate Change*

Motivated by energy security concerns and its economic growth targets, the Chinese government has announced domestic goals and initiated numerous reforms which, if effectively implemented, could help to combat climate change by conserving energy, reducing pollutant emissions, and increasing the use of renewable energy. The government has also enacted laws that relate to energy conservation, including the Energy Conservation Law (1997) and the National Renewable Energy Law (2005). There is, however, no policy that directly addresses China's heavy reliance on coal, and current measures are not enough to stop such emissions from increasing significantly.<sup>89</sup>

In its 11th Five-Year Plan (2006–2010), the central government has pledged to “conserve energy and reduce pollution,” but has failed to meet goals set forth in the plan.<sup>90</sup> In 2006, China's energy consumption per unit of GDP decreased by 1.2 percent despite a stated goal of 4 percent.<sup>91</sup> Similarly, air and water pollutant levels in 2006 increased by 1.8 and 1.2 percent, respectively, despite the government's stated goal of reducing pollutants by 2 percent.<sup>92</sup> The failure to meet such goals may indicate that administrative and market-oriented incentives in place at the local level are inadequate to persuade local officials to adopt more sustainable forms of economic growth.<sup>93</sup>

Over the past year, the government published reports that suggest a high level of government attention to the issue of climate change, but it remains to be seen how vigorous local implementation will be. The central government released its first National Assessment Report on Climate Change in December 2006,<sup>94</sup> and a General Work Plan for Energy Conservation and Pollutant Discharge Reduction on June 4, 2007, that outlines how China intends to address climate change over the next five years.<sup>95</sup> The plan's release was delayed due to reported differences in official views at the national and local levels, but it was eventually published ahead of the opening of the G8 summit on June 6, 2007. Specifically, the plan establishes the formation of regional administration systems to better coordinate interagency work on climate change, energy efficiency, and renewable energy.<sup>96</sup> The plan also establishes a “National Leading Group on Climate Change,” headed by Premier Wen Jiabao. In addition, there have been increases in the level of staffing for key agencies such as the statistics bureaus, which can strengthen data collection so as to better inform policy decisions.<sup>97</sup>

*Effects of Climate Change and Expanding the Debate on Climate Change*

The effects of China's heavy reliance on coal, the resultant pollution and GHG emissions, and policies to address these issues, have serious implications for domestic and international citizens' public health, and the global environment and economy. For example, air pollutants from China have been detected on the west coast of the United States, and sand storms that originate in China have reached its Asian neighbors.<sup>98</sup> Energy conservation and pollution reduction, and policies that address these issues, are thus also quality of life and public safety issues, exacerbated by official inac-

tion or complicity that results in perceived harm. In addition, access to energy in rural areas, the contribution that energy security can provide in the development of the rule of law and government transparency, and the still preliminary level of engagement of domestic civil society organizations in work on climate change are examples of additional issues that are not part of the traditional debate on climate change.

Policy approaches that attempt to control large amounts of emissions from a group of sources face greater challenges and are not as well-developed in China as they are elsewhere. In one such approach the government mandates an overall cap, or the maximum amount of emissions per compliance period, and lets sources, such as companies, decide how to use their individual emissions allowances. Under this system, known as cap and trade, a company might decide to use pollution control technology or more efficient energy sources in order to not exceed its cap, or purchase additional allowances from other companies if the company believes it will exceed its cap. Companies able to lower their emissions below their allotted allowance can have the difference credited for later use or sell these credits to another company for a profit.<sup>99</sup> This approach has been used in the United States with regard to sulfur dioxide emissions.<sup>100</sup> In part because some plants increase levels of pollutants and receive credits for reducing them later, cap and trade systems are not foolproof. There is also concern that emissions allowances for certain practices, such as agricultural offsets, may be overvalued, without a way to properly measure and verify if this is indeed the case.<sup>101</sup>

Given China's current information collection system, level of transparency, and accountability, it is not clear whether a system that depends on these factors can be implemented in a manner that effectively reduces carbon dioxide and other greenhouse gases. Challenges that confront effective implementation in China include the government's inability to accurately and consistently collect data on emissions, which is essential to establishing and maintaining an effective program.<sup>102</sup> In addition, the government must have accountability mechanisms in place that allow for the accurate reporting of emissions, and the rigorous and consistent enforcement of penalties for fraud and noncompliance. Transparency in areas such as public access to source-level emissions and allowance data are also important.<sup>103</sup> The accuracy and consistency of information, accountability, and transparency are all issues associated with persistent institutional challenges in China. [See Section II—Freedom of Expression and Section II—Rights of Criminal Suspects and Defendants.] Other options exist that may help to reduce greenhouse gas emissions. Some that are being attempted or discussed in other countries as well as in China include: implementing a tax on carbon emissions, regulatory measures that require industries to use the cleanest available technologies, policies that promote research and development into clean technologies, and policy changes that favor non-carbon emitting technologies such as nuclear or wind power generation.

## Endnotes

<sup>1</sup>Ministry of Health (Online), Causes of Food Poisoning in 2006, Chinese Health Statistical Digest, 1 June 07. In 2003, the Ministry of Health reported that there were 1,481 cases, which affected 29,600 people, with 262 deaths. Ministry of Health (Online), Causes of Food Poisoning and Causes in 2003, Chinese Health Statistical Digest, 21 May 04.

<sup>2</sup>"Fixing China's Food Safety Issues Will Require a \$100 Billion Investment, According to New A.T. Kearney Research," A.T. Kearney, 26 June 07; Audra Ang, "China Calls for More Testing of Exports," Associated Press (Online), 6 June 07.

<sup>3</sup>Waikeung Tam and Dali Yang, "Food Safety and the Development of Regulatory Institutions in China," 29 Asian Perspective 6, 7 (2005); Drew Thompson, "China's Food Safety Crisis: A Challenge to Global Health Governance," 7 China Brief 8, 8 (2007).

<sup>4</sup>David Barboza, "Some Suspect Chemical Mix in Pet Food," New York Times (Online), 12 April 07.

<sup>5</sup>Frank Ahrens, "FDA Halts Imports of Some Chinese Seafood," Washington Post (Online), 29 June 07.

<sup>6</sup>Yang Yang and Jennifer L. Turner, "Food Safety in China," China Environmental Forum, Woodrow Wilson Center for International Scholars, 28 July 07.

<sup>7</sup>Ibid.

<sup>8</sup>Elizabeth C. Economy, "The Great Leap Backward?," Foreign Affairs (Online), September/October 2007, 2.

<sup>9</sup>Yang Yang and Turner, "Food Safety in China."

<sup>10</sup>Zhao Huanxin, "China's Food Safety Beset by Challenges," China Daily (Online), 11 July 07; Thompson, "China's Food Safety Crisis: A Challenge to Global Health Governance," 8.

<sup>11</sup>State Council Information Office (Online), White Paper on China's Food Quality and Safety, 17 August 07, 1.

<sup>12</sup>Waikeung Tam and Dali Yang, "Food Safety and the Development of Regulatory Institutions," 10–13.

<sup>13</sup>For example, a 2003 survey by the China Consumers Association reports that villagers are most worried about product quality and substandard and counterfeit products. Ibid., 21–22.

<sup>14</sup>Yan Jiangying, a representative from the SFDA notes that, "As a developing country, China's food and drug supervision work began late with weak foundations. Therefore, the situation is not very satisfactory." Zhao Huanxin, "China's Food Safety Beset by Challenges;" David Barboza and Walt Bogdanich, "China Shuts 3 Companies over Safety of Products," New York Times (Online), 21 July 07; Zhang Pinghui, "Focus To Be on Harmful Drugs, Chemicals in Feed," South China Morning Post (Online), 26 July 07.

<sup>15</sup>Barboza and Bogdanich, "China Shuts 3 Companies over Safety of Products."

<sup>16</sup>Ibid.; David Barboza, "Chinese Regulators Find Widespread Abuses in Food Industry," International Herald Tribune (Online), 27 June 07.

<sup>17</sup>Andrew Martin and Griff Palmer, "China Not Sole Source of Dubious Food," New York Times (Online), 13 July 07.

<sup>18</sup>CECC Staff Search. See also, Hu Ying, "China Struggles To Digest Food Safety Laws," Asia Times (Online), 28 August 07.

<sup>19</sup>David Barboza, "Another Consumer Product Disaster in China: Exploding Mobile Phone Batteries," International Herald Tribune (Online), 6 July 07; Yang Yang and Turner, "Food Safety in China," 4.

<sup>20</sup>Waikeung Tam and Dali Yang, "Food Safety and the Development of Regulatory Institutions" 31.

<sup>21</sup>For example, see the Zhejiang province Food Safety Information Net: <http://www.zjfs.gov.cn/>; the Shaanxi province Food Safety Information Net: <http://www.sxfs.gov.cn/>; and the Guangzhou city Food Safety Information Net: <http://www.gzfood.net>. Ibid., 31.

<sup>22</sup>Zhejiang province, through the provincial- and local-level industry and commerce bureaus, established a rural consumer rights protection network, including consumer associations and consumer rights protection stations. Among administrative villages that lacked an association or a station, the industry and commerce bureau would cooperate with the township- or county-level government to establish consumer rights protection points that designated personnel to mediate disputes or complaints that were filed by rural consumers. State Administration of Industry and Commerce Government Affairs Information (Online), "Problems with the Rural Consumer Rights Protection Network, and Countermeasures" [Nongcun xiaofei weiquan jiandu wangluo jianshe cunzai de wenti ji duice (zhejiang sheng ningbo shi gongshang ju)], 7 July 06; Waikeung Tam and Dali Yang, "Food Safety and the Development of Regulatory Institutions," 34.

<sup>23</sup>Zhejiang Rural Citizens Do Not Have To Leave the Village In Order to Have Their Rights Safeguarded" [Zhejiang nongmin weiquan buyong chu cun], Zhejiang Business (Online), 15 December 05.

<sup>24</sup>Waikeung Tam and Dali Yang, "Food Safety and the Development of Regulatory Institutions," 34.

<sup>25</sup>Ibid., 27; Zhao Huanxin, "China's Food Safety Beset by Challenges;" State Council Information Office, White Paper on China's Food Quality and Safety, 4.

<sup>26</sup>Waikeung Tam and Dali Yang, "Food Safety and the Development of Regulatory Institutions," 27.

<sup>27</sup>Ibid.; Zhao Huanxin, "China's Food Safety Beset by Challenges."

<sup>28</sup>State Council Information Office, White Paper on China's Food Quality and Safety, 4.

<sup>29</sup>Don Lee and Abigail Goldman, "Gluten Factory Had a Toxic History," Los Angeles Times (Online), 9 May 07.

<sup>30</sup>"Premier: Food Safety a Top Priority," China Daily (Online), 26 July 07; "President Hu Stresses the Importance of Farm Produce Safety," Xinhua (Online), 25 April 07.

<sup>31</sup>“China To Tighten Control of Antibiotics in Seafood,” Reuters (Online), 25 July 07; “China Strengthening Food Rules,” Associated Press, reprinted in China Daily (Online), 25 July 07.

<sup>32</sup>“China Strengthening Food Rules,” Associated Press.

<sup>33</sup>“Amendments to Food Safety Standards Completed,” China Daily (Online), 4 July 07; “Premier: Food Safety a Top Priority,” China Daily.

<sup>34</sup>“China To Tighten Control of Antibiotics in Seafood,” Reuters.

<sup>35</sup>Ibid.

<sup>36</sup>The Plan was approved by the State Council in April 2007. “China Vows Better Food Safety,” Wall Street Journal (Online), 7 June 07; “China To Fight Unsafe Food and Medicine,” Reuters, reprinted in Toronto Star (Online), 5 June 07; “Former Head of China’s Drug Watchdog Executed,” Xinhua (Online), 10 July 07; “Amendments to Food Safety Standards Completed,” China Daily.

<sup>37</sup>Ibid.; “China To Tighten Control of Antibiotics in Seafood,” Reuters; Zhao Huanxin, “China’s Food Safety Beset by Challenges.”

<sup>38</sup>Beijing municipal government has already made similar provisions in local food safety regulations. Waikung Tam and Dali Yang, “Food Safety and the Development of Regulatory Institutions,” 32–33.

<sup>39</sup>“Amendments to Food Safety Standards Completed,” China Daily.

<sup>40</sup>State Food and Drug Administration (Online), “Main Responsibilities,” last visited 27 August 07.

<sup>41</sup>General Administration of Quality Supervision, Inspection and Quarantine (Online), “General [sic] Administration of Quality Supervision, Inspection and Quarantine of the People’s Republic of China,” last visited 27 August 07.

<sup>42</sup>PRC Central People’s Government (Online), “Ministry of Health,” last visited 30 August 07; Information Office of the State Council, White Paper on China’s Food Quality and Safety, 4.

<sup>43</sup>Information Office of the State Council, White Paper on China’s Food Quality and Safety, 3.

<sup>44</sup>Ministry of Commerce (Online), “Main Mandate of the Ministry of Commerce,” last visited 30 August 07.

<sup>45</sup>State Council Information Office, White Paper on China’s Food Quality and Safety, 3–4.

<sup>46</sup>Hangzhou Municipal Food Safety Commission (Online), “Hangzhou Municipal Food Safety Commission Public Notice,” 15 March 05.

<sup>47</sup>One of the four “monitoring links” set forth in the Decision on Further Strengthening Food Safety Supervision, issued by the State Council in 2004. State Council Information Office, White Paper on China’s Food Quality and Safety, 3.

<sup>48</sup>The Hangzhou Municipal Culture, Radio, Television, and News Publishing Bureau is a combination of three bureaus: the culture bureau, the radio and television bureau, and the news publishing bureau. Hangzhou Municipal Culture, Radio, Television, and News Publishing Bureau (Online), “Hangzhou Municipal Culture, Radio, Television, and News Publishing Bureau General Situation,” last visited 28 August 07.

<sup>49</sup>One of the four “monitoring links” set forth in the Decision on Further Strengthening Food Safety Supervision, issued by the State Council in 2004. State Council Information Office, White Paper on China’s Food Quality and Safety, 4.

<sup>50</sup>Ibid., 3.

<sup>51</sup>Ibid.

<sup>52</sup>“Key Dates in China Export Scares,” Wall Street Journal (Online), 7 August 07. Toothpaste exported from China containing diethylene glycol has been confiscated or banned in the United States, Singapore, Panama, the Dominican Republic, South Africa, Australia, Nicaragua, Greece, and Poland. The New York Times reports the figure of at least 100 deaths from the use of cough medicine containing diethylene glycol in Panama. Jake Hooker, “Chinese Company Linked to Deaths Wasn’t Licensed,” New York Times (Online), 9 May 07.

<sup>53</sup>Andrew Batson, “China’s Safety Failures Include Toys Sold at Home,” Wall Street Journal (Online), 2 July 07.

<sup>54</sup>Walt Bogdanich, “F.D.A. Tracked Poisoned Drugs, but Trail Went Cold in China,” New York Times (Online), 19 June 07.

<sup>55</sup>A U.S. expert has noted that in the area of packaging standards and pricing alone, China has more than 30 laws and regulations. “Can China Restore Its Exports Image?,” Financial Times (Online), 21 August 07.

<sup>56</sup>Bogdanich, “F.D.A. Tracked Poisoned Drugs, but Trail Went Cold in China;” David Barboza, “China Yields to Inquiry on Pet Food,” New York Times (Online), 24 April 07.

<sup>57</sup>For example, a 2003 China Consumers Association survey found that villagers are most concerned about product quality and substandard and counterfeit goods. Waikung Tam and Dali Yang, “Food Safety and the Development of Regulatory Institutions,” 21–22.

<sup>58</sup>“Former Head of China’s Drug Watchdog Executed,” Xinhua; Geoff Dyer, “China Executes Ex-Food Safety Chief,” Financial Times (Online), 10 July 07.

<sup>59</sup>Ibid.

<sup>60</sup>Josephine Ma, “Drug Makers Face Higher Standards,” South China Morning Post (Online), 12 July 07.

<sup>61</sup>Zhuang Pinghui, “8.8b To Be Spent on Food and Drug Safety,” South China Morning Post (Online), 8 August 07.

<sup>62</sup>Waikung Tam and Dali Yang, “Food Safety and the Development of Regulatory Institutions,” 10–13.

<sup>63</sup> Ibid.

<sup>64</sup> The New York Times reports the figure of at least 100 deaths from the use of cough medicine containing diethylene glycol in Panama. Hooker, "Chinese Company Linked to Deaths Wasn't Licensed;" "China Says Fatal Drug Outside Scope of Regulators," Reuters (Online), 8 May 07.

<sup>65</sup> Ibid.

<sup>66</sup> "Can China Restore Its Exports Image?," Financial Times; Thompson, "China's Food Safety Crisis: A Challenge to Global Health Governance," 9.

<sup>67</sup> Ariana Eunung Cha, "Safety Falters as Chinese Quiet Those Who Cry Foul," Washington Post (Online), 19 July 07.

<sup>68</sup> Ibid.; "Reposting 'Collusion Between Government and Pharmaceutical Company' Essay Ruined My Life" [Zhuanzai 'guanyaogoujie' wangwen daluan wo de yisheng], Beijing News (Online), 9 April 07.

<sup>69</sup> The essay helped in part to initiate investigations against Zheng Xiaoyu, former Commissioner of the SFDA, and Cao Wenzhuang, former director of SFDA's drug registration department. Cha, "Safety Falters as Chinese Quiet Those Who Cry Foul."

<sup>70</sup> Ibid.

<sup>71</sup> "Reposting 'Collusion Between Government and Pharmaceutical Company' Essay Ruined My Life," Beijing News.

<sup>72</sup> "[Zhang Zhijian] Who Was Formerly Wrongfully Detained by Law Enforcement Officials, Received 24,000 Yuan in Compensation Yesterday" [Ceng bei sifa jiguan cuowu jiya 9 ge duoyue, zuori huo pei 2.4 wan], Southern Metropolitan Daily (Online), 21 July 07.

<sup>73</sup> Cha, "Safety Falters as Chinese Quiet Those Who Cry Foul."

<sup>74</sup> Ibid.

<sup>75</sup> Ibid.

<sup>76</sup> PRC State Compensation Law, enacted 12 May 94, art. 3.

<sup>77</sup> The exact language is "Renlei huodong paifang de wenshi qiti dao zhi yuelai yue yanzhong de quanqiu qihou bianhua wenti." Ministry of Science and Technology (Online), "MOST, Six Other Agencies Release China's Climate Change National Assessment Report" [Keji bu deng liu buwei lianhe fabu "qihou bianhua guojia pinggu baogao"], 26 December 06; Ling Li, "China Releases First National Report on Climate Change," China Watch (Online), 11 January 07.

<sup>78</sup> For example, if China decides to accept classification as a developed country, or if there is a diversification in the types of commitments that countries can accept that go beyond the developing versus developed country framework. Briefing on China, the Economy, and Global Warming, Panel hosted by the U.S. House of Representatives Committee on Foreign Affairs and National Environmental Trust, 23 July 07.

<sup>79</sup> Ibid.

<sup>80</sup> CECC, 2004 Annual Report, 5 October 04, 1; "China To Enact Law on Circular Economy," Xinhua (Online), 26 August 07.

<sup>81</sup> Briefing on China, the Economy, and Global Warming, Panel hosted by the U.S. House of Representatives Committee on Foreign Affairs and National Environmental Trust, 23 July 07.

<sup>82</sup> John Vidal, "China Could Overtake US as Biggest Emissions Culprit by November," The Guardian (Online), 25 April 07.

<sup>83</sup> Ibid.

<sup>84</sup> Briefing on China, the Economy, and Global Warming.

<sup>85</sup> United Nations Framework Convention on Climate Change (Online), Status of Ratification, 11 April 07.

<sup>86</sup> Briefing on China, the Economy, and Global Warming.

<sup>87</sup> National Development and Reform Commission (Online), The People's Republic of China National Climate Change Program, June 2007, 2; Pew Center on Global Climate Change (Online), "Climate Change Mitigation Measures in the People's Republic of China," International Brief 1, April 2007.

<sup>88</sup> Pew Center on Global Climate Change, "Climate Change Mitigation Measures in the People's Republic of China."

<sup>89</sup> Briefing on China, the Economy, and Global Warming.

<sup>90</sup> Pew Center on Global Climate Change, "Climate Change Mitigation Measures in the People's Republic of China."

<sup>91</sup> Ting Shi, "Wen Warns of Grim Environmental Challenge," South China Morning Post (Online), 10 July 07. China had an increase in energy consumption per unit of GDP for the years 2003 to 2005. Briefing on China, the Economy, and Global Warming.

<sup>92</sup> "Question Marks over China's Climate Commitment," Agence France-Presse (Online), 6 May 07; U.S.-Chinese Economic and Security Review Commission, China's Energy Consumption and Opportunities for U.S.-China Cooperation to Address the Effects of China's Energy Use, 14 June 07, Testimony of Elizabeth Economy, C.V. Starr Senior Fellow and Director, Asia Studies, Council on Foreign Relations.

<sup>93</sup> Fu Jing, "Local Gov'ts 'Ignoring' Green Model," China Daily (Online), 23 July 07.

<sup>94</sup> Ling Li, "China Releases First National Report on Climate Change."

<sup>95</sup> National Development and Reform Commission, The People's Republic of China National Climate Change Program; Daniel Griffiths, "China's Mixed Messages on Climate," BBC (Online), 7 May 07; "Analysis: PRC Climate Plan Aims To Deflect Criticism Prior to G-8," Open Source Center (Online), 7 June 07.

<sup>96</sup> Joanna I. Lewis, "China's Climate Change Strategy," 7 China Brief 10, 11 (2007).

<sup>97</sup> Briefing on China, the Economy, and Global Warming.

<sup>98</sup> "S. Korea Increases Monitoring Posts for Yellow Dust in China," Yonhap News (Online), 5 April 07; "China Works To Fight Desertification in Xinjiang," China Daily (Online), 10 July 07.

<sup>99</sup> Jeff Goodell, "Capital Pollution Solution?," New York Times (Online), 30 July 06.

<sup>100</sup> U.S. Environmental Protection Agency (Online), "Cap and Trade Essentials," last visited 23 August 07.

<sup>101</sup> Goodell, "Capital Pollution Solution?," New York Times; "Carbon Markets Create a Muddle," Financial Times (Online), 26 April 07; Michael Gerson, "Hope on Climate Change? Here's Why," Washington Post (Online), 15 August 07.

<sup>102</sup> U.S. Environmental Protection Agency, "Cap and Trade Essentials."

<sup>103</sup> Ibid.

