Meeting China's Food Safety Challenge

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Introduction

With over 240 million farmers, one million processors, and many millions of distributors, China has struggled to develop a national food safety regime that can effectively integrate diverse interests within a common framework of governance. Interviews with Chinese food safety experts reveal a system in disarray. Despite concerted state efforts to fix it, microbiological hazards remain unchecked, supply chain management is weak, and policies are uncoordinated across disparate levels of government.

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The number of adulterated food complaints recorded by the China Consumer Association in 2011 increased by 22 percent from 2010.[1] Chinese statistics artificially deflate the number of poisonings and inflate food inspection pass rates, yet a recent survey conducted by the Pew Research Center shows that in 2012 41 percent of respondents identified food safety as a "serious problem"—up from just 12 percent in 2008.[2] Food safety now represents one of the top three governance concerns of China's population, along with inequality and corruption.

Why is China's food safety system failing and, indeed, becoming worse?

This policy memorandum argues that China's safety-related food failures are a result of the challenges of governing a system of such massive scale.

In large-scale systems, such as China's, regulators must harmonize local best practices with national standards, coordinate actors in diverse global supply chains, and navigate jurisdictional complexity within a farflung bureaucracy. In effect, China's challenge is to develop a coherent governance framework in a large, heterogeneous context—one in which regulators must routinely make trade-offs affecting feasibility, policy design and the applicability of policy to diverse local conditions. Their choices may well solve some problems but invariably create new ones.[3]

To be sure, all countries face these challenges in policymaking. But in China, the trade-offs are more pronounced because of the country's sheer size and complexity. This memorandum

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contends, therefore, that the Chinese state's overreliance on straightforward centralization or decentralization (rather than the more complex federal approach we see in other countries) to address regulatory crises exacerbates these difficult trade-offs.[4]

China faces a situation where its system must simultaneously provide for exacting standardization (which, in turn, requires high levels of centralization) while also accommodating the extensive local diversity of food production (which requires high levels of decentralization). Thus China's food safety problem portends a new dynamic in central–local relations: neither centralization nor decentralization is sufficient to address the problem of scale. For instance, a decentralized strategy without the strong coordinating hand of the center will fuel continued interprovincial disputes; yet a centralized approach to food safety, by contrast, will be too disconnected from local food safety realities.

In short, the scale and complexity of the food safety challenge implies the need for a new multilevel division of labor in China between Beijing and local governments to assure more effective and efficient regulatory control.

China's food safety system shares many of the pathologies of scale experienced in other regulatory systems, such as the European Union (EU), the United States (US), and India, which also are characterized by stretched regulatory capacity, mismatched standards between political sub-units, and principal-agent problems between the central government and the periphery.[5] But China differs from these other large polities in some important ways.

For one thing, China's production base is more extensive and less developed than its Western counterparts.[6] Chinese production practices vary significantly from province to province when compared to the EU and the US.[7] Moreover, unlike these other large-scale systems, China lacks a federal framework that would provide a clearer template for regulatory integration among diverse localities.[8]

Not surprisingly, China has struggled to develop a food safety management strategy that can cope with the country's sheer scale. One result is that China's food safety regulatory system has evolved largely as a reaction to recurrent crises. An ad hoc mix of centralizing and decentralizing policies has emerged, but these often end up at cross-purposes, further fuelling regulatory conflicts.

This policy memorandum focuses on the four dominant strategies currently being employed in China's food safety system, all of which have produced lackluster results: (1) the use of coordination bodies, (2) locally directed model production bases (MPB), (3) top-down food safety propaganda and mobilization campaigns, and (4) regulatory segmentation that has created a less than coherent system.

Each policy is encountering different challenges: for the coordination bodies, the problem is an unclear template for regulatory coordination; for the MPBs, it is integration with a nationally coherent strategy and standardization program; for the campaigns, the principal shortcoming is poor institutionalization; and for regulatory segmentation, the problem is the narrow applicability of policies.

The memo first examines the factors that are fueling China's food safety crisis, putting the emphasis on the problem of scale. It then turns to each of the four dominant food safety policies the state has employed, offering a critical view of the recent history of implementation and effectiveness. Finally, it offers some policy recommendations for China to improve its regulatory system for food safety.

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The Anatomy of China's Food Safety Crisis

Popular media accounts regularly assert that China's food safety problems are due to a lack of political will or insufficient investment in food safety. Yet recent reforms suggest otherwise. In the last ten years, the Chinese state has actually spent the equivalent of more than $800 million to upgrade monitoring facilities, build laboratories, and hire more food safety personnel.[9]

Alarmed by the increasing social unrest that has resulted from widespread food contaminations, both central and local officials are highly wary of the potential for massive food safety-related protests. That means they have strong political incentives to address food safety issues. And global scandals involving Chinese products shipped abroad have placed additional pressure on central government officials to ensure that China is not exporting its regulatory problems.[10]

The sheer size of China's bureaucracy results in weak monitoring practices that, in turn, give rise to corruption and other pathologies of governance.

One result is that China has revised its performance evaluation system to severely punish officials for mass food poisonings. The State Council, China's cabinet, has created two special commissions led by senior leaders to address food safety issues.[11] And in 2013, the central government established a newly re-vamped China Food and Drug Administration (CFDA).[12]

Most critiques of China's food safety failure focus on run-of-the-mill governance problems. Some highlight the pervasive role of corruption in eroding the food regulation system, not least because of collusion between officials and local entrepreneurs who seek to circumvent standards and monitoring, the buying of safety certifications, and the manipulation of food safety audit reports.[13] Others emphasize weak media oversight in China, or the still underdeveloped role of courts in tort liability as root causes for China's food safety problems.[14]

Still other critiques focus on the problematic role of independent regulatory agencies in an authoritarian state, fragmentation of the food safety bureaucracy, and local obstruction that resists centralized authority.[15] More broadly, it has been observed that a general lack of social trust contributes to an environment of non-compliance.[16]

This memo does not suggest that China's food safety problems have nothing to do with corruption, a lack of state capacity, or weak social trust. But it aims to highlight another, often overlooked dimension—scale—as

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another reason for China's food safety failures. The sheer size of China's bureaucracy results in weak monitoring practices that, in turn, give rise to corruption and other pathologies of governance. Production practices vary significantly across the country, owing to the immense number of producers and differences in geography, climate, and socio-economic conditions. As a result, Chinese food producers often disregard central policies that do not comport with local production realities.

Similarly, the very lack of state capacity in food safety also stems in part from China's sheer scale. The simple addition of even a single layer of bureaucracy in an already large system can lead to an exponential increase in personnel and substantial distortions and delays.[17]

During the 1980s, the Chinese government pushed forward a series of initiatives to develop the infrastructure for new markets that dramatically altered the scale of production and ultimately led to the emergence of new regulatory risks. Prior to the 1980s, China faced constant food shortages.[18] So in an effort to stimulate productivity and innovation in the food sector, food production was decentralized to local governments, spurring local investment in food processing.[19]

By 1990, the food industry was the third largest industrial sector in China, valued at 144.7 billion yuan ($21.7 billion); in 2001, industrial output of food was valued at 954.6 billion yuan ($143.2 billion).[20] Millions of small farmers co-exist in China with so-called dragonhead enterprises, the large-scale agricultural companies that emerged in the mid-1990s as part of a government effort to industrialize the agricultural sector.[21] In 1996, there were only 5,381 such firms, but this number had grown to over 61,286 by 2006.[22]

As supply chains lengthened and became more complex, China's food safety problems were also transformed. Previously, food safety issues were localized and related to questions of hygiene, the accidental misuse of pesticides, and unsanitary conditions in restaurants.[23] However, intense market competition and weak monitoring practices, coupled with a thin commitment to food safety, soon led to the emergence of new food safety problems. Nationwide scandals involving deliberate food adulteration, the insertion of illegal additives in food, the production of fake food, and the use of pesticides as food preservatives became more common.[24] These new problems necessitated a fundamental restructuring of China's food safety system.

In this context, a nascent, but still fragmented, regulatory "system" began to take form in the 1990s. As administrative reforms in the broader economy decoupled food production from the state-owned enterprise system, regulatory control began to concentrate in particular nodes in China's vast state bureaucracy.

Regulatory authority for food safety was shared between the Ministry of Health, the Ministry of Agriculture, the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ), the Ministry of Commerce, the State Administration of Industry and Commerce, and a host of other agencies involved in the different stages of food production and distribution.

This fragmented system, populated by so many responsible agencies, led to serious gaps in regulatory management, conflicting standards, and bureaucratic turf wars across levels of the Chinese government—for example, between ministries, as well as among various localities. Beginning in the early 2000s, Beijing moved forward with major reforms to re-design China's inadequate food safety system to cope with the new realities of China's increased scale of production.

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The notion that China would need to manage the problem of scale has figured into its policymaking process in several ways: First, regulators must evaluate the feasibility of policies in terms of their cost and ease of implementation, taking into account the urgency of the food safety problem. Instead of undertaking a tortuous process of institution building, it may be more cost-effective and timely to simply launch a food safety campaign as a way to effect compliance among large numbers of producers. But these ad hoc remedies cannot be a substitute for more enduring institutional solutions, and that has certainly been the case in China.

Second, regulators must consider often-conflicting goals when they design policies that aim to manage the problem of scale. A centralized approach to food safety, for example, may well streamline governance, but it can also fail to integrate local regulatory bodies into a common food safety enforcement program. Conversely, designing a more decentralized system may well improve the fit between regulations, on the one hand, and local food production, on the other, but not cohere into a standardized system of national regulation.

Third, Chinese regulators must assess whether broad-based solutions to food safety problems in the country are practicable, given the problems of geographic and industrial scale. Can a policy be applicable to every producer, or only to a specialized subset of elite processors? That is the sort of question that Chinese policy designers in the food safety area must regularly confront.

Because of these many trade-offs, the development of China's national food safety system has been a contested political process about how best to manage the problem of scale. How do regulators assess policy feasibility, design, and broad-based applicability

in the management of scale? Often, this has been driven by technocratic concerns, not economic interests. But technocratic disagreements do not preclude fierce political contestation and disagreement. Some technocrats may prefer certain approaches based on cost and ease of implementation. Others may debate the effectiveness of those policy designs. Still others may question whether a given solution can actually serve as part of a national, broad-based system of regulation.

In China, this complex political process around food safety has led to a mix of centralizing and decentralizing policies that have so far failed to integrate conflicting regulatory interests to effectively manage scale. In fact, because of the politics that have emerged around these various trade-offs, regulatory tensions have led to a breakdown in coordination and a failed food safety system in China.

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Centralization and Coordination

Following an infant formula scandal in Fuyang, Anhui province in 2003, China's first major food safety initiative involved the development and strengthening of central-level coordination bodies.[25] "Coordination" (*xietiao*) entails setting annual work plans for ministries involved in food safety, facilitating communication between different ministries and levels of government, and resolving disputes arising from bureaucratic turf wars.

How does this work in practice? A central coordinating unit creates a single reference point for the system, and then addresses the scale problem by reducing administrative complexity, streamlining accountability, and setting clear regulatory goals. When faced with overwhelming jurisdictional complexity, local obstructionism, and a morass of complex standards and rules, the centralization of regulatory control by using a coordinating body, in effect, means that China has chosen to prioritize standardization over institutional diversity. It is important to note that the coordinating body initiative does not require a complete overhaul of the pre-existing system, but seeks to place one bureaucratic actor in a leading role.

And this appeared for a time to be what China was doing in its food safety system. Since the early 2000s, China has created several such coordination bodies to establish centralized control over its fragmented food safety bureaucracy. In 2003, the State Food and Drug Administration (SFDA) was

formed to coordinate China's food safety regulatory bodies by reinforcing hierarchical control and coordinating local food safety enforcement across multiple agencies.

But then, owing to a series of failures involving information flow, bureaucratic competition, and corruption, the SFDA was swept away in favour of other coordinating bodies.[26] In 2007, the State Council formed a special committee to address food safety challenges led by Vice Premier Wu Yi. Then, in 2009, the Ministry of Health was designated as the *new* lead ministry in charge of coordinating regulatory activity.

Later, in 2010, a National Food Safety Commission was established and led by then-Vice Premier Li Keqiang, which would lead food safety committees (FSC) established at each level of government to coordinate regulatory activities. The newest coordination body, the CFDA, was created in 2013, and reports indicate that the agency will likely face similar challenges in establishing its authority.

During this process, the central government in Beijing made a strong push to establish coordinating bodies at each level of government. In a series of food safety notifications, plans, and circulars, local governments were instructed by the central government to form "leading small groups" and "coordinating bodies." Food safety authorities were to develop "organizational strength and leadership" and set "clear responsibility arrangements" through coordinating bodies.

In the central government's annual assessment of food safety work at the provincial level in 2011, 70 out of the 100 points were about achievement of regulatory coordination and the restructuring of food safety management in line with central policy aims (see Figure 1). This mandate is echoed in county-level assessments of food safety management at the township level, through which the formation of an operating food safety coordinating body represented 50 out of 100 points (see Figure 2).[27]

Figure 1. Provincial Food Safety Evaluation Point Allocation

Evaluation Item	Points
Organization and system building	15
Government restructuring measures	55
Develop corporate responsibility	20
Effect of government restructuring measures	10
Extra credit	10
Penalties (major food safety incident)	-20

Sources: Provincial food safety document from author's personal collection.

Figure 2. Township Food Safety Evaluation Point Allocation

Leadership/Organization Evaluation	**50 points**
Leadership committee formed	10 points
Districts have FSC	20 points
FSC targets established	20 points
Work Situation	**50 points**
Coordination	10 points
Education work	10 points
Monitoring work	10 points
Meets county FSC plan targets	10 points
Launch Trade Market Clean-up	10 points
Total	**100 points**

Sources: Township food safety document from author's personal collection.

Coordinating bodies have operated effectively in some localities, but not everywhere. At the outset of the coordinating body initiative, the Shanghai FDA, for example, was lauded for its success in directing the local food safety system. Foreign experts highlight that local agency's high degree of technical expertise and its significant regulatory independence.[28] The Shanghai FDA had been successful in insulating the local market from unsafe foods sourced from other provinces, effectively managed food recalls, and expanded monitoring and surveillance networks. The FDA in the northwestern province of Ningxia had also been successful in coordinating local food safety efforts, promoting national food safety certification schemes, and facilitating cooperation among provincial, county, and township levels of government.[29]

But the Ningxia and Shanghai experiences with coordinating bodies are notable exceptions to the norm. Indeed, this centralizing initiative has, in fact, yielded significant problems. The establishment of a single coordinating body, rather than a complete overhaul of the food safety system, initially seemed to be an efficient way of circumventing bureaucratic turf wars and quickly restoring order to a large-scale system. Yet officials at the provincial, county, and township levels of government have struggled to understand the role of coordinating bodies in food safety governance, which has led to significant implementation problems.

The clear lesson of this experience is that centralization, when it is not accompanied by a clear template for coordination, actually *exacerbates* regulatory conflicts. Chinese officials have explained that there remains

fundamental uncertainty about what the directive to "coordinate" entails in practical terms. Despite the acknowledged success of their coordination efforts, even Ningxia's provincial officials admit (when asked for details) that a major challenge in facilitating coordination among different food safety agencies is that coordination is a "soft target" because success in implementing it cannot be easily measured.[30]

Although inspections, penalties, and food safety campaigns can be counted and recorded in food safety reports, the success of "coordination" is indeed difficult to assess. Officials complain that it is tough to evaluate whether they are facilitating "clear lines of communication," "inter-ministerial contact," or "inter-level planning"—all of which are policy directives from Beijing.[31] Apart from the nominal establishment of committees, most local regulatory officials have no real sense of how to actually coordinate food safety activities within their territorial jurisdictions and between levels of government. Local food safety work is presented in an annual report and then evaluated at a higher level. However, given that a local official's greatest concern is to prevent a major food scandal, which in some localities would lead to dismissal, coordination falls low on the list of food safety priorities.

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The ambiguity of the role played by the coordination bodies in food safety management is exacerbated by the lack of a statutory basis for their activities. New regulatory bodies have been formed, but none of the pre-existing agencies have written mission directives or detailed by-laws governing how to plan coordinated food safety regulation, interact with other agencies, and adjudicate conflicts between ministries and different levels of government.[32]

For example, when the new SFDA was developed, individual bureaucrats simply did not understand how to interact and redirect their workflows in the new system. A former director of the central-level SFDA has described what happened this way: "It was frustrating because, of course, we have 'food' in our agency name, so people expect us to be in control, but no one listened to us. We took all the blame from the public, but were never empowered to do our job."[33]

Moreover, since coordinating bodies do not actually replace pre-existing ministries, inter-agency tensions and

overlapping regulatory activities persist. Even after the establishment of FSCs (and more recently, the CFDA), officials still complain that the number of agencies involved in food safety remains too high: "It is difficult to work with other regulators," one bureaucrat has noted. "There are far too many players in the game and once something leaves our purview we really can't manage it."[34]

The establishment of yet another organizational unit also adds to the already burdensome reporting requirements for officials. Agriculture and Aquaculture Bureau officials describe the FSC as a mere "reporting body."[35] County officials assert that the reports they prepare for the coordinating bodies are largely "politically driven," emphasizing hard targets and development goals decided by higher levels that, in actual practice, fail to address China's real food safety concerns pertaining to water quality, soil conditions, and technical capacity.[36] In effect, what initially appeared to be a quick, cost-efficient approach to addressing food safety issues in a large, complex bureaucracy has led to increased politicking and confusion.

Local regulators in China often contend that the centralization of food safety management through these coordinating bodies has the practical effect of disempowering local actors. This, they say, is unfortunate because it is local players who have the necessary knowledge to monitor production networks effectively. One specialist has put the point this way: "committees at the provincial level are not competent and are too far removed from the ground … no one wants to take responsibility."[37]

Husbandry officials in one county, for example, complained that few of the FSCs understood the major risks involved in pig farming and have little experience in monitoring local distribution networks. Moreover, given the limited staffing of these FSCs, monitoring must still be directed by local agencies. One Chinese official asserted, "these guys have no idea what they are doing. They don't do any of the real regulatory work. They have to depend on the 20 other agencies involved in developing food safety." He then cited an example: "When the clenbuterol campaign started, they didn't do anything."[38]

Despite the promotion of the new coordinating bodies in various localities, their functional role has been sidelined for purposes of regulatory enforcement. In 2011, a nationwide survey of food safety systems in China's municipalities showed that while 60 percent of cities had established a new food safety coordination body, 85 percent of these cities nonetheless continued to manage food safety through locally guided agencies rather than through FSCs or the SFDA.[39]

In some counties, with the exception of planning and reporting periods, food safety committees seemed to be little

more than "empty conference rooms" for most of the year. One food safety director compared the role of the FSCs to that of the "Japanese emperor"—in other words, a position with high visibility but limited legal authority.[40]

One concrete indicator of the superfluity of the FSCs is that laboratories and technical equipment remain embedded within individual agencies rather than at the local FSC. In one county, for example, the husbandry bureau purchased an expensive laboratory, but continued to staff it with its own technical personnel. Said one observer, "the county has a 3 million yuan ($450 thousand) food safety laboratory, and [yet] it's [being staffed and run by] the husbandry bureau, not the FSC. What does that tell you about the FSC's use?"[41]

As a scale management technique, coordinating bodies have engendered the *very* type of fragmented regulatory politics that they were meant to resolve within China's large-scale bureaucracy. Developing a special pilot agency rather than overhauling the entire food safety system was thought to be a fast and effective strategy. Discussions of developing a new single-agency model were rejected out of hand because of the chance of protracted bureaucratic infighting; that is because food safety portfolios would have had to be reshuffled across various ministries and different levels of the Chinese government. So instead, "coordination" appeared to Chinese decision-makers to be a far more politically palatable choice.

Similarly, rather than developing a careful scheme to harmonize standards and regulations, which would have required significant time and effort, decision-makers chose instead to emphasize central government-mandated targets, thinking that this would help to focus food safety efforts across the Chinese system. But here too, this scale management strategy within a large, unwieldy bureaucracy yielded a significant political backlash.

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So in the process of standardization, China's food safety coordination bodies have failed to realign interests, complicated implementation of food safety policy, and disregarded the real needs of local regulators. While recent reforms have further empowered and centralized food safety management in the CFDA and eliminated a number of bureaucratic players, coordination issues at the local-level and between levels have yet to be resolved.[42]

Model Production Bases

A second strategy, compounding the problems of the coordination bodies, has been to develop so-called MPBs. This effort preceded the coordination

body initiative but only began to feature prominently in the state's food safety plans in the early 2000s.

While coordination bodies were meant to emphasize standardization, China's establishment of local MPBs seeks to leverage diversity in an effort to cope with the problem of scale. Given the sheer number of producers and heterogeneous production conditions in China, policymakers aimed to develop a *decentralizing* regulatory initiative, using locally directed model agricultural production bases as a way to improve food safety across the country.

In terms of cost and feasibility, regulators did not need to develop a complex national law; they could instead delegate regulatory authority and standard setting for certain products to local governments. As a matter of policy design, such decentralization is meant to encourage local innovation and intergovernmental learning. Inspectors could presumably also benefit from local knowledge and would be able to identify non-compliers. As each sub-unit improved food safety, the entire market would then provide an ever higher level of food safety, albeit incrementally. In effect, decentralization sought to build effective governance from the bottom-up.

Under the MPB scheme, local governments have been encouraged to establish specialized sites for industrial food production. State officials view modernization of the agricultural sector as key to addressing China's food safety crisis.[43] The 12th Five-Year Plan (2011-2015) emphasizes the establishment of production bases as a top priority for the central government in Beijing.[44] The underlying logic of this approach is that, as farms become larger and adopt scientific procedures, food safety problems will be resolved.

At MPBs, farmers are taught new techniques and are closely monitored by regulators.[45] As of 2007, there were 24,600 hazard-free production bases in China, 593 central-level demonstration zones, 100 demonstration counties, and 3,500 provincial-level demonstration zones.[46] Bases are typically over 25 acres in size. Training facilities are developed on site for continuing education on food safety procedures. Most sites are equipped with express testing equipment for pesticide residues and illegal additives.

According to a policy of "one village, one product" (*yicun, yipin*) provincial and county governments select villages to produce a specified high-value crop, which is part of an agricultural branding effort.[47] County governments develop specialized local protocols. For example, in one county in Zhejiang province, the agricultural bureau guides farmers in bayberry production. In a county in Sichuan province, producers follow local guidelines on lotus root cultivation and the production of specialty "wild pigs." Given that no national standards exist for these

local products, local governments are allowed significant leeway to design their own policies.

For purposes of food safety management, county-level regulators have observed that MPBs have made it easier to implement regulations in a cost-effective way. Aggregating farmers into a base enables regulators to conduct inspections regularly, whereas regulators typically must spend several days to reach farms scattered all around a village.[48] Crop specialization also helps to enable training sessions.[49] When farmers follow a uniform schedule for planting, pesticide application, and the harvest, regulators can identify problems without overextending their resources. Importantly, MPBs offer increased market access for local produce and have substantially improved farmer incomes.[50] In contrast to the unfamiliar national Food Safety Law, MPBs provide a more practical approach to address immediate food safety challenges through their monthly training sessions, which discuss safe cultivation techniques.

But the story is not all positive. By foregoing standardization, the MPB policy has raised the question of whether a patchwork of locally directed model production zones can cohere to a national regulatory system, much less to assure safety. Differences in local agricultural projects can lead to regulatory disparities, fueling interprovincial regulatory politics. Standards may conflict from one place to another and testing procedures from MPB to MPB may be irreconcilable. For example, Shandong and Ningxia provinces developed different protocols for warm house production, making it difficult for Shandong food producers to enter the Ningxia market. Ningxia agronomists were unfamiliar with Shandong's warm house prototype and were hostile to outside experts interfering in Ningxia's agricultural development. In an interview, one executive from Shandong based in Ningxia observed, "of course, the local agronomists didn't like the fact that I had entered into their territory. They had their own greenhouses, but the[se] did not work."[51]

The MPB policy creates additional problems: Some observers have noted that interprovincial conflicts due to local level experimentation could pose a serious impediment to national integration.[52] One notable example of such interprovincial disputes occurred in 2006, following the discovery of excessive carcinogens in turbot fish from Shandong province. Shanghai, Beijing, Guangzhou and other provincial governments closed their markets to farm-raised fish from Shandong.

The Shanghai FDA sent an investigative team to investigate fish farming practices in the Shandong cities of Weihai and Rongcheng. During the course of the investigation, the widespread use of nitrofuran and chormycelinin was discovered.[53]

Shanghai investigators exposed significant disparities in how fishery bases were managed; they then refused to allow turbot fish from Shandong into the Shanghai market. In this particular case, a series of interprovincial agreements were eventually brokered to "harmonize" standards and production base management. This eventually led to a lifting of the ban.

Another significant problem with MPBs is that these varied local standards can come into conflict with emerging standards of safety that are supported by international consensus, such as "Good Agricultural Practices" (GAP). Local standards may indeed improve compliance in some respects, but at the cost of conflict with international best practices.

Differences in local standards lead to regulatory conflict, and local solutions may simply fail.

Food safety experts hold that local variation is permissible, but only so long as it falls within the parameters of internationally established safety standards. For example, the ChinaGAP II standard, which has fewer critical control points, was written to assist Chinese farmers in their gradual transition to the more demanding GlobalGAP standard.[54] But undirected local experimentation with no central guidance could lead to substantial food safety coordination problems and leave China in a worse state.

Many experts are skeptical that the MPB model is the correct template for China's regulatory development writ large. MPBs are largely used for local specialty products and do not necessarily serve as a model for more general food products. Indeed, some Chinese local officials believe that the MPB represents an unattainable ideal of industrialized agriculture that is ill suited to China's farming context.[55]

Many Chinese farming households are comprised of illiterate and elderly people, who find safe farming techniques to be burdensome and difficult to learn. Elderly Chinese farmers on one base declared that they are rarely permitted to participate in training sessions and that government officials largely ignore them during the planting season.

So, a decentralized scale management strategy has the benefit of relying on local knowledge and local innovation to increase compliance with food safety requirements. But ultimately, the flexibility offered to localities to experiment with agricultural techniques creates problems for national regulatory integration. Differences in local standards lead to regulatory conflict, and local solutions may simply fail.

Food Safety Campaigns

Campaigns represent a third method that China has utilized in the quest for better food safety. That is because, despite the development of coordinating bodies

and MPBs, major food safety scandals continued to emerge throughout the 2000s.

Following a major 2008 infant formula scandal, the government launched campaigns with increasing frequency aimed at unscrupulous producers and malfeasant bureaucrats. As a scale management strategy, campaigns are a centralizing initiative that can be cost effective and timely when managing a large, diverse system. After all, mass mobilization ostensibly cuts through administrative complexity. These efforts are not so much about building institutions, which can be time consuming, as they are about setting an example, "striking hard" against violators, and punishing non-compliant individuals.

Intensive bursts of regulatory activity can help to promote a climate of regulatory compliance and restore confidence in government. Directed campaigns provide another clear signal from the center that food safety issues are important and of immediate concern to Beijing. In effect, these ad hoc initiatives instill policy coherence throughout a huge country like China by realigning incentives through the threat of punishment. These new disincentives do have an effect, at least in the short term.

Food safety campaigns draw on a long political tradition in China. Campaigns are a common feature of Chinese-style governance and reflect an inherited revolutionary tradition from the country's Maoist past.[56] Food safety campaigns can be broadly categorized as (1) "strike hard" campaigns (*yanda xingdong*) aimed at violators and criminals, (2) government rectification campaigns (*zhengzhi xingdong*) aimed at instilling discipline in government and Communist Party officials, and (3) holiday investigation campaigns (*jieri xuncha xingdong*).

Strike hard campaigns are initiated at the central and provincial levels and focus on recent food scandals. For example, in 2011 a nationwide campaign was launched following the discovery of gutter oil and clenbuterol in pig feed.[57] These campaigns serve a dual purpose by restoring faith in government regulators and instilling confidence among consumers.[58] A typical strike hard campaign involves the arrest of perpetrators of food safety violations, food company executives, and unlicensed producers.[59] Short-term campaign targets feature prominently in the annual work plans of local governments. For example, following a 2008 melamine scandal, inspections of all milk stations for melamine within one county in Sichuan province became a key task of the annual food safety plan.[60]

Rectification campaigns, meanwhile, focus specifically on officials. Such campaigns may be conducted in tandem with strike hard campaigns. Officials found to be in collusion with food safety enterprises, or who fail to punish non-compliant companies, are disciplined.

In 2012, the Central Disciplinary Inspection Commission—China's main anti-corruption body and Communist Party watchdog—investigated over 300,000 cases related to food safety, eventually disciplining 40,000 officials for regulatory abuse or negligence.[61] During one recent campaign, evaluators were instructed to ensure that "officials followed all procedures, did not simplify procedures, did not recognize certifications from other counties, and kept thorough records."[62]

Holiday investigation campaigns are conducted with a focus on distribution points and dining establishments prior to significant holidays, a time when consumption of food in China is generally expected to increase. In addition to inspections, officers promote food safety by passing out information pamphlets and making public food safety pronouncements.[63]

Photo: Flickr/Andrew Hefter

From the perspective of the central government, of course, food safety campaigns can be a cost-effective tool to realign incentives across a highly diverse production system. Yet they are hardly straightforwardly successful. For instance, in contrast to the apparent effectiveness of China's "managed campaigns" in other contexts, food safety campaigns have only further fuelled bureaucratic tensions at the lower levels of the Chinese government.[64]

Since the early 2000s, campaigns have been launched each year to target illegal additives, corrupt officials, and fake food products. But, with little support from the central government, much of the actual cost of the campaigns is borne by local governments, giving rise to resentment at what is, in effect, an unfunded policy mandate. In interviews, officials in several Chinese counties explained that, for many campaigns, local governments simply do not have sufficient funds or the necessary testing equipment.[65]

In the short term, regulators emphasize that campaigns do much to restore confidence in the market. Following an incident in one county in Jiangsu province that involved excess pesticide residues, producers asserted that quick action from Nanjing (the provincial government seat) helped to prevent the collapse of food prices.[66] Yet other interviewees highlight that institution building will be required for the long-term prevention of food safety scandals and that campaigns are simply not enough.

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Both of these regulatory objectives are important for the development of a food safety system. However, short-term campaign-style solutions have often come into conflict with the long-term goal of rational regulatory development. Officials increasingly question the effectiveness of launching so many food safety campaigns.[67]

Furthermore, aside from counting up the various references in food safety reports to arrests made and penalties levied, it is difficult to assess, quantitatively or qualitatively, whether food safety has actually improved as a result of these campaigns. In many cases, non-compliant food processors simply move to another location and continue to produce substandard foods. One producer confessed, "the government usually offers no real help … but [during a campaign], they come around and inspect and make you do a lot of paperwork … but then go away."[68]

Officials have also admitted that the constant barrage of campaigns has interrupted routine monitoring and surveillance work.[69] Because new food safety implementation measures are still being written, food safety campaigns continue to take precedence. During the recent clenbuterol campaign, for instance, officials in one county had to halt important day-to-day regulatory monitoring activities to conduct urine tests in all farms with more than 50 pigs, which included several thousand farms.

The ad hoc nature of the campaigns can also contribute to regulatory uncertainty: food safety goals are constantly being changed. One official complained, "we are at a loss as to how to handle food safety; there are standards, but with campaigns, these might change or move on."[70] Local government officials are concerned by the "one size fits all" nature of campaigns, which is sometimes referred to in Chinese as "cutting with a single blade" (*yi dao qie*). Often, the kneejerk reactions to food safety scandals by the central government do not reflect local food safety concerns.

For example, during a recent anti-additive campaign, officials in one county pointed out that the farmers in their jurisdiction were so poor that it was highly unlikely that additives had even been used in production, yet everyone was still subjected to inspections.[71]

Regulatory Segmentation

The fourth method to improve safety involves a process of regulatory segmentation. China's export sector operates a specialized regulatory regime that developed independently of the domestic system in the 1990s. As a result, the export sector has largely been insulated from many of the food safety management problems that plague the domestic sector.

Chinese government reports show that the inspection pass rates of Chinese

food exported to foreign countries remain high at 99 percent.[72] This claim is supported by the 2007 customs data from foreign governments, which indicate that Japan rejected just 0.58 percent of food imports from China, the EU just 0.2 percent, and the US below 1 percent.[73] The relative effectiveness of China's export food safety program results from a decentralizing strategy of regulatory segmentation that separates its export and domestic sectors.

Regulatory segmentation addresses the challenge of managing scale by reducing the size and complexity of the system. Limiting the system to a certain class of producers facing similar market pressures and food safety risks facilitates the development of food safety policies that are better aligned with producer interests. This process can be broadly characterized as "decentralizing," because it foregoes the creation of a single system of regulation, instead creating smaller, ring-fenced systems that operate according to an entirely different regulatory scheme.

Often, the kneejerk reactions to food safety scandals by the central government do not reflect local food safety concerns.

Segmentation may be used to implement regulatory controls gradually where comprehensive reform is impractical—for example, because of high costs or lack of technical capacity. A closed regulatory system also allows the government to tailor the food sector to more exacting safety controls.

Food safety in China's export sector is managed by the AQSIQ, which restricts the number of exporters by imposing a strict licensing system and also subjects exporting plants to additional monitoring and inspections.[74]

As of 2007, only 12,714 enterprises were formally registered with the AQSIQ registration system.[75] Selected enterprises are assisted in attaining and maintaining a Hazard-Access Critical Control Point System (HACCP). The government established a development fund for export brands to help firms with marketing efforts abroad and to procure professional assistance in brand development. Training is offered to all export enterprises in a range of areas to enhance technical standards, food safety monitoring, and the attainment of international certifications.

Chinese regulators and producers do acknowledge that the cost of implementing a segmented export sector strategy is high. However, they agree that the small-scale and exclusivity of the export sector leads to a more responsive and efficient market. Because investments in food safety are significant, exporting producers must sell their products at a higher price. In the domestic sector, pervasive mistrust of food production and the weak regulatory system mean that consumers are unwilling to pay a

premium for quality food. In the export sector, by contrast, government officials and third party actors more closely monitor producers to preserve consumer confidence and justify high prices.

Importers, in fact, support the reduced scale of the Chinese export system, preferring to work with an elite set of reliable producers that can supply high quality and safe food. EU companies work directly within China's export licensing system and refuse any product that does not comply with AQSIQ's stringent food safety requirements. Moreover, EU food safety officials would prefer that the volume of trade from China be reduced in order to ensure higher levels of food safety.[76] Japanese food safety officials permit only a subset of China's licensed export enterprises to export food to Japan.

Chinese officials maintain that the use of a closed export system is highly suited to the country's current stage of development. China's own domestic standards are less exacting than those of most of its trading partners, particularly Japan and the United States.[77]

In short, creating a separate controlled system for exports provides China with the necessary flexibility to tailor its export food sector to the specific requirements of overseas importers. For example, China adopts Japanese labelling requirements and employs Japan's quality standards for product size, shape, and color.[78] The closed system also enables AQSIQ to closely monitor a select number of licensed farmers rather than dissipate its limited resources to cover 240 million farmers who often use non-standard production methods. A separate export sector regulatory regime also permits focused and direct investment in food safety for high-value products.

But even in this fourth area, there are problems in China's effort to manage scale. Rather than solve China's scale problem, segmentation simply sidesteps the nature of its food safety governance challenge. Some international observers contend that China's export sector can serve as a model for its domestic food safety system, as Chinese exporters also begin to supply their domestic market.[79] But extending a system based on segmentation to such a diverse producer base facing different market conditions would be problematic.

For one, regulators in the domestic sector simply do not share the same risk management perspectives as those in China's export sector. Exporters who seek to enter the domestic market assert that domestic regulators are considerably less professionalized than their counterparts in the export sector.[80]

Domestic officials set unrealistically high food safety standards for unfamiliar products and resist the introduction of new products even from reputable producers. One Chinese exporter commented in an interview that,

"they aren't that well trained and create unrealistic standards to protect themselves."[81] An international food safety auditor complained, "More must be done to ensure that standard setting is based on scientific risk analysis, and the integrity of testing procedures is protected."[82]

Officials do support a "scientific" approach to regulation, but they are unwilling to relinquish control over regulatory processes to technocratic experts. Exporters complain that local government officials in the domestic sector do not respect the impartiality of scientists.[83]

China's food exporting enterprises also express reservations about entering the domestic sector due to the persistent resistance of farmers to food safety practices.[84] Executives cite low levels of education, lack of exposure to global food safety standards, and the lack of experience with supply chain management among the country's domestic producers.[85] Given the short shelf life of most food products and the high risk of microbial contamination, farmers must operate according to strict schedules and standardized procedures.

Local producers resent the overbearing, ill-informed, and costly surveillance programs of large multinational corporations, and are known to actively subvert food safety protocols. Thus most export managers conclude that China's careful and detailed export practices cannot be replicated in the uncontrolled domestic sector. One exporter observed, "the domestic market is not really capable of meeting such standards … pursuing standards would bankrupt the vast majority of farmers … so real bleed into the domestic sector is not possible."[86]

Ultimately, global best practices cannot be easily diffused, nor can export producers easily control local producer networks. Regulatory segmentation may integrate regulatory interests on a limited scale, but will surely fail as a broad-based solution to China's food safety dilemma.

A Better Way Forward

The fact is, China has been unable to develop a scale solution for its food safety crisis that accommodates conflicting regulatory interests. Problems continue to plague the feasibility of the four basic policy approaches outlined in the last section—and their broad-based applicability (see Figure 3).

Centralization through coordination bodies may streamline authority but this approach often alienates local officials. Moreover, to date, such coordination bodies lack adequately qualified personnel and implementing guidelines.

Decentralization through model agricultural production bases may produce a better fit for regulatory rules and local food production contexts. But there is no mechanism in place to assure that local projects will cohere to a national food safety system.

Launching national campaigns is a cost-effective approach to manage scale and realigns incentives through mass mobilization. Yet the increasing frequency of the campaigns reduces their effectiveness and impedes institution building for day-to-day food safety management.

Figure 3. The Trade-offs in Scale Management

	Cost/Feasibility	Policy Design	Applicability
Coordination body	Implementation of "coordination" policies unclear	Streamlines authority, but alienates local officials	National
Model production base	Central government released from primary responsibility; focused implementation at local level makes it easier	Uses local knowledge to advantage, but can lead to interprovincial conflict	Elderly, illiterate, small-scale farmers excluded
Campaigns	Cost-effective alternative to institution building	Short-term improvements in consumer confidence, but long-term consequences for institution building	National
Segmentation	Focused implementation more manageable; aligns regulatory interests despite high costs	Specialized regime focused on elite producers; tailored to food safety needs of importers.	Barriers to policy diffusion

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Regulatory segmentation reduces administrative complexity by creating focused regulatory regimes that are ring-fenced to deal with the specialized needs of a particular sector; this makes it easier to implement policies. And yet the closed nature of a segmented approach makes it difficult to expand it to other contexts—for example, from the export sector to the domestic sector.

Each food safety approach has its strengths but cannot serve as the core of China's future *national* food safety system. The real question to be considered, then, is whether, in its effort to manage scale, China's existing food safety policies can be *combined* in a way that will draw from their strengths while addressing weaknesses.

Indeed, some aspects of centralized and decentralized approaches to food safety might be employed together, thus providing a common regulatory framework while permitting some institutional diversity.

Few countries have the opportunity to build an ideal regulatory system from scratch. And China's food safety system, too, has largely developed in reaction to crises rather than as a matter of rational regulatory design.

Since the 2000s, the central government has restructured the food safety system at least five times in major aspects. And has implemented many more minor reforms. Institutional artefacts from previous policies mix with new agencies and regulatory actors. The old SFDA offices, which were stripped of their coordinating role in 2008, co-existed with the new FSCs. The recent 2013 food safety re-organization created a new regulatory framework. This included the establishment of the National Health and Family Planning Commission, which is in charge of developing standards, and a restructured CFDA, which is responsible for the implementation of food safety laws. In addition, the Food Safety Law was amended again in late 2015.[87]

Local officials are confronted with conflicting pressures as ministerial and agency roles are shuffled and re-shuffled. Food safety authorities are encouraged to establish their own regulatory rules, only to have their efforts at institution building interrupted by intermittent national campaigns.

But China's decision-makers do have some options:

1. Federal Approaches

Chinese policymakers may find that the EU's multilevel approach to food safety provides guidance for the effective management of China's own scale problems. As in the EU, a similar approach in China would focus the authority of the central government on managing the "Chinese common market" while facilitating positive integration of provincial food safety systems. Provinces would be empowered to develop their

own food safety systems but would have to comply with minimum national food standards to engage in commerce in other provincial markets. Lagging provinces would then face competitive pressure to improve food safety for fear of losing access to the national market.[88] As of 2016, Beijing has already engaged in a food safety benchmarking exercise that grades provinces, municipalities, and local areas on their food safety management.

In this approach, provinces would have representation in central level decision-making bodies concerning the development of common market standards, risk assessments, and enforcement policies. As interprovincial disputes arise, the central government could intervene to adjudicate differences in standards and enforcement. The primary political problem of this approach is that the multilevel framework would require a reconfiguration of China's unitary governance structure, but it is worth exploring in various aspects.

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2. Mimicking Multilevel Systems

If the government is unwilling to establish a de jure federal or multilevel system for purposes of promoting food safety, then it could still adopt certain practices employed in multilevel systems to better cope with the problem of scale.

For example, China should certainly engage in a fundamental restructuring of its food safety apparatus from the central government down to the localities. Centralizing and decentralizing gradualist reforms have only complicated food safety enforcement. Instead, the state needs to ascertain the strengths and weaknesses of each level of government in regulatory action, and then designate regulatory authority accordingly.

Practical modes of coordination across governments and between different levels of governments need to be explained in concrete terms—for example, sharing of resources, information processing, and so on.

At the same time, the central government must refrain from unilateral regulatory actions in the form of campaigns, and instead provide support for local institutional capacity building. The central government should largely dedicate itself to auditing subnational units.

3. Standard Setting

Standard setting should reflect the reality of China's production and administrative system. Complex

standards devised at the center in Beijing should be reframed as aspirational *goals* rather than as hard and formal *targets*.

In this approach, standards development should actively reflect how local governments operating in diverse circumstances can eventually achieve these standards in a step-by-step fashion over several years.

4. Encouraging Regulatory Debate and Diversity

Ultimately, a multilevel forum in which regulators at different levels can freely deliberate and discuss emerging problems needs to be developed. In addition, regulators of the same level of government should be encouraged to meet and discuss the challenges they face, and share successful and unsuccessful approaches to food safety.

Obviously, reform of the regulatory bureaucracy is just one part of the solution to China's food safety problem. Other solutions should include public-private collaborations, improved supply chain management, broad-based agricultural development, and third-party certification. Taken together, all of these could help to build a more effective food safety system. Getting food safety policy right in China will require a more nuanced understanding of the country's scale, and thus the unique trade-offs its policymakers must face.

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Our Objectives

Specifically, The Paulson Institute fosters international engagement to achieve three objectives:

- To increase economic activity—including Chinese investment in the United States—that leads to the creation of jobs.
- To support urban growth, including the promotion of better environmental policies.
- To encourage responsible executive leadership and best business practices on issues of international concern.

Our Programs

The Institute's programs foster engagement among government policymakers, corporate executives, and leading international experts on economics, business, energy, and the environment. We are both a think and "do" tank that facilitates the sharing of real-world experiences and the implementation of practical solutions.

Institute programs and initiatives are focused in five areas: sustainable urbanization, cross-border investment, climate change and air quality, conservation, and economic policy research and outreach. The Institute also provides fellowships for students at the University of Chicago and works with the university to provide a platform for distinguished thinkers from around the world to convey their ideas.

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