

## **Institutions, Policies and Production of agricultural standards in China**

Jiping Ding\*, Paule Moustier\*\*, Xingdong Ma\*, Xuexi Huo\*, Xiangping Jia. 2018\*. Sustainapple project report. Amendment to the paper “Doing But Not Knowing: How Apple Farmers Comply with Standards in China”, forthcoming in *Agriculture and Human Values*.

\*Northwest A&F University, No.3 Taicheng Road, Yangling, Shaanxi, 712100, P.R. China

\*\* CIRAD, UMR MOISA, F-34398 Montpellier, France

MOISA, Univ Montpellier, CIHEAM-IAMM, CIRAD, INRA, Montpellier SupAgro, Montpellier, France

The certification parameter *hazard-free* in agrifood systems was launched in 2003 and administered by the Ministry of Agriculture to ensure the use of safe materials in production. Hazard-free certification is applied primarily to edible agri-products and became mandatory in 2008, when the melamine food crisis emerged in China. While hazard-free certification was designed to audit the standards and accredit certifiers as compliant with third-party agencies, in practice, it is administered by Agricultural Quality and Safety Center (AQSC), a state-related agency of the Ministry of Agriculture. AQSC decentralizes the application and inspection down to the prefecture. To apply for hazard-free certification, agribusiness companies and farmer cooperatives in rural counties first submit applications to an office in the prefecture and request an appointment with testing agencies who send staff to execute on-site inspections before the certification is issued. The validity of hazard-free certification is three years.

The certification for *green food* was initiated in the mid-1990s by the Ministry of Agriculture to enhance quality control of processed edible agro-produce. In the following years, its coverage extended to almost all categories of food and food-related drugs. *Green food* certification is optional to indicate a pollution-free environment and output of good quality. It permits agrochemical use and aims at the domestic market. It can be a useful step on the way to full organic certification. Unlike hazard-free certification that is administered through government bodies given its mandatory nature, it is handled by the Green Food Development Center (GFDC), an administrative agency of the Ministry of Agriculture representing the national administration. In each of the provinces, the GFDC recognizes and accredits several agencies, often local administrations and research institutions.

The development of the organic industry in China has been supported by a range of national policies and regulations. Local certification is conducted by domestic certifiers such as the Organic Food Development Center (OFDC); it is the first local organic certifier in China and was set up in 1994 and accredited by IFOAM in 2004.

Unlike products with *green food* certification that allows for the use of a limited variety and amount of chemical inputs, organic food has to be from plants and animals that have been grown without the use of artificial or synthetic fertilizers or pesticides and without antibiotics, growth hormones, feed additives or genetically modified organisms (GMOs).

The administration of organic certification in China involves several bodies with blended interests. China's Certification and Accreditation Administration (CNCA) is the legal government agency administering organic certification in China. Nevertheless, operational work such as application, inspections, lab test procedures, certification decision and post certification administration are performed by the China Quality Certification Center (CQC), an agency of AQSIQ. Organic certificates issued by CQC are valid for one year.

The certification of geographic labelling in China is administered by a variety of government bodies. Both the State Administration for Industry and Commerce (SAIC) and AQSIQ administers geographic labelling; SAIC administers registration and AQSIQ is responsible for authenticity, inspection and other related administrative tasks. Unlike applications for *hazard-free* certification that are operated at the municipal and county levels, only the governmental office at the provincial level is empowered to administer applications for geographic labelling in China. The provincial office is mainly responsible for verifying the authenticity and integrity of the materials and on-site inspection. At the operational level, geographic labelling is administered by Agricultural Quality and Safety Center (AQSC), a state-related agency of the Ministry of Agriculture. AQSC decentralizes the application and inspection down to the prefecture, where the administrative capability is limited and the accountability is low.

The legal constructs and administration of geographic labelling in China is different from the European system. Globally, geographic labelling accredits values that are created around an origin-based product. It highlights production from an area with certain special characteristics including natural conditions such as soil, vegetation and water quality, and particular production techniques and cultures. Geographic labelling takes two legal forms: Geographic Indications (GIs) and trademarks (Anders and Caswell 2009). It is therefore a unique form of intellectual property, such as a patent, a copyright or trademark. In Europe Union, GIs identify products with a particular territory and their ownership, while a trademark has a single owner, such as a company. The global agreement addressing geographic labelling is the WTO Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement. Nevertheless, the term geographic labelling and geographic indicators are mixed in use in China's legal framework, called *di-li-biao-zhi* in Chinese. Geographic labelling is regulated under the Trademark

Law of the People's Republic of China and is considered as a civil right or private right.<sup>1</sup> However, AQSIQ specifies geographic indicators as a public mark associated with a region, and the administration of geographic labelling is shared by the State Administration for Industry and Commerce (SAIC), AQSIQ, and Agricultural Quality and Safety Center (AQSC, a state-related agency of the Ministry of Agriculture); this causes great ambiguity and possible fraudulent or selective misrepresentation.

As regards private standards, it is difficult to have a clear picture. Wang et al. (2008) investigated Chinese consumer perception of quality management of the Hazard Analysis Critical Control Point (HACCP) for dairy products but the study does not review institutions handling the private standards. In a case study on Walmart's fresh supply chain, Ding et al. (2015) find several applications of Good Agriculture Practices (GAPs) by agribusiness firms; but these enterprises have certified their fruits and vegetables to a large extent as compliant with public standards such as green food and organic food.<sup>2</sup>

Certified agricultural products are growing in China. Produce certified as *hazard-free* doubled from 2010 to 2015 and accounted for almost half of China's planting area (Table 2). The production of *green food* increased by 5% annually during the same period and it covered 8.2 percent of the planted area. By contrast, certified organic food has been volatile and stagnating since 2010, covering less than 2% of the cultivated land.

The volatility of the market for organic agriculture in China is not backed up by reliable statistics. For example, local researchers reckon that produce certified as organic food spiraled to 1.9 million tons in 2011 but dropped to 0.6 million tons in 2012 (Table 2). The figure leveled off at 1.2 million tons in 2014, accounting for 2.1% of cultivated land. Nevertheless, statistics from non-Chinese sources show that the percentage of organic farming in China was only 0.3 percent of the land (Willer and Kilcher 2009). Considering the fact that 0.8 percent of total agricultural land is managed organically worldwide, the figures calculated by Chinese researchers (and published in local academic resources) were possibly overstated.

Insufficient coordination and accountability characterize the institutions involved in standards. For example, *hazard-free*, *green food* and geographic labelling are administered by MOA but through several segmented lines, AQSC for *hazard-free* and geographic labelling and GFDC for *green food*. Certification of organic food is

---

<sup>1</sup> In China, geographical labelling refers to the place of origin, the "special qualities, reputation or other characteristics of the goods [that] are primarily determined by the natural conditions or other humanistic conditions of the geographical location involved" (Article 16, Trademark Law of the People's Republic of China).

<sup>2</sup> One supermarket manager interviewed by the authors of this study in 2015 mentioned that they have their own standard controlled by a private auditing company and used by three cooperatives. their priority is traceability and farmer training through GFSI (Global Food Safety Initiative).

administered by CNCA but its operational agencies at the local level are under the Quality Certification Center (CQC) which is an agency of AQSIQ. The institutional ambiguity causes low accountability and conflicting interests among various government bodies.

As a consequence, certification costs are on the rise. It was estimated that firms in China paid more than US\$10,000 (and sometimes several hundred thousand US dollars) annually to get green and organic food certification (Qi et al. 2008). Third-party certification emerges as an institutional mechanism for monitoring and enforcing standards for food quality and safety throughout the contemporary agri-food system (Hatanaka et al. 2005). Nevertheless, the majority of relevant agencies at the national and local level in China are either affiliated with or attached to the government; very few of them are private enterprises (Fan et al. 2009). There is little surveillance, monitoring and evaluation of the certification agencies.

The institutional fragmentation of agricultural standards in China is a legacy of the regulatory framework of food safety and quality assurance. China's legal system governing food has undergone many reforms since the 1990s. This has caused piecemeal responsibilities, overlaps and conflicts of interest among the numerous legal authorities (Ni and Zeng 2009). The lack of coordination of the legal framework eventually leads to weak surveillance, inefficient and redundant inspection, and insufficient procedures to prevent accidents (Li et al. 2010; Xu et al. 2012). Recognizing the deficiency of the system, in 2013, the State Food and Drug Administration (SFDA) was established with a full ministerial status. The role and responsibilities regarding safety and quality assurance were redefined in "State Council Notification on Organizational Arrangements" (2013: Bill 14). In 2016, the Chinese government promulgated "Operational Regulations for the Food Safety Law (Amendment)". In the revised framework, SFDA and the Ministry of Health (MOH) are identified as the overarching bodies in supervision and coordination (see Figure 1). Specific to agricultural standards, MOH takes the leading role together with other ministerial bodies (mainly MOA) in designing and enforcing compliance with standards. Nevertheless, lack of local accountability and coordination is still a central problem and the details of the operations at the local level are not fully explained (possibly because of great regional variability).

## References

- AQSC(Agricultural Quality and Safety Center).2016.The quantity of hazard free products in China.  
[http://www.aqsc.agri.cn/ztlz/gjxdnysfq/201607/t20160701\\_188826.htm](http://www.aqsc.agri.cn/ztlz/gjxdnysfq/201607/t20160701_188826.htm). Accessed 23 August 2016.
- BAIDU. 2014. Overview of pollution-free agricultural products.  
[http://wenku.baidu.com/link?url=\\_mBcPfBBiyzcq2EYHEXbkr22nw3ocdrdYLwmOzk5fpUeqz\\_T1OQOxSdEVBp6\\_a6pVjOXKEmWAZoaq\\_Czo\\_0Tg6Hsmid\\_jamXjzPu3Tf4h0u](http://wenku.baidu.com/link?url=_mBcPfBBiyzcq2EYHEXbkr22nw3ocdrdYLwmOzk5fpUeqz_T1OQOxSdEVBp6_a6pVjOXKEmWAZoaq_Czo_0Tg6Hsmid_jamXjzPu3Tf4h0u) . Accessed 17 April 2017. (in Chinese)
- CQN. 2015. In 2014, the passing rate of hazard-free agriculture products sampled is 99.2%.  
<http://www.cqn.com.cn/news/zggmsb/diyi/1018828.html>. Accessed 23 March 2017. (in Chinese)
- Chu, J. H. 2014. 37 national organic product certification demonstration parks have been built in China.  
<http://www.cnfood.cn/n/2014/1231/43049.html>. Accessed 31 December 2016. (in Chinese)
- Ding, J.P, J.K. Huang, X.P. Jia, J.F. Bai, S. Boucher, and M. Carter .2015. Direct Farm, Production Base, Traceability and Food Safety in China. *Journal of Integrative Agriculture* 14(11): 2380–2390.
- Fan, H., Z. Ye, W. Zhao, He. Tian, Y. Qi and L. Busch .2009. Agriculture and food quality and safety certification agencies in four Chinese cities. *Food Control* 20(7): 627–630.
- Fang, Z., B. Z. Liang, and Y. K. Chen. 2013. Take efforts to create a new situation in the work of hazard-free and geographical labelling-National hazard-free and geographical labeling standards agriculture products symposium had held in Chongqin, China. *Quality and Safety of Agro-Products* 2, 82-83. (in Chinese)
- Green Food. 2007. The Concept. Green Food website. See [http://www.greenfood.org.cn/Html/2007-5-21/3675\\_4485\\_2007-5-21\\_4486.html](http://www.greenfood.org.cn/Html/2007-5-21/3675_4485_2007-5-21_4486.html). Accessed 8 August 2011.
- Guo, Y. M. 2011. The number of China's effective pollution-free agricultural products have reached more than 50000 by the end of 2010.  
[http://news.xinhuanet.com/politics/2011-03/19/c\\_121206873.htm](http://news.xinhuanet.com/politics/2011-03/19/c_121206873.htm). Accessed 19 March 2017. (in Chinese)
- Gong, Y. P., and H. Zhu. 2012. Development analysis on hazard-free, green, organic and geographical labelling standards. *Agricultural Economic* 9: 9–11. (in Chinese)
- Li, Y.H., R. Qi, and H.Y. Liu.2010. Designing Independent Regulatory System of Food Safety in China. *Agriculture and Agricultural Science Procedia* 1: 288–295.
- Liu, X. L. 2016. The goal and path analysis of hazard-free and geographical labelling in 13th Five-Year in China. *Quality And Safety Of Agro-Products* 2: 7-10. (in Chinese)

- Liu, X. F., and Q. Zhang. 2013. Development and countermeasure analysis on hazard-free, green, organic and geographical labelling in china. *Food and Nutrition in China* 2: 82-8. (in Chinese)
- Ni, H.G., and H. Zeng. 2009. Law enforcement is key to China's food safety. *Environmental Pollution* 157(7): 1990–1992.
- Qi, Y., Z. Ye, W. Zhao, H. Tian, H. Fan, and L. Busch. 2008. Third-party certification of agro-products in China: A study of Agro-product producers in Guangzhou, Shenzhen, Hangzhou and Qingdao. *Food Protection Trends* 28(11): 765–770.
- Qi, L. X., H. Y. Zhang, and Y. Han. 2015. The countermeasure of improving the quality and safety of hazard-free agriculture products. *Agricultural Development & Equipment* 4: 31–32. (in Chinese)
- Wang, Z., Y. Mao, and F. Gale. 2008. Chinese consumer demand for food safety attributes in milk products. *Food Policy* 33(1): 27–36.
- Willer, H., and L. Kilcher. 2009. The World of Organic Agriculture: Statistics and emerging trends 2009. In *The World of Organic Agriculture: Statistics and emerging trends 2009*: IFOAM, Bonn and FiBL (Research Institute of Organic Agriculture), Frick.
- Xu, P., Y. Zeng, Q. Fong, T. Lone, and Y. Liu. 2012. Chinese consumers' willingness to pay for green- and eco-labeled seafood. *Food Control* 28(1): 74–82.

Table 1. Institutions governing agricultural standards in China.

	<b>Hazard-free</b>	<b>Green Food</b>	<b>Organic Food</b>	<b>Geographic Labelling</b>
<b>Compulsory</b>	Yes	No	No	No
<b>Validity duration</b>	3 years	3 years	1 year	Unspecified years
<b>Products</b>	Crop; animal and aquatic; primary processed; microbiological	Whole food; <sup>1</sup> food-related drugs	Whole food	Whole food
<b>Administrative institutions</b>	Agricultural Quality and Safety Center (AQSC), Ministry of Agriculture	The Green Food Development Center, GFDC (Administrative agency of Ministry of Agriculture)	Private agencies approved by Certification and Accreditation Administration (CNCA); Quality Certification Center (CQC) of AQSIQ	the State Administration for Industry & Commerce (SAIC); Agricultural Quality and Safety Center (AQSC), Ministry of Agriculture; AQSIQ
<b>Decentralization</b>	State → Province → Prefecture	State → Province	State	State
<b>Application procedure</b>	<ul style="list-style-type: none"> <li>• Application review (15 days)</li> <li>• On-site inspections and report (10 days)</li> <li>• Sampling and laboratory analysis by local agencies (unspecified days)</li> <li>• Final evaluation and issue certification (15 days)</li> </ul>	<ul style="list-style-type: none"> <li>• Application review (10 days)</li> <li>• Sampling products and inspection by local agencies (20 days)</li> <li>• On-site field inspection on the environment (30 days)</li> <li>• Submit the results GFDC (20 days)</li> <li>• Evaluation by GFDC (30 days)</li> <li>• Issue certification (5 days)</li> </ul>	<ul style="list-style-type: none"> <li>• Application review (10 days)</li> <li>• On-site inspection and submit the case to CNCA (5 days)</li> <li>• Inspections on products, production site, and the environment (unspecified days)</li> </ul>	<ul style="list-style-type: none"> <li>• Application review by the provincial administrations</li> <li>• Application processed by AQSC (45 days)</li> <li>• Inspection and evaluations by committees (20 days)</li> </ul>
<b>Legal framework and document</b>	<p>“Procedure of Certifying Hazard-free Agriculture the Ministry of Agriculture and Certification and Accreditation Administration (CNCA) of the PRC.”</p> <p><a href="http://www.moa.gov.cn/sydw/ynzx/zcfg/200502/t20050224_2500868.htm">http://www.moa.gov.cn/sydw/ynzx/zcfg/200502/t20050224_2500868.htm</a></p>	<p>“The Bill of Green Food Certification and Management, Ministry of Agriculture, 2012, No. 6.”</p> <p><a href="http://www.moa.gov.cn/zwl/m/tzgg/bl/201208/t20120802_2814698.htm">http://www.moa.gov.cn/zwl/m/tzgg/bl/201208/t20120802_2814698.htm</a></p>	<p>“The Bill of Organic Certification and Management, General Administration of Quality Supervision, Inspection and Quarantine of the PRC” (Bill No. 155).</p> <p><a href="http://www.aqsiq.gov.cn/xxgk_13386/jlwg_12538/zjl/2013/201311/t20131120_387865.htm">http://www.aqsiq.gov.cn/xxgk_13386/jlwg_12538/zjl/2013/201311/t20131120_387865.htm</a></p>	<p>“The Bill of Geographic labelling and Management, Ministry of Agriculture, 2007, No. 11.”</p> <p><a href="http://www.moa.gov.cn/zwl/m/tzgg/bl/200801/t20080109_951594.htm">http://www.moa.gov.cn/zwl/m/tzgg/bl/200801/t20080109_951594.htm</a></p>

Note: <sup>1</sup> Not include processed food such as instant noodles, ham sausage, pickled vegetables, etc.

Table 2. Production of hazard-free, green, organic and geographical labelling standards in China.

Year	2010	2011	2012	2013	2014	2015
Production (million tons)						
Hazard-free <sup>1</sup>	63	74	63	52	145	123
Green food <sup>2</sup>	33	39	42	46	49	55
Organic food <sup>2</sup>	1.7	1.9	0.6	0.9	1.2	1.7
Geographical labelling	–	–	–	–	–	–
The number of certifications						
Hazard-free	56,500 <sup>3</sup>	62,145 <sup>4</sup>	74,529 <sup>5</sup>	77,569 <sup>6</sup>	80,000 <sup>7</sup>	78,000 <sup>8</sup>
Green food <sup>2</sup>	16,748	16,825	17,125	19,076	21,153	–
Organic food	5,598 <sup>2</sup>	6,000 <sup>9</sup>	2,762 <sup>10</sup>	–	3,300 <sup>7</sup>	–
Geographical labelling <sup>1</sup>	535	835	1,047	1,375	1,588	1,792
Planting area (%)						
Hazard-free	–	45 <sup>9</sup>	49 <sup>5</sup>	–	–	–
Green food <sup>2</sup>	5.7	6.5	7.0	6.6	8.2	–
Organic food	1.9 <sup>2</sup>	–	–	–	2.1 <sup>11</sup>	–
Geographical labelling	–	–	–	–	–	–

*Note:* <sup>1</sup> Agricultural Quality and Safety Center (AQSC), China Ministry of Agriculture;

<sup>2</sup> Green Food Development China (GFC); <sup>3</sup> (Guo 2011); <sup>4</sup> (BAIDU 2014); <sup>5</sup> (Fang et al. 2013); <sup>6</sup> (Qi et al. 2015); <sup>7</sup> (CQN 2015); <sup>8</sup> (Liu 2016); <sup>9</sup> (Gong and Zhu 2012); <sup>10</sup> (Liu and Zhang 2014); <sup>11</sup> (Chu 2014).

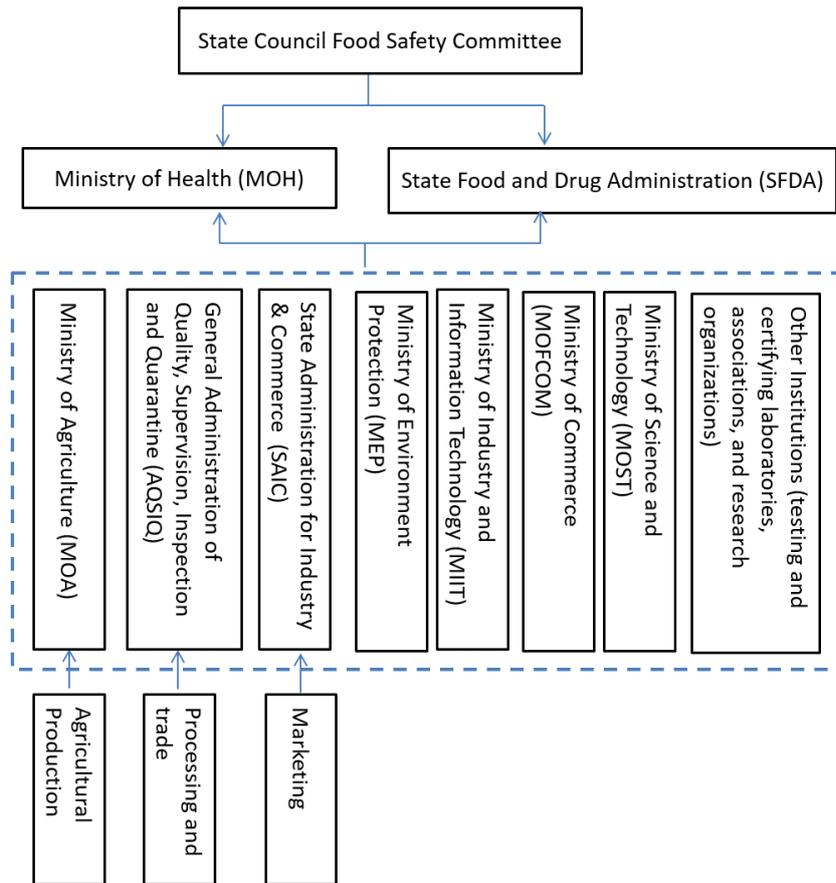


Figure 1. Food system of assuring quality and safety in China.