IMPROVING THE ENFORCEABILITY OF THE GENETICALLY MODIFIED FOOD LABELING LAW IN CHINA WITH LESSONS FROM THE EUROPEAN UNION

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I. RESEARCH BACKGROUND AND GOAL

A. Benefits and Risks of Genetically Modified Food Technology

Genetically modified food (GM food) is a food that consists of, contains, or is produced from genetically modified organisms (GMOs).[1] "A

1. Council Regulation 1829/2003, of the European Parliament and of the Council of 22 Sept. 2003 on genetically modified food and feed, 2003 O.J. (L 268) 3 [hereinafter EU 1829/2003].

[GMO] is an organism whose genetic structure has been altered by incorporating a gene that will express a desirable trait."[2]

GMO technology provides many societal benefits, but poses unknown and unprecedented risks to human health and environmental safety. However, GMO techniques could produce crops with new and beneficial qualities. For example, GMO technology can produce vitamin enriched products and crops that are resistant to pests, herbicides, disease, cold temperatures, high salinity, and viruses.[3] In terms of social benefits, GMOs could reduce production costs by reducing chemical and mechanical inputs during the planting, growing, and harvesting stages. GMO techniques could also reduce pesticide use to protect the environment.[4]

Nevertheless, GMOs may present potential risks to human health. For example, there is a possibility of undetected increase of a toxic component in GM food, a risk of allergic reactions,[5] antibiotic resistance,[6] and other unknown effects on human health. GMOs are also potential ecological and environmental hazards because they may harm other organisms, reduce the effectiveness of pesticides, and result in gene transfer to non-target species through cross-pollination causing genetic pollution. Although the ecological impacts resulting from the vast introduction of GMOs are still unknown, such impacts may be most consequential to the maintenance of plant genetic variability and may ultimately harm humanity's continued health and well being.[7]

George Wald, Nobel laureate in medicine and physiology and Higgins professor of biology at Harvard University, spoke about the dangers of genetically engineered foods:

> Recombinant DNA technology [genetic engineering] faces our society with problems unprecedented, not only in the history of science, but of life on the Earth. . . . Now whole new proteins will be transposed overnight into wholly new associations, with consequences no one could foretell, either for the host organism or their neighbors. . . . For going ahead in this direction may not only

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2. Sereana Howard Dresbach et al., *The Impact of Genetically Modified Organisms on Human Health*, OHIO STATE UNIV., http://ohioline.osu.edu/hyg-fact/5000/5058.html (last visited Feb. 2, 2013).

3. Deborah B. Whitman, *Genetically Modified Foods: Harmful or Helpful?*, CSA.COM (Apr. 2000), http://www.csa.com/discoveryguides/gmfood/overview.php.

4. Dresbach et al., *supra* note 2.

5. *Id.*

6. *GMO Foods*, GREENPEACE.ORG, http://www.greenpeace.org/canada/en/campaigns/ge (last visited Feb. 3, 2013).

7. *GMOs and Ecological Impacts*, ENVTL. COMMONS, http://environmentalcommons.org/gmo-impacts.html (last visited Feb. 14, 2013).

> be unwise, but dangerous. Potentially, it could breed new animal and plant diseases, new sources of cancer, novel epidemics.[8]

Facing the potential risks from GM food, the Cartagena Protocol on Biosafety to the Convention on Biological Diversity (CPB) suggests using labeling as one of the methods for the safe use of living modified organisms as food or feed, or for processing.[9]

B. China's GM Food Labeling Laws and the Dysfunction of Enforcement

In order to provide consumers the right to know and to prevent potential risks of GM food, in May 2001 China's State Council enacted its first regulation for GMO safety management: Regulations on Agro-GMO Biosafety Management (农业转基因生物安全管理条例).[10] This regulation is the core regulation for GMO safety management in China. It establishes mandatory labeling requirements for all GMO sales. The requirements include, for example, listing out the names of the main ingredients containing GMO and the geographical regions of sales if required. The regulation also prescribes the punishment of violations. The Ministry of Agriculture under the State Council is responsible for both the implementation and the enforcement of GMO labeling requirements.

In January 2002, in accordance with the Regulations on Agro-GMO Biosafety Management, the Ministry of Agriculture enacted an administrative rule: Management Measures on Agro-GMOs Labeling (农业转基因生物标识管理办法) (MMAGL).[11] This rule specifically targets GMO labeling. It authorizes the agencies under the Ministry of Agriculture to supervise and manage the compliance of GMO labeling requirements, including the review and approval of GMO labeling for imported products. Moreover, this rule specifies detailed requirements for

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8. George Wald, *The Case Against Genetic Engineering*, THE SCIENCES (Sept./Oct., 1976).

9. Cartagena Protocol on Biosafety to the Convention on Biological Diversity, Annex I & II (2000), *available at* http://www.cbd.int/doc/legal/cartagena-protocol-en.pdf.

10. Nongye Zhuanjiyin Shengwu Anquan Guanli Tiaoli (农业转基因生物安全管理条例) [Regulations on Agro-GMO Biosafety Management] (promulgated by the State Council on May 23, 2001, effective May 23, 2001), *available at* http://vip.chinalawinfo.com/newlaw2002/slc/slc.asp?db=chl&gid=35608.

11. Nongye Zhuanjiyin Shengwu Biaozhi Guanli Banfa (农业转基因生物标识管理办法) [Management Measures on Agro-GMO Labeling] (promulgated by the Dep't of Agric. on Jan. 5, 2002, effective March 20, 2002), *available at* http://vip.chinalawinfo.com/newlaw2002/slc/slc.asp?db=chl&gid=38699 [hereinafter China Management Measures on Agro-GMO Labeling].

labeling content and methods. Furthermore, it defines the first batch of food products subject to the labeling regulation.

Almost ten years after the enactment of the MMAGL, the status of enforcement is far from satisfying. Despite the mandatory GM food labeling requirements, not all GM foods are labeled, and there is a lack of standardization among GM food and GMO-free food labeling in China's food market. Even when food products have GM food labeling, the labels are not clearly visible. In addition to the enforcement issues, the rulemaking is outdated. The very narrowly defined first batch of products under the MMAGL is insufficient to cover the broad range of GM food in the market.[12]

Food with GM soybeans is one example. In 2007, China imported 37.8 million metric tons of soybeans, and the United States, Brazil and Argentina accounted for thirty-six, thirty-three and twenty-nine percent, respectively.[13] "The United States (85%) and Argentina (98%) produce almost exclusively GM soybeans."[14] In 2007, sixty-four percent of Brazil's soybean crop was GM soybeans.[15] Therefore, a large percentage of soybeans in China's market are imported GM soybeans. A market survey report conducted in Tianjin, China in 2008, however, revealed that none of the soybeans or soybean powder had GM food labeling.[16] The lack of GM food labeling for soybeans or soybean powder in the market reveals insufficient compliance with the MMAGL.

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12. Duan Xiaoli (段晓丽), *Woguo Zhuanjiyin Nongchanpin Biaozhi Zhidu De Wenti Ji Wanshan* (我国转基因农产品标识制度的问题及完善) [*The Problems in China's Labeling Regulations for Genetically Modified Agriculture Products and the Improvements*], 11 SHANXI CAIJING DAXUE XUEBAO-GAODENG JIAOYU BAN (山西财经大学学报-高等教育版) [J. SHANXI FIN. & ECON. U. HIGHER EDUCATION EDITION] 14 (2008) (China); *see also* Beijing Science and Technology News, *Zhongguo Jiangdui Zhuanjiyin Shengwu Anquan Lifa Huanbaobu Qicao Faan—Beijing Kejibao Caifang Yu Wenxuan*
(中国将对转基因生物安全立法 环保部起草法案—北京科技报采访于文轩) [*China Plans to Enact Law for Biodiversity—Ministry of Environmental Protection Draft Legislation—Interview by Beijing Science and Technology News with Wenxuan Yu Regarding the Draft of Biodiversity Legislation*], RENMIN WANG (人民网) [PEOPLE.COM.CN] (Jan. 7, 2011), http://env.people.com.cn/GB/13678194.html.

13. WEI CHEN ET AL., CHINA'S SOYBEAN IMPORTS—PRICE IMPACTS USING A PRODUCTION SYSTEM APPROACH 1 (2010), *available at* http://ageconsearch.umn.edu/bitstream/56528/2/2010-%20SAEA%20Paper%20%20%20China%E2%80%99s%20Soybean%20Imports.pdf.

14. *Soybeans*, GMO COMPASS, http://www.gmo-compass.org/eng/grocery_shopping/crops/19.genetically_modified_soybean.html (last visited Feb. 14, 2013).

15. *Id.*

16. Wang Yong et al. (王永 等), *Tianjinshi Zhuanjiyin Shipin Biaozhi Xianzhuang Diaocha* (天津市转基因食品标识现状调查) [*Investigation on Labeling of Genetically Modified Food in Tianjin*], 14 TIANJIN AGRIC. SCI. 9 (2008) (China).

The same survey report shows that ninety-six percent of the soybean oil has GM food labeling,[17] but there are eight different kinds of GM food labeling for soybean oil among twenty-four products selected.[18] For GMO-free food labeling, there are fourteen different kinds of labels and most of the GMO-free foods are not certified.[19]

Various reasons exist behind the lack of compliance and enforcement of the MMAGL. One of the most important is the enforceability of the legislation itself. There are several issues in terms of the enforceability in the rulemaking. First, the zero percent tolerance without a reasonable adventitious presence threshold is both unrealistic and misleading. An adventitious threshold allows adventitious or technically unavoidable presence of genetically modified material in foods.[20] Second, the language in the legislation provision that specifies labeling methods is vague. Third, the coverage of products subject to labeling is both widely defined in the provision and narrowly listed for the first batch of food subject to labeling, and therefore causes confusion. Fourth, the legislation does not implement traceability—it does not trace GMOs and products produced from GMOs at all stages of their path to market through the production and distribution chains,[21] even though traceability is a key to ensure the accuracy of labeling.

C. What China Can Learn from the EU and Customize to China's Situation

Since China opened its doors to the world in late the 1970s, it has been striving to catch up with other countries in the development of various areas, including technology, science, and legislation. In terms of legislation, many Chinese laws are modeled after the laws of other countries in certain aspects. For GM food labeling legislation, China's legislation resembles the EU's legislation by adopting mandatory labeling requirements.[22] Therefore, the lessons from the EU's GM food labeling laws will help China avoid the problems encountered by the EU's legislation and guide China in improving its legislation.

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17. *Id.*
18. *Id.* at 9, 10.
19. *Id.* at 10.
20. EU 1829/2003, *supra* note 1, at 3.
21. Regulation 1830/2003, of the European Parliament and of the Council of 22 Sept. 2003 Concerning the Traceability and Labeling of Genetically Modified Organisms and the Traceability of Food and Feed Products Produced From Genetically Modified Organisms and Amending Directive 2001/18/EC, 2003 O.J. (L 268) 25, 26 (EC) [hereinafter EU 1830/2003].
22. Guillaume P. Gruère, *Labeling Policies of Genetically Modified Food Lessons from an International Review of Existing Approaches* 1 (2007), *available at* http://www.ifpri.org/sites/default/files/publications/pbsbrieflabeling.pdf.

While China's GM food labeling legislation resembles the EU's legislation, China's legislation, in certain aspects, is more stringent. For example, in the MMAGL, the zero percent tolerance without adventitious presence threshold is stricter than the 0.9% threshold in the EU's legislation. [23] These more stringent requirements reflect China's commitment to achieving the best legislation for GM food labeling, which is definitely worthy of praise. The resulting legislation, however, is not satisfying in terms of enforceability. One reason is that China does not sufficiently customize its legislation to the country's social conditions. Hence, even if China has the best and the most stringent GM food labeling laws, without the possibility of full enforcement, the law is only an empty promise. In the end, the government will lose its credibility in failing to enforce its legislation and trigger resentment and complaints from the public.

D. Research Goal

Our research goal is to address the enforceability issue in China's current GM food labeling legislation. By combining the lessons from the EU's GM food labeling legislation and the analysis of China's social conditions, we have formulated proposals to improve the enforceability of China's GM food labeling legislation.

II. OVERVIEW OF GM FOOD LABELING LAWS IN THE EU AND CHINA

A. Principles and Purposes of GM Food Labeling Laws in the EU and China

Currently, there are many different approaches to GM food labeling legislation among countries. The three major producers and exporters of GM crops (i.e. the United States, Argentina, and Canada) have adopted voluntary labeling approaches.[24] On the other hand, large importers that do not produce GM crops (or produce GM crops in very limited areas), such as the EU countries and China, have adopted mandatory labeling requirements.[25]

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23. *Id.*

24. Guillaume P. Gruère & S.R. Rao, *A Review of International Labeling Policies of Genetically Modified Food to Evaluate India's Proposed Rule*, 10 J. AGROBIOTECHNOLOGY MGMT. & ECON., 1.6 (2007), *available at* http://www.agbioforum.org/v10n1/v10n1a06-gruere.htm.

25. *Id.*

Notwithstanding insufficient scientific data to permit a complete evaluation of the risk of GM food, both the EU and China adopted the precautionary principle to enable "rapid response in the face of a possible danger to human, animal or plant health, or to protect the environment."[26] The precautionary principle uses GM food labeling as an approach to stop distribution or order withdrawal from the market of likely hazardous products.[27] Such labeling laws targets GM technology as a production process because it assumes that the process itself poses unique risks.[28] Therefore, any product derived from GM crops must be labeled, regardless of whether the product contains any traces of GM material.

Another purpose of GM food labeling is to protect the consumers' right to know. With the mandatory labeling of GM food, consumers will have better knowledge of whether the product is a GM product, and consequently make informed choices. International consumer organizations, like Consumers International (CI) and its members, overwhelmingly support mandatory labeling of GM food.[29] Both the EU and China recognize the consumers' right to information and labeling as a tool for making an informed choice. Therefore, they both require mandatory GM food labeling.

On the other hand, China has a strong national interest in developing GMO technology to protect its national security in food supply.[30] For example, due to water shortage, China is in urgent need of developing drought-resistant GMOs.[31] Therefore, China needs to balance the interests between the consumers and the industries in enacting its GM food labeling legislation.

B. Similarities and Differences Between the EU and China's Legislation

In summary, both the EU and China require mandatory GM food labeling. Both laws target GM technology as a production process and require GM food labeling on products that contain or consist of GMOs, or are produced from GMOs.

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26. *The Precautionary Principle*, EUROPA.EU, http://europa.eu/legislation_summaries/food_safety/general_provisions/l32042_en.htm (last updated Dec. 4, 2011).

27. *Id.*

28. WENXUAN YU (于文轩), SHENGWU ANQUAN LIFA YANJIU (生物安全立法研究) [RESEARCH ON BIODIVERSITY LEGISLATION] 33 (2009).

29. *Our Activity*, CONSUMERS INTERNATIONAL CONSUMERS, http://www.consumersinternational.org/our-work/food/key-projects/codex/our-activity (last visited Jan. 28, 2013).

30. Mu Xuequan, *GM Food: Hope or Fear for the Chinese?*, XINHUANET.COM (Oct. 16, 2010), http://news.xinhuanet.com/english2010/china/2010-10/16/c_13559695.htm.

31. *Id.*

The EU's GM food labeling legislation regulates the traceability of food and feed products produced from genetically modified organisms.[32] The traceability implementation ensures that relevant GMO information is available at each stage of the GM food production process and thereby facilitates accurate labeling. Although China's current GM food labeling legislation—the MMAGL is also a process-based regulation, it did not set up a sufficient mechanism to implement the traceability.[33] Therefore, China's MMAGL is missing a key element in implementing the full scope of the precautionary principle.[34]

Moreover, the EU sets an adventitious presence threshold for exemption.[35] This threshold makes the law enforcement feasible by acknowledging the fact of the adventitious or technically unavoidable presence of GM material in foods. Unlike the EU, China does not acknowledge any adventitious presence threshold in the MMAGL.[36]

In addition, the EU defines specific details of labeling requirements and covers a broad scope of products ranging from food to feed.[37] In contrast, the labeling requirements in China's MMAGL are vague.[38] The MMAGL defines a limited list of food subject to regulation.[39]

Table: Summary of Key Elements in GM Food Labeling Legislation in the EU and China

Key Elements	The EU	China
Mandatory GM Food Labeling	Yes	Yes
Process-based regulation	Yes	Yes
Traceability	Yes	No
Adventitious presence threshold exemption	0.9%	No
Labeling requirements	Specific	Vague
Scope of products	Broad	Narrow

32. EU 1830/2003, *supra* note 21, at 27 (Article 5—Traceability requirements for products for food and feed produced from GMOs).

33. China Management Measures on Agro-GMO Labeling, *supra* note 11.

34. Beijing Science and Technology News, *supra* note 12.

35. EU 1830/2003, *supra* note 21, at 27 (Article 7—"not apply to traces of authorised GMOs in a proportion no higher than 0.9% or lower thresholds established under the provisions of Article 30(2), provided that these traces are adventitious or technically unavoidable").

36. China Management Measures on Agro-GMO Labeling, *supra* note 11.

37. EU 1830/2003, *supra* note 21, at 25, 26 (Article 2—Scope; Article 4—B. Labelling).

38. China Management Measures on Agro-GMO Labeling, *supra* note 11, § 7.

39. *Id.*

III. REVIEW OF THE EU'S EVALUATION REPORT OF GM FOOD LABELING LEGISLATION

Because China's GM food labeling legislation resembles the EU's legislation in many aspects, the lessons from the EU's GM food labeling laws will be valuable to help China avoid similar problems that the EU encountered. The EU's experience with GM food labeling legislation can guide China's own legislative improvements.

The EU is one of the leaders in GM food labeling laws and has accumulated many years experience from its implementation. Since 1997, the EU has made labeling of GM food mandatory in Regulation (EC) No. 258/97.[40] Moreover, the EU is continuously reviewing its legislation for improvement. In 1998, the EU released Regulation (EC) No. 1139/98 to cover the labeling of GM maize varieties and GM soy varieties, which did not fall under Regulation (EC) No. 258/97.[41] In 2000, the EU released Regulation (EC) No. 50/2000, which required all GM additives and GM flavorings to be labeled.[42] In 2003, the EU released Regulation (EC) No. 1829/2003 and Regulation (EC) No. 1830/2003.[43] Regulation (EC) No. 1829/2003 applies to both food and feed that contain GMOs or are produced from or contain ingredients produced from GMOs.[44] Regulation (EC) No. 1830/2003 regulates both the traceability and labeling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms.[45]

On October 28, 2011, the EU released its latest report, the *Evaluation of the EU legislative framework in the field of GM food and feed*.[46] Among the evaluation of various regulations in GM food and feed, this report provides the latest and most comprehensive evaluation of the EU's GMO labeling laws. There are two key issues in the EU's GM food labeling legislation. One is the function of labeling in balancing between consumer knowledge

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40. European Parliament and Council (EC) No. 258/97 of 27 Jan. 1997, p. 1, art. 8.

41. European Council Regulation (EC) No. 1139/98 of 26 May 1998, p. 1–2.

42. *GM Food & Feed—Labelling*, EUROPA.EU, http://ec.europa.eu/food/food/biotechnology/gmfood/labelling_en.htm (last visited Feb. 14, 2013).

43. *Food and Feed (GMO)*, EUROPA.EU, http://europa.eu/legislation_summaries/agriculture/food/l21154_en.htm (last visited Feb. 14, 2013).

44. *Id.*

45. *Traceability and Labeling of GMOs*, EUROPA.EU, http://europa.eu/legislation_summaries/agriculture/food/l21170_en.htm (last visited Feb. 14, 2013).

46. FOOD CHAIN EVALUATION CONSORTIUM, EVALUATION OF THE EU LEGISLATIVE FRAMEWORK IN THE FIELD OF GM FOOD AND FEED (2012), *available at* http://ec.europa.eu/food/food/biotechnology/evaluation/docs/evaluation_gm_report_en.pdf; *GMOs: EU's Legislation on the Right Track, Evaluation Reports Conclude*, EUROPA.EU, http://europa.eu/rapid/press-release_IP-11-1285_en.htm (last visited Feb. 2, 2013).

and consumer choice.[47] Another is the impact of the labeling requirements on GM food price.[48]

A. Consumer Knowledge and Choice

The purpose of labeling laws is to provide the consumer with information so he or she can make an informed choice. One of the problems discovered in the EU's evaluation report is that the EU's consumers have a lack of choice.[49]

In the late 1990s, to avoid the potential cost of lost sales and damage to the brand image by manufacturing GM food, European food manufacturers completely withdrew from GM food.[50] Because of the limited quantity of GM ingredients in food products at that time, the marginal cost of reformulating with non-GM ingredients is lower than the potential cost of losing market share.[51] Consequently, the availability of GM labeled food products in the EU is currently extremely limited.[52] The range of GM labeled products consists primarily of soybean cooking oil and some imported products.[53] There is no retailer's brand of GM products.[54] According to the EU's report, "[t]he main external factor limiting the choice of the European consumers with respect to their purchases of GM food is their availability in stores."[55] According to food chain operators, the labeling legislation removed consumer choice and it does not facilitate an informed consumer decision.[56]

B. Socio-Economic Impact on GM Food Price

"[A]s supply of non-GM raw materials has become more restricted, however, the cost of segregation and Identity Preservation has increased."[57] Identity Preservation of non-GMOs is the practice of using technical and managerial techniques to track and document the paths that non-GMO

47. FOOD CHAIN EVALUATION CONSORTIUM, *supra* note 46, at 97.
48. *Id.* at 107.
49. *Id.* at 101.
50. *Id.* at 107.
51. *Id.*
52. *Id.* at 113.
53. *Id.*
54. *Id.*
55. *Id.* at 115.
56. *Id.* at 101.
57. *Id.* at 110.

products move in the production process.[58] "A fully integrated [Identity Preservation] system might track and document a [non-GMO's] seed characteristics, initial planting, growing conditions, harvesting, shipping, storage, processing, packaging, and ultimate sale to the consumer."[59] The impact of increased cost is diluted in the final consumer prices.[60] As for GM food products in Europe, the food producers "made changes to their supply chains before the introduction of the 2003 legislation[,] either in response to pressure from non-governmental organizations and/or consumer demand."[61] Therefore, the labeling provisions under Regulation (EC) No. 1830/2003 have limited direct impact on the food producers.[62]

For the feed supply chain, the effect on consumer price is more substantial.[63] There are initially both GM and non-GM segments.[64] The non-GM segment bears the additional costs of segregation and Identity Preservation.[65] The reductions in the availability of non-GM supply have resulted in a substantial increase of segregation and Identity Preservation costs.[66] Therefore, for feed products, "the impact on consumer prices cannot be seen as negligible anymore."[67]

IV. ANALYSIS OF CHINA'S SOCIAL CONDITIONS FOR THE ENFORCEMENT OF GM FOOD LABELING LEGISLATION

China is different from the EU in many social aspects. Chinese consumers are relatively less concerned about GMOs in food safety as compared to European consumers. Chinese consumers have lower income levels than European consumers; therefore, the price difference between non-GM food and GM food plays a more important role in Chinese consumers' choice between the two. Moreover, China's food industry is not strictly regulated, because of its vast numbers of small-scale food producers and processors. In order to make legislation effective and enforceable, China must customize its legislation to its own social conditions.

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58. *Identity Preservation*, WIKIPEDIA.ORG, http://en.wikipedia.org/wiki/Identity_preservation (last visited Feb. 14, 2013).
59. *Id.*
60. FOOD CHAIN EVALUATION CONSORTIUM, *supra* note 46, at 171.
61. *Id.*
62. *Id.*
63. *Id.*
64. *Id.*
65. *Id.*
66. *Id.*
67. *Id.*

A. Consumer Demand

One of the main purposes of GM food labeling laws, like any food labeling law, is to enhance the consumers' rights to know and choose. Therefore, legislation should be tailored to consumer demand. The key questions about consumer demand are whether consumers are concerned about GM food and whether consumers want to have choices between GM and non-GM food.

Because the legislation implementation usually incurs substantial costs for both the stakeholders (e.g. farms, distributors and food producers) and the government, these costs will eventually be imposed on the end consumers. Thus, the consumers' acceptance of the premium price for non-GM food is another important factor to consider when implementing GM food labeling legislation.

In December 2010, Greenpeace issued two consumer survey reports on GMOs and GM food in China. One report is based on surveys of the consumers in Beijing, Shanghai, and Guangzhou (CBSG).[68] Another one is based on surveys of the consumers in Wuhan and Changsha (CWC).[69] Together, these two reports surveyed around 1,000 consumers between the ages of eighteen and sixty-four. Both reports found similar results in many key areas.

1. Consumer Concern and Consumer Choice

According to the reports, ninety-seven percent of CBSG and ninety percent of CWC have heard about the concept of GMOs and GM food.[70] Of those who have heard of the concept, ninety-seven percent of the consumers want to have GM food labeled, and sixty-two percent of CBSG and sixty-

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68. GREENPEACE & QINGHUA DAXUE MEIJIE DIAOCHAO SHIYANSHI (清华大学媒介调查实验室) [TSINGHUA UNIVERSITY MEDIA SURVEY LAB], ZHUANJIYIN ZUOWU JI SHIPIN XIAOFEIZHE DIAOYAN BAOGAO (转基因作物及食品消费者调研报告) [CONSUMER SURVEY REPORT ON GMOS AND GM FOOD IN BEIJING, SHANGHAI, AND GUANGZHOU] (2010), *available at* http://www.greenpeace.org/china/Global/china/publications/campaigns/food-agriculture/2011/ge-research-bsg-2011.pdf [hereinafter CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU].

69. GREENPEACE & QINGHUA DAXUE MEIJIE DIAOCHAO SHIYANSHI (清华大学媒介调查实验室) [TSINGHUA UNIVERSITY MEDIA SURVEY LAB], ZHUANJIYIN ZUOWU JI SHIPIN XIAOFEIZHE DIAOYAN BAOGAO (转基因作物及食品消费者调研报告) [CONSUMER SURVEY REPORT ON GMOS AND GM FOOD IN WUHAN AND CHANGSHA] (2010), *available at* http://www.greenpeace.org/china/Global/china/publications/campaigns/food-agriculture/2011/ge-research-wch-2011.pdf [hereinafter CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA].

70. *Id.* at 6; *Soybeans*, *supra* note 14; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 18.

eight percent of CWC have strong concerns about GM food's potential risk on human health. Most of the consumers pay attention to the labels (often, sometimes or occasionally), while twenty-nine percent of CBSG and fifteen percent of CWC never check the labels.[71] Therefore, a mandatory GM food labeling legislation would satisfy the consumers' demand to know.

In terms of GMO's impact on food safety, thirty-three percent of CBSG and forty-one percent of CWC think that GMOs have a strong or certain negative impact on food safety.[72] The 2011 European Commission asked the EU respondents whether they think it is true that food derived from GMOs is dangerous.[73] More than half (fifty-six percent) agreed that it was.[74] Accordingly, Chinese consumers seem to be less concerned about GM food safety than European consumers.

As for the consumers' attitude towards the food processing and producing involving GMOs, only around twenty percent of CBSG and thirty percent of CWC hold objections.[75] When the consumers know that the food they are purchasing is GM food, forty-two percent of CBSG and twenty-six percent of CWC will continue to buy the same quantity; thirty-seven percent of CBSG and forty-eight percent of CWC will continue to purchase GM food, but with less quantity; and twenty-one percent of CBSG and twenty-six percent of CWC will immediately stop purchasing such food items.[76] Thus, about eighty percent of Chinese consumers would continue to purchase GM food if labeled.

In summary, most Chinese consumers want to have GM food labeling because they want to know whether the food contains GMOs. Chinese consumers are less concerned about GMOs in food safety as compared to European consumers. Chinese consumers do not completely reject GM food and want the choice between GM food and non-GM food. Therefore, mandatory GM food labeling legislation in China will satisfy the consumers' rights to know, and give consumers the choice to purchase either GM food or non-GM food.

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71. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 9; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 32.

72. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 17; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 24.

73. FOOD CHAIN EVALUATION CONSORTIUM, *supra* note 46.

74. *Id.* at 142.

75. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 15; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 34.

76. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 11–12; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 30.

2. Cost of Implementation and Consumer Price

The cost of GM food labeling implementation is an important factor to consider. The cost depends on several factors, such as the level of adventitious presence threshold, the coverage of products under regulation, and the scope of traceability implementation. The more stringent the regulation is, the bigger investment that non-GM food operators need to spend on implementing the segregation and Identity Preservation. At the same time, it will cost the government more to implement and enforce the law by spending on testing facilities and personnel training. These costs will eventually be reflected in the consumer price, mostly for non-GM food. According to the EU's evaluation report, the reductions in the availability of non-GM supply have resulted in a substantial increase of segregation and Identity Preservation costs for the non-GM segment of the feed industry.[77] Accordingly, the impact on consumer prices could not be seen as negligible.

In terms of Chinese consumers' purchasing decisions in response to price, there are noticeable differences between the two reports from Greenpeace in China. Wuhan and Changsha are two medium-sized cities in China with moderate income levels, while Beijing, Shanghai, and Guangzhou are the biggest cities with the highest income levels in China. When the non-GM food and GM food have the same price, fifty percent of the consumers in Wuhan and Changsha (CWC) and sixty-one percent of the consumers in Beijing, Shanghai, and Guangzhou (CBSG) prefer to buy non-GM food.[78] When the non-GM food is thirty percent more expensive than GM food, thirty-three percent (down from fifty percent) of the CWC and fifty-one percent (down from sixty-one percent) of the CBSG would continue to choose non-GM food.[79]

Apparently, the income level and the price difference between non-GM food and GM food play important roles in Chinese consumers' choice between GM and non-GM food. Similarly, according to the EU's evaluation report, a majority of consumers make purchasing decisions primarily on price and brand considerations.[80] Therefore, in order to make the GM food labeling legislation enforceable, China's legislature should evaluate the implementation cost for government and the industry, as well

77. FOOD CHAIN EVALUATION CONSORTIUM, *supra* note 46, at 147.

78. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 14; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 29.

79. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 14; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 29.

80. FOOD CHAIN EVALUATION CONSORTIUM, *supra* note 46, at 99 (noting that brand and pricing are considered the most important information on the label).

as the cost eventually imposed on consumer price. By balancing the cost with the benefit provided by the GM food labeling to consumers, the legislation could provide customers with a meaningful and affordable choice between GM food and non-GM food.

B. Market Conditions

In addition to the consumer demand, there are other market conditions to consider in designing an enforceable legislation. The broader the market to be regulated, the higher the cost will be to implement the regulation. Moreover, the more fragmented and unregulated the food industry is, the more difficult the implementation and enforcement will be.

1. GM Food Varieties

The cost of implementation of GM food labeling regulation will depend on the number of GM food varieties in the market. Soybeans are one example. From October 2007 to September 2008, China imported 37.8 million metric tons of soybeans, and the United States, Brazil, and Argentina accounted for thirty-six percent, thirty-three percent, and twenty-nine percent of Chinese soybean imports, respectively.[81] Eighty-five percent of the United States soybean crop and ninety-eight percent of the Argentinian soybean crop is genetically modified.[82] In 2007, sixty-four percent of Brazil's soybean crop was genetically modified.[83] As a result, a high percentage of soybeans in China are GMOs. Soybeans are used to produce soybean oil and numerous foods, food ingredients, and additives. Lecithin extracted from soybeans, for example, is used as an emulsifier in chocolate, ice cream, margarine, and baked goods. According to the MMAGL, all the food products containing or consisting of, or produced from soybeans are subject to the regulation.[84] Consequently, there would be a vast number of GM food varieties derived from GM soybeans requiring GM labeling, and the full implementation will involve a huge cost.

81. CHEN ET AL., *supra* note 13, at 1.
82. *Soybeans*, *supra* note 14.
83. *Id.*
84. China Management Measures on Agro-GMO Labeling, *supra* note 11, § 6.

2. Fragmented Food Industry

Additionally, China's food industry is not strictly regulated because of its vast number of small-scale food producers and processors.[85] Most of the challenges in any kind of food regulation originate in the small-scale farms, food processing plants, and small restaurants that are difficult to manage and monitor effectively.[86] In July 2007, the State Administration of Quality Supervision, Inspection and Quarantine investigated 448,153 food processors in China.[87] Of all the investigated food producers, seventy-eight percent had less than ten employees, about half of them had improper licenses, and 36.6% of them had no license at all.[88] They process foods mainly from soybeans, rice, wheat, white wine, and soybean oil.[89] The numerous small farms combined with small food processors would become major obstacles in implementing both GM food labeling and the traceability.[90]

V. PROPOSALS FOR IMPROVING THE ENFORCEABILITY OF GM FOOD LEGISLATION

After reviewing the EU's evaluation report on GM food labeling legislation and analyzing China's social conditions for GM food labeling, we identified the following areas to improve China's GM food labeling legislation. Our proposals focus on the enforceability in the legislation itself.

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85. LINDEN J. ELLIS & JENNIFER L. TURNER, SOWING THE SEEDS: OPPORTUNITIES FOR U.S.-CHINA COOPERATION ON FOOD SAFETY 3 (Qifang Tong, trans., 2008), *available at* http://www.greenpeace.org/china/Global/china/publications/campaigns/food-agriculture/2011/ge-research-wch-2011.pdf.

86. *Id.* at 16.

87. *Zhongguo Zhijian Zongju Fabu "Guanyu Jinyibu Jiaqiang Shipin Shengchan Jiagong Xiaozuofang Jianguan Gongzuo de Yijian" Tuchu Sanxiang Jianguan Zhidu Quebao Shipin Anquan* (国家质检总局发布《关于进一步加强食品生产加工小作坊监管工作的意见》突出三项监管制度确保食品质量安全) [*Further Strengthening Food Production and Processing Small Workshops and Supervision Work: Three Prominent Regulatory Systems to Ensure the Quality and Safety of Food*], GUOJIA ZHILIANG JIANDU JIANYAN JIANYI ZONGJU (国家质量监督检验检疫总局) [GENERAL ADMINISTRATION OF QUALITY SUPERVISION, INSPECTION AND QUARANTINE OF THE PEOPLE'S REPUBLIC OF CHINA] (July 11, 2007) [hereinafter, *Further Strengthening Food Production and Processing*] http://www.aqsiq.gov.cn/zjxw/zjxw/zjftpxw/200707/t20070711_33419.htm.

88. *Id.*

89. *Id.*

90. ELLIS & TURNER, *supra* note 85, at 41.

A. Threshold

First, China's GM food labeling legislation should set up a reasonable adventitious threshold. An adventitious presence threshold for exemption would make law enforcement feasible by acknowledging the adventitious or technically unavoidable presence of genetically modified material in foods.

Threshold levels for labeling of GM ingredients are set differently across countries. Some countries, such as those in the EU, apply a 0.9% threshold to each ingredient.[91] Other countries apply the threshold only to three to five major ingredients. For example, Japan sets a five percent threshold for three main ingredients in each product and South Korea sets a three percent threshold for the top five major ingredients in each product.[92]

The zero percent level of detection in China's current GM food labeling law does not acknowledge the adventitious or technically unavoidable presence of GMOs in foods. Considering China's current food market, a zero percent level would result in almost all the products carrying a GM food label. When it becomes impossible to achieve the zero percent threshold level, the food producers may give up using GMOs completely and leave the consumers with no GM food choice. Another possibility is that the food producers may take the risk of falsely claiming GMO-free and misleading consumers. Therefore, the zero percent threshold is both unrealistic and infeasible. China should choose a reasonable adventitious threshold for GM food labeling requirements.

1. Cost of Implementation and Benefits to Consumers

The threshold level directly impacts the cost of implementation. The lower the threshold and the more ingredients to cover, the more difficult and expensive testing will be to enforce the implementation. A low threshold and a broad coverage of ingredients requires significant expenditures on segregation, Identity Preservation, testing facilities, personnel training, food processing techniques, and process implementation. These additional costs will increase the consumer price for both GM food and non-GM food, with non-GM food bearing more of the burden. Considering the income level and the importance of the price factor in Chinese consumers' purchasing decisions, many consumers will lose their choice of buying non-GM food because of the high premium price

91. GARY E. MARCHANT, ET. AL., THWARTING CONSUMER CHOICE: THE CASE AGAINST MANDATORY LABELING FOR GENETICALLY MODIFIED FOODS 17–18 (2010).

92. Gruère & Rao, *supra* note 24.

they have to pay. Moreover, comparing the Greenpeace consumer survey reports with the EU's evaluation report, Chinese consumers are less concerned about GMOs in food safety compared to European consumers.[93] Therefore, a zero percent tolerance does not reflect Chinese consumers' concern and demand and such a stringent requirement is unnecessary.

2. Proposals for a Reasonable Threshold Level

We propose that the Chinese GM food labeling legislation should indicate a reasonable threshold level, taking into account the impact of implementing a zero percent threshold on consumer prices. Because China, Japan, and Korea share similar diet structure, the threshold levels from Japan and Korea may be most appropriate for China's GM food market. Nonetheless, China's current food market is relatively less regulated than Japan and Korea. Moreover, Chinese consumers have lower income levels than the consumers in Japan and Korea. In order to balance the cost of implementation and the benefit of labeling for consumers to make an informed choice, a five percent threshold, like Japan, would be appropriate. In addition, like Korea, China may consider it necessary to limit the labeling requirement to the top five major ingredients in each product.

B. Label Content

Second, China's GM food labeling legislation should set clear and specific requirements for label content. The overall objective of mandatory labeling requirements is to provide consumers with information and allow consumers to make informed choices. In order to achieve this objective, a clearly visible and standardized label is essential.

1. Benefits to Consumers and Industry Concerns

According to the Greenpeace reports, ninety-seven percent of CBSG and ninety percent of CWC have heard about the concept of GMOs and GM food.[94] Nevertheless, only forty-eight of CBSG and forty-two percent

93. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 17; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 24; FOOD CHAIN EVALUATION CONSORTIUM, *supra* note 46, at 142.

94. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 6; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 18.

of CWC believe that they have seen GM food labels.[95] One of the reasons is that the current GM food labels are not clearly visible.

A market survey report conducted in Tianjin, China in 2008 revealed that there are eight different kinds of GM food labels for soybean oil among twenty-four products selected.[96] For GMO-free labeling, there are fourteen different kinds of labels and most of the GMO-free foods are not certified.[97] These different kinds of GM food labeling and GMO-free food labeling are confusing to consumers.

On the other hand, food manufacturers generally reject GM food labeling because the labeling creates negative consumer perception in terms of food safety. Consequently, such negative consumer perception will lead to the loss of market share for GM food producers.

According to the Greenpeace reports, about thirty-three percent of CBSG and forty-one percent of CWC think that GMOs have strong or some negative impacts on food safety, while sixty-two percent of CBSG and sixty-eight percent of CWC have strong concerns about GM food's potential risk to human health.[98] Therefore, Chinese consumers do have concerns about the risk of GMOs to their health, and the food manufacturers' worries of negative consumer perception are legitimate.

On the other hand, in terms of consumers' reliance on the sources of GM food safety information, forty-three percent of CBSG trust the government (the highest percentage among other information sources), and only twelve percent of CBSG trust food producers and food retailers.[99] Thus, Chinese consumers trust the government on food safety regulation more than they trust industry self-regulation.

In short, the complaints from food manufacturers about consumers' negative perception of GM food are reasonable. Chinese consumers are concerned but not certain about the potential negative impact of GMOs on food safety and human health. Because Chinese consumers rely on the government for GM food safety information, the Chinese government could play an important role in balancing consumers' concerns and industry's interests.

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95. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 9; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 22.

96. Wang Yong et al., *supra* note 16, at 5.

97. *Id.*

98. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 17–18; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 25–26.

99. CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 36.

2. Proposals for Specific Labeling Requirements

Currently, the vague language in China's GM food labeling legislation (the MMAGL) contributes to the lack of consumer awareness of the existing GM labels in the market and the nonstandard forms of labels.

Section 6 of the MMAGL specifies the language to be used for GM food.[100] Nonetheless, it does not correlate the GMO information with the ingredients list. Our first proposal is to adopt the EU's model: When the food consists of more than one ingredient, the words "genetically modified" or "produced from genetically modified [name of the ingredient]" should appear in the list of ingredients in parentheses immediately following the ingredient concerned. This approach helps the consumer find the GM information easily and relates the GM information directly to other information about the ingredients.

Section 7 of the MMAGL only requires the GM food label to be "clearly visible."[101] This "clearly visible" requirement is vague. The GM information should be treated with the same weight as other information about ingredients. Thus, our second proposal is that China should adopt the EU's provision by requiring the GM label to be printed in text at least as large as the text used for the ingredient label.

In terms of consumers' concern about GMO's impact on food safety and human health, because consumers trust the government on safety information, our third proposal is to add some government-certified texts in GM food labels, for example: "The GMO ingredients are approved by the government food safety agency." Such a label will likely ease Chinese consumers' concerns on GM food. At the same time, it will alleviate the negative consumers' perception on GMO food safety, and as a result encourage industry innovation in GMO technology.

C. Coverage of Foods

Our third proposal is to make the scope of foods required for labeling consistent and expand the list of products subject to labeling to reasonably reflect consumers' demand and market conditions in China.

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100. China Management Measures on Agro-GMO Labeling, *supra* note 11, §6.
101. *Id.* § 7.

1. Conflicting Scope of Foods Covered by Legislation

First, section 6, clause 3 of the MMAGL covers a very broad range of foods that contain or consist of GMOs, or are produced from GMOs.[102] It includes highly processed foods.[103] As mentioned earlier, in 2007, seventy-eight percent of food processors in China hired less than ten employees and about half of them had improper licenses, and 36.6% of them had no license at all.[104] If the regulation requires processed foods to have GM food labeling, this current highly fragmented and loosely regulated food processing industry will make the implementation and enforcement of GM food labeling nearly impossible.

Moreover, in section 8, clause 1, the MMAGL requires the fast food industry and food retailers to put GM labels on food that is not pre-packaged.[105] Considering the vast number of small restaurants in China, it is costly and difficult for government agencies to monitor them effectively on GM food labeling. Additionally, some small local restaurants are simply incapable of discovering whether their food contains GMOs or not.

On the other hand, in the MMAGL's annex, the legislature provides the first batch of seventeen food items subject to labeling regulation, which covers the types of food that most likely contain GMO ingredients.[106] During the ten years since the MMAGL defined its first batch of food for regulation, GMOs took more market share in the food supply chain, and the number of GM food varieties is growing rapidly. Among these GM food varieties, Chinese consumers are most sensitive to GM food for children. Based on the Greenpeace consumer survey reports, seventy-eight percent of CBSG and eighty-one percent of CWC prefer non-GM food for children, and seventy-seven percent of CBSG and eighty-three percent of CWC prefer non-GM rice cereal for babies.[107] An effective legislation should address the most acute concern of the public with the highest priority. Therefore, the first batch of foods covered is not only too narrow to respond to consumers' demands, but also so outdated that it misses a vast number of GM food varieties in the marketplace.

In summary, the extensive scope defined in the MMAGL's provisions and the limited number of foods in its annex seem to conflict with each other. Neither of them is appropriate.

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102. *Id.* § 6.
103. *Id.*
104. *Further Strengthening Food Production and Processing*, *supra* note 87.
105. China Management Measures on Agro-GMO Labeling, *supra* note 11, § 8.
106. *Id.*
107. CHINA CONSUMER SURVEY REPORT WUHAN AND CHANGSHA, *supra* note 69, at 12–13; CHINA CONSUMER SURVEY REPORT BEIJING, SHANGHAI, AND GUANGZHOU, *supra* note 68, at 27–28.

2. Proposals for a Reasonable Scope of Foods

In order to readjust the scope of products subject to GM food labeling, China should balance consumers' demand and the cost and difficulty in implementation and enforcement.

First, China should narrow the scope of products in China's GM food labeling legislation to exclude highly processed foods. Second, China's GM food labeling law should require only big restaurant chains to implement GM food labeling for their foods. Third, China should at least add baby foods in the second batch of foods in the amended MMAGL. To prepare a list of food varieties to respond to consumers' demand effectively, the Chinese government should conduct systematic and comprehensive consumer surveys. Based on the survey results, China's legislature would then be able to make reasonable decisions on the candidate foods required for labeling. Finally, China should resolve the confusion by adding a connection between the provisions and the annex. For example, at the end of each clause under section 6 of the MMAGL, the legislature should mention: "This rule should be adopted in accordance with the list of foods referred to in the annex."

D. Traceability

Our fourth proposal is that China should conduct pilot implementation of traceability to supplement the labeling requirements.

1. Purpose of Implementing Traceability

With numerous small-scale farms, food distributors, food processors, and food retailers in China's food industry, it is difficult to implement the GM food labeling law even absent a traceability provision. A full nationwide implementation of traceability will be an even more daunting task, if not impossible. Therefore, China's current GM food labeling legislation does not require traceability, although traceability is a key to ensure the accuracy of labeling.

Traceability ensures that relevant information concerning any genetic modification is available at each stage of the production process of GM food, and thereby facilitates accurate labeling. In addition, traceability is the key in the implementation of the precautionary principle to prevent potential risks of GMOs and to protect consumer safety. Therefore, it is necessary for China to implement traceability to achieve an accurate GM food labeling system. Furthermore, with traceability, China would be able

to trace back the potentially harmful GMOs and withdraw them from the market when needed.

2. Proposals for Experimental Steps with Further Revision and Expansion

The MMAGL in the future should add traceability requirements, but limit its application to certain food operators. China may experiment with implementing traceability on big farms, national food distributors, large food producers, and big restaurant chains. Based on the result of this pilot implementation project of traceability, the legislature could later review, revise, and improve the future requirements for traceability and gradually expand its application.

In the pilot implementation project of traceability, China could use the EU Regulation (EC) 1829/2003 as a reference to lay down the process for traceability. First, GMO producers in China should include certain information in writing on all GMOs that enter the market. Then food operators must provide the GMO information in writing to the receiving party. The information should indicate: (1) that the food contains or consists of GMOs, and (2) an identifier unique to the GMO. This information must then be transferred throughout the food and feed chain to the end user to ensure that the GMO information is transmitted and retained along the supply chain.[108]

There are many reasons for taking small incremental steps in implementing traceability. First, by limiting the implementation scope of traceability requirements, the legislation will not impose substantial costs and unnecessary risk of failure in implementation, either on the agencies or on the industries.

Second, the initial implementation of an untested law usually will require a bigger investment of resources than the following implementation after the legislation has developed to a mature stage. Mistakes are unavoidable in the pioneering steps. Large corporations would have more resources than small ones to take up such a task and therefore would be suitable for pilot implementation.

Third, major corporations are industry leaders. After the big players set up the standard of industry, small players tend to follow such standard. Furthermore, small companies could follow the examples provided by the big corporations to reduce the implementation costs.

Fourth, more and more urban residents in China purchase their food from big supermarkets, because big names and brands in China usually

108. FOOD CHAIN EVALUATION CONSORTIUM, *supra* note 46, at 14–v.

mean more credibility.[109] Therefore, the implementation of traceability in big retailers will have a more substantial impact on the consumer food market than the implementation by small players. Accordingly, China should set high priority on implementing the traceability in big retailers first.

Last but not least, large corporations are normally more strictly self-regulated than small players. Therefore, large corporations are usually easier for government agencies to monitor and regulate for compliance. After accumulating sufficient experience from regulating the big players, the agencies could develop effective monitoring and regulating approaches adapted to small players in future implementation and enforcement.

E. Proposals for Improvements Beyond Legislative Measures to Facilitate the Enforcement

In addition to our proposals focused on enforceability in legislation itself, we propose the following improvements beyond legislative measures to facilitate the enforcement.

1. Specific Statute for Biosafety

Currently, China has no specific statute regulating biosafety. The current GM food related laws are only at the level of regulations and rules, which has less authority than statutes. In order to have substantial and comprehensive legal support for GM food labeling, China should enact a specific statute for biosafety[110] to increase public participation, enhance enforcement, and improve administration coordination.[111]

2. Authority Designation and Cooperation

The other issue in China's current GM food labeling laws is that the authorities of numerous ministries overlap each other but lack coordination and cooperation. For example, the Ministry of Agriculture, the Ministry of Commerce, and the Ministry of Health all issue regulations related to

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109. *Qu Chaoshi Goumai Shipin Geng Fangxin* (去超市购买食品更放心) [*Food Purchases in Supermarket Provide More Reassurance of Food Safety*], RENMIN WANG (人民网) [PEOPLE.COM.CN], http://www.people.com.cn/GB/shenghuo/1089/2985084.html (last visited Mar. 19, 2013) (citing a Food Safety Status Investigation Report issued by Chinese Ministry of Commerce in 2004).

110. Wenxuan Yu, *supra* note 28.

111. Wenxuan Yu & Jason Czarnezki, Challenges in China's Natural Resource Conservation & Biodiversity Legislation (Aug. 21, 2012) (Vt. Law Sch. Res. Paper No. 21-12), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2133580.

biosafety, including rules for labeling. In order to establish an effective enforcement structure for GM food labeling laws, China must designate one leading authority in enforcing biosafety laws and provide a clear guidance for other government entities to cooperate.

3. Efficient and Transparent Authorization Process

Another key finding in the EU's evaluation report is that the authorization process could be made more efficient and transparent. Without improvement in the authorization process, trade disputes could become more frequent and severe and affect more products, as more GMOs are approved outside Europe.

The Chinese government could enhance the efficiency and transparency of the authorization process by establishing precise requirements for the submission of applications for GM food labeling. For example, China could set up a detailed and clear guideline for local agencies to follow and implement the application and authorization process. These improvements will streamline the assessment process and avoid imposing an undue burden on importing.

4. Consistent Labeling Requirements

In the EU's GM food labeling legislation, there is some inconsistency for labeling requirements for different categories of products. For example, the EU's legislation distinguishes between food produced *from* a GMO (e.g., cornstarch made from GM corn) and food produced *with* a GMO (e.g., alcohol made using GM yeast in the fermentation process and cheese made with GM chymosin). The former is subject to the labeling requirement; the latter is not, provided it contains no detectible GM material. Apparently, the EU manufacturers produced largely cheese and beers and these products are commercially important to many national economies in the EU. Therefore, other countries outside the EU regarded the distinction as protectionism and brought trade disputes against the EU.[112] What China could improve is to overcome protectionism suspicion by applying labeling requirements consistently on all applicable GM food, regardless of whether China is the main producer domestically or the importer.

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112. GARY E. MARCHANT ET AL., THWARTING CONSUMER CHOICE: THE CASE AGAINST MANDATORY LABELING FOR GENETICALLY MODIFIED FOODS 17–18 (2010).

CONCLUSION

GM food labeling is an emerging issue related to environmental health and food safety. Currently, due to the different political interests behind the labeling requirements, there is no international agreement on standards. Major exporters of GMO seeds and crops, like the United States, strongly object to mandatory labeling requirements, worrying about the negative consumer perception of food safety from the mandatory GM food labeling. Countries where a large majority of consumers are concerned with the safety of GM food, like those in the EU, are advocating for mandatory labeling requirements. In July, 2011, Codex Alimentarius, the international food safety advisory body, "resolved a 20-year debate by deciding to permit voluntary labeling indicating the presence of GMOs."[113] "Codex . . . issued new guidelines that will allow countries to adopt the labeling of GMO products without a risk of legal challenge from other members of the World Trade Organization (WTO) . . . ."[114]

Chinese policymakers are taking great initiative in implementing comprehensive GM food labeling legislation to provide consumers the right to know and prevent potential risks of GM food. China is, however, facing challenges in enforcing this legislation. In order to make the law enforceable, China should first improve the enforceability of its legislation. In addressing the enforceability issue in its legislation, China should consider the condition of its food industry and consumer demand, and balance the cost and benefit to enable consumers to make informed choices.

In February 2012, the Legislative Affairs Office of the State Council in China issued the Grain Law (Draft for Comments).[115] According to the Draft for Comments, genetically modified crops should comply with national provisions.[116] As specified in the Draft for Comments, China will improve the management of GMOs.[117] With China's increasing attention to the importance of the management of GMOs, a new demand to amend the current MMAGL is foreseeable in the near future.

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113. *International Legislation Brings Changes to GMO Landscape*, QUALITY ASSURANCE & FOOD SAFETY (Nov. 30, 2011), http://www.qualityassurancemag.com/113011-qa-International-Legislation-Brings-Changes-to-GMO-Landscape.aspx.

114. *Id.*

115. *Guowuyuan Fazhiban Gongbu Liangshifa (Zhengqiu Yijian Gao) (Quan Wen)* (国务院法制办公布 粮食法 (征求意见稿) (全文)) [*The Legislative Affairs Office of the State Announced the Food Law (Draft) (Full Text)*], ZHONGGUOWANG (中国网) [CHINA WEB] (Feb. 21, 2012), http://news.china.com.cn/txt/2012-02/21/content_24695064.htm.

116. *Id.*

117. *Id.*

The legislature should not resolve massive problems in one fell swoop, but take "one step at a time, addressing itself to the phase of the problem which seems most acute."[118] Based on this principle, our research focused on the enforceability of the legislation and made several proposals to improve China's GM food labeling legislation. We hope that China can achieve its ultimate goal of a full implementation and effective enforcement of its comprehensive GM food labeling legislation by building on incremental and reasonable steps.

118. Massachusetts v. U.S. Envtl. Prot. Agency, 549 U.S. 497, 524 (2007) (citing Williamson v. Lee Optical of Okla., 348 U.S. 483, 489 (1955)).

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