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Agro-environment for safety and quality of agro-food in China

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1.- Introduction: food regulation and the case of China

Food is human need, while the right to adequate food requires that the interpretation of this right should not be in a narrow way to make it only equated with a minimum package of calories, protein and other specific nutrients, but in a broad way to be sufficient in both quantity and quality to satisfy the dietary needs in a given culture and sustainable way.¹ To this end, regulatory system is needed at the national level to deal with the issues of food security, food safety, and to a lesser extent food quality for sake of cultural acceptability and environmentally friendly method of food production. In this aspect, the regulation of food security, food safety and food quality are interacted but differentiated in the regulatory purposes and instruments.

Generally speaking, the modernization of agriculture has contributed considerably to feeding the human with “food security”, that is to say, to supplying adequate food to fight against hunger and malnutrition. However, in addition to the economic concern, the environmental and social consideration should also be integrated into the agricultural development, to make sure sustainable food supply in a long-term

perspective. Moreover, environment, traditional culture is of growing importance for food quality conscious consumers and can be taken as value to add into agro-food for a comparative advantage in competition, in other words, farmers can take advantage of the demanding high-end quality food and diverse their farming to win the quality challenge.²

Differently, the long-term regulation from the perspective of food quality was targeted at the food identity for its purity and authenticity, such as the punishment against the behavior to make food appear better value than it is or to substitute wholly or in part substance with cheaper one. Although food safety was once regarded as one of quality attributes and became a regulatory target to prohibit the addition of poisonous ingredients into food within the past hundred years,³ food safety has already been separated from other quality attributes and turned to be an independent and basic regulated target in the food domain due to the growing health concerns resulted from the endless food safety issues.⁴

Admittedly, food security is always a concern of high priority in China, but, for most Chinese, the high concern at this moment is not one of quantity but of quality, precisely, safety as the baseline for displaying other quality attributes, like the safe food fortified from the perspective of nutrition, or the one integrated environmental considerations in terms of organic food. As far as the food safety is concerned,⁵ the *Food Safety Law* instead of *Food Hygiene Law* in 2009 has shifted the emphasis on the sanitary condition of food products, premise and equipment for food production to protection of public health from potential physical, chemical and biologi-

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(¹) CESCR General Comment No. 12: The right to Adequate Food (Art. 11), adopted at the 20th Session of the Committee on Economic, Social and Cultural Rights, E/C.12/1999/5, May 12, 1999.

(²) European Commission, *Green Paper on Agricultural Product Quality: Product Standards, Farming Requirements and Quality Schemes*, COM(2008) 641 final, Brussels, Oct 15, 2008, p. 4.

(³) P. B. Hutt, *Food law & policy: an essay*, in *Journal of Food Law and Policy*, 1, 2005, p. 4.

(⁴) J. Sun, *The evolving appreciation of food safety*, in *European Food and Feed Law Review*, 7(2), 2012, p.p.84-85.

(⁵) J. Sun Juanjuan, *Evolution and recent update of food safety governance in China*, in L. Costato - F. Albisinni (eds.), *European and Global Food Law*, Cedam WK, II ed., 2016, p. 87.

cal hazards. Out of this reason, the *Food Safety Law* is regarded to lay down a risk-based regulatory system in China, in particularly, by introducing the system of risk monitoring and risk assessment to provide scientific basis for managing the food risks. Although the regulation of agro-food is also subject to such regulatory system, it is not the above-mentioned *Food Safety Law* but *A Law on Quality and Safety of Agricultural Product* that provides the legal basis for agro-food safety regulation.

The reason for such legislative separation is firstly linked to the sector-based regulatory system. Historically, the regulatory system in the food domain is resulted from the evolution of administrative system and economic reform while characterized by a multiple agency system.⁶ Accordingly, it is the Ministry of Agriculture that takes the responsibility for the regulation of agricultural product. Under a sector-based regulatory system, stages like the process, marketing or in-export had been regulated according to the *Law on Product Quality or Food Hygiene Law* at the early of 21st century when the involved competent authorities were the State Administration for Industry and Commerce (SAIC) and General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ).

Secondly, as far as the primary production is concerned, it was the supply of agro-food, in particular, the staple food, had occupied the priority in 1990s. Yet, a general increase in awareness of safety and quality concerns had come into being with the stable supply of agro-food at the beginning of 21st century.⁷ At this point, the *Agriculture Law*, however, has only provided general requirements for the safety and quality of agro-food.⁸ Meanwhile, the above-mentioned *Law on Product Quality or Food Hygiene Law* did not extend its scope on the primary production. Therefore, the gap at the legislative level for guaranteeing agro-food safety was supposed to be

filled and then it was the mission of the Ministry of Agriculture to propose and draft the *Law on Quality and Safety of Agricultural Product*, which should put the emphasis on the role of the agriculture as starting point of the food supply chain for food safety, in particular, the agro-environment where the food is produced and how the chemical inputs are used.⁹ Certainly, with the arrival of the *Food Safety Law* in 2009, the purpose of guaranteeing the safe food at the whole food supply chain from farm to folk did enable the *Food Safety Law* to regulate standard-setting and information release regarding agro-food, in order to make sure the consistence in the standards and information. Yet, how to carry out management and inspection of risks regarding agro-food is still left to be specified by the *Law on Quality and Safety of Agricultural Product*. As a result, for one thing, there are disturbing gaps in the law enforcement between the agro-food and processed-food.

As in the case of so-called “poisonous” bean sprouts, the bean sprouts at issue were regarded poisonous because they were treated with certain chemical substances while the critical point was to figure out whether the sprout was an agro-food or processed food. Because, for the former, the questioned chemical substance could be regarded as legal pesticide and then the producer was allowed to use it during the production. On the contrary, for the latter, it should be deemed as legally banned food additive and the producer should be found guilty due to the fact of committing toxic, harmful food crime. However, the dilemma in this case was to clarify whether the bean sprouts were agro-food or not given the modernized method of production. Consequently, while some producers were found guilty, some were unsentenced and the first case of non-guilty has come into being. It is in this reason that the case of so-called “poisonous” bean sprouts

⁽⁶⁾ Ma Yingjuan, *Independence, Cooperation and Accountability-tracing and exploring China's Reformation of Food Safety Regulatory System* (独立、合作与可问责——探寻中国食品安全监管体制改革之路), in *Journal of Hebei University (Philosophy and Social Science)*, 1, p. 38.

⁽⁷⁾ Jin Fazhong, *Thoughts on quality and safety on the basis of objective characteristics of agricultural product in China* (基于我国农产品客观特性的质量安全问题思考), in *Quality and Safety of Agro-product* (基于我国农产品客观特性的质量安全思考), 3, 2015, p. 3.

⁽⁸⁾ Zhao Chunming, *Thoughts on the legislation on the quality and safety of agro-food* (关于制定农产品质量安全法的思考), *Food and Nutrition in China* (中国食物与营养), 7, 2005, p. 17.

⁽⁹⁾ Jin Fazhong, *Several suggestions on the legislation regarding quality and safety of agro-food* (关于农产品质量安全立法的几点建议), in *Agricultural Quality & Standards* 农业质量标准, 6, 2003, p. 8-10.

is a scandal of regulation and judiciary rather than food safety issue.

For another thing, the Ministry of Agriculture takes all the responsibility for food security, food safety and food quality as well as the functions for both risk assessment and risk management for agro-food safety regulation, then it is questionable that the agro-food safety would be prioritized in a situation of conflict of interests, such as whether to prohibit a pesticide for safety reason or not for a quantity concern, or how to keep an independent scientific advice from economic and political pressure.

Therefore, the question is raised as to what will happen to the *Law on Quality and Safety of Agricultural Product*¹⁰ in light of the above-mentioned co-existence while the *Food Safety Law* has been recently revised. As a matter of fact, to be compatible with the revised *Food Safety Law*, the *Law on Quality and Safety of Agricultural Product* is under the revision. In view of this, to have a better law that provides legal basis for safety and quality of agro-food in near future, it is helpful to review its establishment and enforcement in the past and understand the reasons and the way to refine the legal framework currently in place. To this end, the section 2 will introduce the revised *Food Safety Law* as a background to figure out that the revision of the *Law on Quality and Safety of Agricultural Product* is rather than a copy but a special mission to clarify the specialties in safety guarantee as the origin of the whole food supply chain. Based on this, section 3 will further take the agro-environment as a case to address such specialties, which should be regulated differently to realize the food safety and food quality, respectively.

2.- Background: the revised Food Safety Law

After five years' implementation, the *Food Safety Law* has been revised for the first time and come into force on October 1st 2015. Taking the lessons learned from the enforcement as well as advanced

experiences from foreign countries as references, the revised *Food Safety Law* has confirmed the re-organization of competent authorities since 2013, namely the China FDA led regulatory system at the stage of production, distribution and consumption. Besides, it has also provided the following four legal principles for updating this regulatory system, including the prevention first, risks management, farm-to-fork control, and co-governance by involving all the stakeholders and the public in the food safety guarantee. In view of this, it is said that the food safety regulation after the legal amendment¹¹ is strictest from historical perspective, with the characteristics of a sharing responsibility, being risk-based management for risk prevention, being smart through a system of punishments and rewards, and being modern in line with the tendency of governance.

2.1. Strictest regulation with a sharing responsibility

With implementation of the revised *Food Safety Law*, it is said that the strictest food safety regulatory system has been established, which is characterized by the compliance with the laws and standards in the condition of the most rigorous supervision, the harshest punishment and the most stringent accountability.

Notably, while food safety also becomes a high political concern, a statement of being strictest in four aspects had been raised as general requirement for food safety guarantee. Currently, in addition to the above-mentioned aspects of supervision, punishment and accountability, the compliance with the laws and standards has replaced the so-called most precise standards. Such change in the statement can be regarded as an emphasis to indicate that the food safety guarantee lies primarily in the responsibility of food operator in compliance with the legal requirements, inter alia, the mandatory food safety standards, while the official control in terms of inspection and punishment is indispensable to

⁽¹⁰⁾ This proposal is still under revision and at the stage of internal discussion and expert review.

⁽¹¹⁾ Zhu Xiao and Wu Kaijie, *China's Food Safety Law and its ongoing amendment*, in q. Riv. www.rivistadirittoalimentare.it, n.4-2014, pp. 27-34.e C. 463/10 P e C. 475/10 P, punto 36. .

verify such compliance.¹²

In other words, a sharing responsibility has been placed among the food operators and competent authorities to prevent risk. For the former, the food operators are required to assume the primary responsibility by self-regulation. For the latter, the China FDA at the central level and local government are required to reinforce the official control against the self-regulation carried out by food operators. In the case of noncompliance, the food operator shall be sanctioned administratively or criminally for which punishment has been reinforced again, so does the public servant who fails to fulfill his regulatory responsibility. It is in this sense that the cooperation between food operators and competent authorities are carried in a form of enforced self-regulation by combining the flexibility of self-regulation but avoiding the inherent weaknesses of voluntarism through official control.¹³

Besides, given the consideration that more and more intermediate operators are involved in the food supply chain, the duty of care has also imposed on them. For example, as buying food becomes increasingly popular via internet, consumers can claim damages against the electronic commerce trade platforms if they fail to guarantee food safety by providing legal required documents like license for production or business.

2.2. Risk-based management for prioritizing prevention

While the assurance of food safety relies on the way of production as well as the way of official control, the revised *Food Safety Law* has provided newly introduced or reinforced institutions to prioritize the preventive ways of production and inspection. As far as the food operators are concerned, they are requi-

red to carry out self-regulation through internal food safety management system and self-audit. For the former, applying General Hygiene Practice is legally required while safety management systems like Hazard Analysis and Critical Control Point (HACCP) are encouraged in China. For the latter, food operators can carry out the self-audit by themselves. If they found the changes in the production are no long meet the legal safety requirement, they are obligatory to stop the food production and take corrective actions. If the risk is potential, they are also required to report to the relevant competent authority. Different from the foreign experience, the self-regulation of food operators in China is not based on the HACCP system like in the EU or HACCP-based system like Hazard analysis and risk-based preventive controls in the USA.

A key concern here is the overall and legally mandatory application of such modernized food safety management system would be quite burdensome for food operators since most of them are small and medium enterprises in China. Therefore, the lack of managing capacity and technical support has become the bottleneck in the application of HACCP system while the staff training and expert consulting increase heavily the cost.¹⁴ What's more, the lack of public appreciation of the role of HACCP or HACCP-like system also leads to the low motivation of these food companies to apply it in a voluntary way.¹⁵ On the contrary, the food companies either having small or big scales have applied such system through third-party certification since this food safety management system has become a "passport" for accessing into international market. As far as the small and medium enterprises are concerned, for one thing, their non-compliance has been the proxy of food safety issues. For another thing, they also play role of prompting food economy, of providing employment, and of preserving

(¹²) Zhong Kai, *Food safety guarantee in China through being strictest in three aspects* (中国三个最严监管食品安全), in *Sina Finance* (新浪财经), March 6, 2014, available at <http://finance.sina.com.cn/zl/china/20140306/232618430380.shtml> (last accessed on November 16, 2015).

(¹³) J. Braithwaite, *Enforced self-regulation: a new strategy for corporate crime control*, in *Michigan Law Review*, 80, 1982, p.1470.

(¹⁴) Zhou Jiehng, Ye Juntao, *Current Situation, Bottleneck and path selection for the HACCP application in food safety management in China: analysis of agricultural product processing enterprises*, in *Issues in Agricultural Economy*, 8, 2007, p. 60.

(¹⁵) Liu Jie, *The food industry in our country the present situation of the application of HACCP system management and countermeasures*, in *China Food Additives*, 8, 2014, p. 148.

local or national food culture. Therefore, on the one side, the unified strict food safety standards are the same for all the food operators under which the compliance and enforcement are ensured by the harsh sanction. On the other side, the local government is also supposed to encourage the development of those small and medium food enterprises, such as the legal instrument of local food safety standards in case of lack of national mandatory standards.

When it comes to official control, the China FDA at the central level and local government are required to reinforce the regulation on the basis of risk-taking, which can contribute to the better use of limited administrative resources in inspecting the food category or food company of higher risk. Among the others, special attention should be paid to health food, infant formula and foods for special medical purpose. This is why that food operator for producing health food, infant formula and foods for special medical purpose are obliged to review periodically its internal safety management system and submit the self-audit report to the responsible competent authority. Besides, the application of traceability and recall also requires the cooperation between the food operators and competent authorities.

2.3. Smart regulation by a system of punishments and rewards

Regulation has positive and necessary role in the food safety guarantee for the sake of public health. However, to be effective and well performing in practice, a smart regulation¹⁶ is calling for at both level of legislation and enforcement. For the former, the revised *Food Safety Law* note only places the flexibility at the side of food operators through self-

regulation, but also the local government for taking the “*territorial*” responsibility, which means the local government can set up specific rules, or draw the local plan by taking the specialties of food culture and food business within its jurisdiction. Besides, the smart regulation at the legislative level also enables the participation of the stakeholders and the public into the decision-making regarding the legislations, rule-making or policy formulations, which will be further addressed at the point of co-governance. When it comes to the enforcement, a system combining punishments and rewards can illustrate how the regulation becomes smarter.

As mentioned before, the administrative and criminal sanction has been reinforced to deter food operators’ malpractices. For example, given the fact that food operators have a fear to loss freedom rather than paying the fine, the administrative detention against serious offences have been introduced to put real teeth into the administrative punishment in addition to the fine and revocation of license. Also, for those who have a fear to loss reputation rather than paying the fine, information disclosure can be taken as an effective and cost-efficient tool to foster compliance with food safety requirement. By helping the consumers to make a better choice through reducing information asymmetry, such smart regulation has employed the economic and social sanctions in the form of losing market share and reputation to make non-compliant food operators face a competitive disadvantage.¹⁷ The announcement of a shame list of non-compliant food operators after the food inspection by the China FDA is a case of this.¹⁸ It is also important to mention, with the construction of credit system, the disclosed information regarding non-compliance can be further used by the financial institution, which is supposed to refine the market regulation by means of such credit punishment.¹⁹

⁽¹⁶⁾ This idea has taken the European experiences as reference, but the analysis here is a reflection of practice in China. See *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Smart Regulation in the European Union*, COM(2010) 543 final, Brussels, Oct. 8, 2010.

⁽¹⁷⁾ N. Hirschauer - M., *Advancing consumer protection through smart food safety regulation*, in *Food and Feed Law Review*, 2014, 2, p.102.

⁽¹⁸⁾ Such kind of information can be found at the official website, <http://www.sda.gov.cn/WS01/CL1664/>.

⁽¹⁹⁾ Song Hualin, *Strengthening the regulation inwards and afterwards to promote the reform and innovation of market regulation*, November 18, 2015, http://www.gov.cn/zhengce/2015-11/18/content_2967454.htm (last access on November 20, 2015).

As a matter of fact, the challenges from newly methods in food supply has changed the regulatory way from traditional “command and control” forms to science-based and risk-prevented way.²⁰ Comparatively, the rigorous “command and control” approaches are not flexible enough to promote self-regulation of food operators by forming their own internal rules in identifying critical control points as well as corrective measures in case of deviation. As a result, the incentive regulation is raised to stimulate the food operators to comply with the legal requirements and even go beyond compliance,²¹ as in the case of reducing asymmetric information by information disclosure in the term of name list.

Moreover, persuasion and rewards have also applied in the revised Food Safety law to promote compliance and even going beyond compliance. For the former, to prevent the potential risk from being materialized, the competent authority can carry out a talk with the responsible food operator to take measures for correction, otherwise, he will be further talked by the superior and have impact on his performance evaluation. As a kind of persuasion, the purpose of the talk is to persuade the behavior at issue to come into compliance. Notably, the effectiveness of this kind of persuasion in securing compliance is still backed up by punishment.²² For the latter, reward is also an incentive for behavior changes and even more useful than punishment, as carrots are better than sticks to get things down well.²³ At this point, the revised *Food Safety Law* set up a general reward granting to anyone who contributes to food safety guarantee. In this aspect, either the monetary rewards or rewards in the form of praise or letters of recognition for good reputation can serve as incentive to promote food operators’ good practice. Apart from such general

rewards, rewarding the whistleblower is also regarded as a helpful way to find out food safety malpractice, especially, the internal whistleblower who may ask to break rules for the company’s sake.

2.4. Governance for public participation

As regards the exercise of authority by the government, governance and regulation can be used interchangeably. Comparatively, Regulation is raised as a kind of regulatory governance particular refers to economic activity²⁴ in an effort to correct market failure²⁵ by the government intervention. However, the failure to provide the predictable legal framework in advance, the timely and credible information and to be accountable on the side of government has again brought about the government failure. As a matter of fact, to provide an enable management is beyond the capacity of public sector and the government can no longer bear the whole burden of newly emerged challenges due to the industrialization and globalization. Therefore, governance has been highlighted to be the sum of the many ways individuals and institutions, public and private, manage their common affairs.²⁶ Against this context, regulation can be regarded as a subset of governance²⁷ to concern the realization of fair economic order and public interest like public health through improved economic and social regulation, the regulatee like the economic operators, other stakeholder as well as the public are also been encouraged to take part in the management.

In line with such tendency in the building of national capacity, for one thing, the above mentioned regulatory improvement is aimed to make sure food safety by the cooperation between food operators

⁽²⁰⁾ S. Hoffmann, *Food safety policy and economics, a review of the literature*, Discussion papers, Resources for the Future, 2010, p.1.

⁽²¹⁾ Song Huiling, *Research on the application of incentive regulation in food safety* (食品安全激励性监管方式研究), in *Changbai Journal* (长白学刊), 1, 2013, pp.91-95.

⁽²²⁾ J. Braithwaite, *Rewards and regulation*, in *Journal of Law and Society*, 29(1), 2002, p.19.

⁽²³⁾ J. Braithwaite, *op.cit.* pp. 12-13.

⁽²⁴⁾ Certainly, regulation itself can also be used broadly to include the regulation of any kind of social behaviors.

⁽²⁵⁾ N. Hirschauer - M.Bavorova, *op.cit.*, p.93.

⁽²⁶⁾ Commission on Global Governance, *Our Global Neighborhood*

⁽²⁷⁾ Braithwaite, J., Coglianese, C., and Levi-Faur, D., *Can regulation and governance make a difference?*, in *Regulation & Governance*, 1, 2007, p.3.

and competent authority. Moreover, food safety is everyone's business, which means the other stakeholders, the public, the media have the interests in knowing how food safety is regulated and taking participation in the decision-making regarding the food safety regulation. For another thing, the co-governance has also introduced as a principle to guide the food safety undertakings while risk communication can provide the roadmap to involve the stakeholders and the public.

When it comes to the risk communication, it concerns the risk communication from the responsible for risk assessment and risk management, respectively. For the risk assessment, it is the China National Center for Food Safety Risk Assessment under the National Health and Family Planning Commission that undertakes the risk communication for scientific advice. When it comes to the regulation, the competent authority should carry out risk communication within their jurisdiction, as the China FDA encourages the local counterparts to involve the experts and stakeholders through the committees by taking account of the examples of Advisory forum or Stakeholder Consultative Platform under the framework of the European Food Safety Authority.

3.- *Agro-environment: a case of specialty for safety and quality of agro-food*

In view of the above, the newly emerged characteristics of being strictest, risk-based and smart in the regulatory improvement as well as the transition from regulation to governance can be clues to a better understanding of food safety regulation currently in place. Against this context, when it comes to food safety in general, agro-food safety in particular, the regulatory improvement as well as the transition from regulation towards governance can also be taken as points of reference during the revision of the *Law on the Quality and Safety of Agricultural*

Product. At this point, the commons shared by these two laws are threefold.

First, the scientific basis through risk monitoring, risk assessment and food testing can be integrated through the standardization of scientific methodologies in the form of mandatory food safety standards. Besides, the deregulation of the market access for the third-party engaged in the food testing also pays the way for commons in the scientific integrity. Second, a strictest, risk-based and smart regulation can also be extended to the production and supervision of agro-food, such as the primary reasonability of farmers of scale through HACCP-like system or Good Agricultural Practice based system and official control on the basis of risk-ranking. Third, co-governance can also be an important tool to promote the safety in the agriculture, as the risk communication to rationalize consumers' risk perception about the use of chemical inputs and their residues. Yet, since the competent authority for law enforcement is separated between China FDA and Ministry of Agriculture, a kind of dual-system in carrying out scientific work has been formed under each competent authority. Besides, as regards the division of risk management between agro-food and other food product in domestic market, a clear demarcation line in the regulatory function, reasonability is in need to prevent gaps and overlaps in law enforcement. At this point, the Ministry of Agriculture and China FDA has reached a consensus that once the agro-food is placed into the market for wholesale, retail or into food enterprise for production and process, it is the China FDA that should assume the regulatory reasonability.²⁸

As far as the specialty is concerned, the regulation of agro-food safety is more demanding because for one thing, more than 90% people in China take fresh agro-food or directly processed agro-food while the safety issues mainly come from the stage of plant growing and animal raising as well as the following collection, storage and transport.²⁹ In this aspect, the supply relied mainly on individual farmer

⁽²⁸⁾ The Opinions on strengthening the regulation of agro-food safety between the Ministry of Agriculture and China Food and Drug Administration, No. 14 of 农质发, 2014.

⁽²⁹⁾ Jin Fazhong, *Thoughts on quality and safety on the basis of objective characteristics of agricultural product in China* (基于我国农产品客观特性的质量安全问题思考), in *Quality and Safety of Agro-product* (基于我国农产品客观特性的质量安全思考), 3, 2015, p. 6.

in small scales constitutes a considerable obstacle for applying the modernized safety management system like HACCP. For another thing, the production of agro-food is more vulnerable to the natural environment which is more difficult to predict and control than the sanitary condition inside factory. Besides, when agriculture can take advantage of natural resources for producing agro-food, at the same time, it is also its mission to improve environmental quality for sustainable food supply in view of growing population.

As a result, the control of how to maintain agro-environment for producing safety agro-food becomes the critical control point. Given the interaction between the environment and agro-food, on the one hand, the zone planning is supposed to protect safe food from environmental hazards, on the other hand, the safety management of chemical inputs is aimed to produce agro-food by respecting the requirements like the maximum residue limits as well as to protect the environment from pollution. What's more, as indicated by the name of the *Law on Quality and Safety of Agricultural Product*, the non-agro-food as well as food quality are also targeted by this law, which means that the purposes like increasing farmers' income, developing rural area can also be the purposes of this law through diversification by taking advantage of food quality.

In this aspect, the preservation of the agro-environment not only serves a role of assuring food safety but also promoting food quality through agro-environment measures like payments or quality disclosure.

3.1. Zone planning for non-producing area

The purpose of zone planning for classifying the

non-producing area, restricted area and appropriate area for plant growing according the environmental condition and plant characteristics was to make better use of available resources and promoting the development of regional agriculture.³⁰ While only the zone planning for non-producing area introduced into the *Laws on Quality and Safety of Agricultural Product* as well as specified on the *Rules on Managing Safety of Producing area for Agricultural Product*, the competent authority at the local government is required to carry out the classification for non-producing area given the fact that different regions of China are at different level of pollution reflecting a wide array of geographic, economic and technical factors.³¹ However, the failure to apply this institution in practice is due to the following reasons.

First, agro-environment is a concern shared by the *Environment Law* and *Laws on Quality and Safety of Agricultural Product* but lacked specific rules for standard-setting regarding the hazards that emerged in the agro-environments and harmful for human health.³² As a result, the gaps and overlaps exist when the competent authorities for agriculture and environment are both involved in the agro-environment issues. Second, where a variety of laws or rules on both national and local level pay attention to the prevention and control the air, land and water pollution at the agro-environment,³³ the general requirements fail to clarify how to repair the polluted area, especially, compensation for the farmers who loss the land due to the classification of a polluted land to non-producing area. Third, from a technical point, the current environment standards may be inappropriate in classifying an area as non-producing area since the under-standard in the aspect of environment may not give rise to the food safety issues.³⁴

⁽³⁰⁾ Jin Fazhong, *Several suggestions*, cit., p. 9.

⁽³¹⁾ Shi Rongguang et al., *The status and related countermeasures for the division of non-producing areas in agricultural producing area*, in *Journal of Agro-Environment Science*, 26 (2), 2007, p.425.

⁽³²⁾ Dai Jie, *The need for legislations on agro-environment and framework of rules* 农产品产地环境保护立法需求与规则构建), in *Guangxi Social Sciences* (广西社会科学), 2, 2015, p.90.

⁽³³⁾ Wang Wei et al., *Pollution control legislation of agricultural origin on comparative law perspective* (比较法视野下农产品产地污染防治立法研究), in *Ecological Economy* (生态经济), 9, 2010, p. 105.

⁽³⁴⁾ Shi Rongguang et al., *The status and related countermeasures for the division of non-producing areas in agricultural producing area*, in *Journal of Agro-Environment Science*, 26 (2), 2007, p.428.

Therefore, to keep the zone planning as an important tool to prevent agro-food from environmental pollution, there should be adequate countermeasures against the above-mentioned issues. First, the most important is to set up standards in distinguishing the non-producing area from producing area as well as non-producing area for agro-food but not for non-agro-food.

Even this is territorial reasonability, the unified national law can provide the guidelines to make the requirements more practicable as well as equivalence in law enforcement, such as a list of so-called poisonous hazards for standard-setting. Second, the zone planning should be taken as an evolving process under which identifying is just a start and subsequent work is called for to repair and then reclassify. At this point, the key issue who should carry out and pay for the adjustment can take account of the Polluter Pays Principle, which has been specified in the Environment Law.

Third, given the fact that the prevention and control of agro-environment may concern more than one competent authority, the leading one and the way of cooperation, in particular, the Ministry of Agriculture and Ministry of Environment should be clarified at the beginning to avoid inaction under the excuse of gaps or overlap.

3.2. Chemical inputs at process management

Undoubtedly, the modernization of agriculture plays an important role in supplying sufficient food for Chinese people. However, the quantity guarantee relied heavily on the use of chemical inputs like pesticides have brought about the safety issues in both environment and agro-food. For the former, the abuse of chemical inputs in the agriculture has been regarded as a main course of soil pollution in China while around 20% arable land exceeds national standards.³⁵ For the latter, while the polluted agro-environment like the soil pollution can give the safety concern of agro-food, the use of highly poisonous pesticides and the excessive use of allowed

pesticides with residues above limits also becomes major concern of agro-food safety. Out of this reason, the revised *Food Safety Law* on its own highlights the safety management of the pesticides with high toxin and high residues.

As far as the *Laws on Quality and Safety of Agricultural Product* is concerned, the safety management of chemical inputs is another important tool to guarantee the agro-food safety, *inter alia*, through process management for the sake of agro-environment and agro-food. To this end, this law has introduced the licensing system for production and marketing the pesticides, veterinary drugs, feed and feed additive, fertilizer.

Besides, the producer and seller as well as the users of these products are also required to keep a record, which is supposed to provide traceability in the case of emergence and investigation. In addition to the punishment against the abuse of chemical inputs, the environmentally friendly ways are also encouraged to use, such as the organic fertilizer. However, the benefit-oriented incentive mechanism is essential to such encouragement, especially, when the cost of eco-agriculture is higher but benefit is beyond the investor due to the externalities.

3.3. Payment as support measures

The positive externalities of the agriculture can contribute to the conservation of biodiversity and agriculture landscape from the ecological points, to the promotion of rural development from the economic point, and to the provision of social security from the social point, therefore, the support policy for agriculture is in need to correct the market failure for compensating the investment by internalizing these externalities.³⁶ Admittedly, the domestic agricultural support in China has increased rapidly and taken many forms like tax reductions, direct subsidies, price supports, policy loans, which has attracted additional scrutiny from trade partners to make sure the compliance with the WTO-imposed obliga-

⁽³⁵⁾ National report on the status-quo of soil pollution, Ministry of Environmental Protection, 2014.

⁽³⁶⁾ Li Binglong, Xue Xingli (eds), *Agricultural economics*, China Agricultural University Press, edition 2, 2014, p. 295-296.

tions.³⁷ It should be noted that the subsidies in favor of environmentally based measures are still been underscored. On the contrary, the current subsidies for chemical input and agricultural machinery has continually promoted the petrochemical agriculture and thus resulted in serious impacts on the agro-environment.³⁸ In view of this, the adjustment of subsidy structure by taking into account of environmental issues in agriculture can be realized by reducing environmentally harmful types of agricultural subsidies while increasing the subsidies on the opposite types.

As a matter of fact, there exist outstanding traditional agricultural models in China for producing in environmentally friendly way, as in the case of rice-fish agriculture in mountainous areas.³⁹ Besides, there is also economic incentive for practicing such eco-agriculture since the agro-food with this kind of agriculture contributes more to incomes. Besides, the consumers have more and more willingness to pay for the agro-food of higher quality. However, the integration of environmental concerns into the agriculture relies more on a voluntary basis and usually goes beyond legal obligations. In this aspect, the internalization of environmental externalities can be a core issue to encourage the private initiatives for the positive environmental outcomes as well as safer food of high quality.

While this cannot be rewarded by the marketplace, the farmers should be encouraged to participate in these activities through the government support. What's more, as far as a country is concerned, the support of this kind can also serve as an instrument that supports green growth in agriculture.⁴⁰ Taking the EU as example, agro-environment payments can be paid to cover commitments going beyond

the relevant mandatory standards as well as minimum requirements for fertilizer and plant protection product use and other relevant mandatory requirements.⁴¹ When it comes to China, on the one hand, the subsidy for environment can be used for such payment. On the other hand, when improving the agro-environmental quality is aimed to guarantee food safety, it is also possible to be addressed by the administrative reward as a contribution to food safety guarantee.

3.4. Quality disclosure in favor of agro-environment

Certainly, some quality attributes can be observed directly by the consumers, like the color, the appearance; some not, in particular those referring to the way of food production. Food becomes a “*credence product*” due to the information asymmetry, which means consumers cannot know the unobservable quality attributes even after the consumption. In view of this, the information concerns food safety and food quality should be disclosed for an informed choice, which can also take many forms. In this aspect, food safety which is usually regarded as minimum quality attributes are legally required to disclosure in standard formats like mandatory food safety standards, mandatory labeling, or even licensing.⁴² Comparatively, in addition to the regulatory incentive, food operators are more interesting in the information disclosure concerning differentiate quality above the minimum standards.

Different from food safety assurance which can contribute to the standardization of food safety requirement, it is food quality improvement that satisfies the differentiation. That is to say, food safety plays a

⁽³⁷⁾ Fred Gale, *Growth and evolution in China's agricultural support policies*, ERR-153, U.S. Department of Agriculture, Economic Research Service, August 2013.

⁽³⁸⁾ Wang Lirong, *The impact of the agricultural subsidy policy in the environment* (农业补贴政策对环境的影响), in *Academic Journal of Shanxi Provincial Committee Party School of C.P.C* (中共陕西省党委校学报), 33(1), 2010, p. 54-55.

⁽³⁹⁾ Liu Moucheng et al., *Evaluation of comprehensive benefit of rice-fish agriculture and rice monocropping - a case study of Qingtian County, Zhejiang Province*, in *Chinese Journal of Eco-Agriculture*, 18(1), 2010, pp. 164-169.

⁽⁴⁰⁾ OECD, *Policy instruments to support green growth in Agriculture*, OECD Green Growth Studies, OECD Publishing, 2013, p. 14.ss.

⁽⁴¹⁾ Council Regulation (EC) No 1698/2005 of 20 September 2005 on Support for Rural Development by the European Agricultural Fund for Rural Development, Art. 39.

⁽⁴²⁾ D. Dranove, G. Zhe Jin, *Quality disclosure and certification: theory and practice*, Working Paper 15644, National Bureau of Economic Research, 2010, p.7.

role of “ticket” to permit the entrance into food market while food quality provides them with a “weapon tool” to gain the competition by a distinguished characteristic or higher quality than others. What’s more, it is also a trend that consumers are under the change from price conscientious towards quality conscientious with the growing life standards and more disposable income, in particular, for those value-added food from health or environmental concern. In this case, it is always the food quality that remains as the high concern for food operators. At this point, the *Law on Quality and Safety of Agricultural Product* also requires the food operators to disclose the quality attributes regarding the environmentally friendly way of production and place of origin, namely, the quality marks of hazard-free agro-food, green food and organic food in a grading order for the former and geographic indication for the latter.

On the basis of food safety, what food quality is it is always a subject of dispute since it concerns consumers ‘satisfaction and subjective perception. That is to say, everyone may has its own preference as to food quality which can be classified horizontally among the diverse attributes like nutrition, service, but also in a vertical grading order from better to best.⁴³ To enable the farmer taking advantage of food quality for a comparative advantage by value added agro-food and to facilitate consumers benefiting from diversified food quality as well as to prevent them from misleading information, the proliferation of quality disclosure can take in many forms, for example, as the public-private partnership in China under which food quality marks as well standards are provided by the government but the use of these marks and certification is carried out by the privates, or a so-called Tripartite Standards Regime⁴⁴ under which the imposition of private food standards and requirement on the third-party certification have been raised by food retailers.

4.- Conclusion: the coordination mechanism

Certainly, the separation of risk management between agro-food and food at other stages can be troublesome, as in the case of so-called “poisonous” bean sprouts. Therefore, the co-existence of the *Law on Quality and Safety of Agricultural Product* and *Food Safety Law* after revision is supposed to provide a framework under which the relationship between the regulation of agro-food and food products is supposed to be re-structured as follows.

Firstly, it is the relationship of unification. Although the regulation of agro-food remains as an independent sector according to the *Law on Quality and Safety of Agricultural Product*, the revised *Food Safety Law* has unified the systems regarding standard-setting and information release for all kinds of food. Therefore, while the regulation or rules are formulated to specify these regulatory instruments, the revision of the *Law on Quality and Safety of Agricultural Product* can refer them directly, in order to keep the consistency in practice.

Secondly, it is the relationship of seamless cooperation. As the revised *Food Safety Law* has put the marketing of agro-food under its own scope, it is the China FDA that assumes the regulatory responsibility to carry out official control in the market like wholesale or retail. In other words, the China FDA is responsible for post-marketing surveillance by means of test or labeling to guarantee agro-food after it places into market. Correspondingly, the *Law on Quality and Safety of Agricultural Product* is supposed to address the safety management at the stage of primary production by putting emphasis on the agro-environment and agriculture inputs and then allow the safe agro-food to leave the producing area. Therefore, it relies on the seamless cooperation between the related competent authorities at the turning point of leaving the producing area or placing into marketing.

Thirdly, it is the relationship of dual system. When the food safety regulation is modernized to be a science-based and risk-prevented control system, risk assessment and risk monitoring have been

⁽⁴³⁾ . Olivier, *Avis no.36 sur La Notion de Qualité, Conseil National de L'alimentation*, 2002, pp.8-9.

⁽⁴⁴⁾ L. Busch, *Quasi-state? The unexpected risk of private food law*, in, B. van der Meulen (ed.), *Private Food Law, governing food chains through contract law, self-regulation, private standards, audits and certification schemes*, Wageningen Academic Publishers, 2011, p.59.

introduced by the *Law on Quality and Safety of Agricultural Product* and *Food Safety Law*, respectively. As a result, the involved competent authorities, as the Ministry of Agriculture for the former and the Ministry of Health for the later, have established the organizational and procedural arrangements independently. Therefore, a dual system for applying risk assessment and risk monitoring has been formed from national level to local level.

Fourthly, it is the relationship of sectorial specialties guaranteed. As indicated by its name, the *Law on Quality and Safety of Agricultural Product* is different from the *Food Safety Law* in twofold. For one thing, it is not only a law for agro-food, but also for other non-edible agricultural products like cotton. Therefore, either the rules for agro-environment or agricultural inputs should differ from agro-food and agricultural products. For another thing, both safety and quality of agro-food have been concerned by this law, however, the regulatory purposes and instruments may be different between safety assurance and quality promotion. Therefore, in addition to be compatible with the revised *Food Safety Law*, the revision of the *Law on Quality and Safety of Agricultural Product* should take into account its own specialties, as the non-producing area is provided to keep agro-food from polluted land and quality marks like organic food or geographic indication for value-added agro-food.

In all, when each of these two laws provides food safety regulation with different or similar instruments, it is the capability as well as reasonability of the concerned competent authorities that should figure out the appropriate coordination mechanism as mentioned above, in order to guarantee food safety from farm to folk.

Taking risk communication as example, it has been introduced by the revised *Food Safety Law* in 2015, with the purpose of updating the food safety regulation in a way of co-governance. By the same token, it is also a progress that should be taken into consideration during the revision of the *Law on Quality and Safety of Agricultural Product*, which may be applied in a dual system.

ABSTRACT

The revised Food Safety Law in China is supposed to put the strictest regulatory system from historical perspective. To be compatible with the reinforced or newly introduced requirements, the Law on Quality and Safety of Agricultural Products is under the revision. The continuing separation of regulating safety and quality of agro-food from the former to the latter is due to the considerations of the specialty at the primary production, which is more difficult to predict and control the risks under the influences of natural environment. At this point, to keep mutually enhancing effect rather than conflicting one among the agro-environment, agriculture and agro-food, the current Law on Quality and Safety of Agricultural Products should be updated to take into account the strictest, risk-based and smart regulation as well as transition from regulation to governance promoted by the revised Food Safety Law on the one side, and on the other side, pay attention to its own specialty from the perspective of agro-environment through the management of zone planning, chemical inputs, payments and quality disclosure.