

THE ENVIRONMENTAL ISSUE IN CHINA: NORMS AND ENFORCEMENT AFTER COP-21 CLIMATE SUMMIT IN PARIS.

Mariagrazia Semprebon*

Abstract

It is well known that the dramatic economic development of China has had a severe impact on the environment during the past 30 years.

This paper shows an environmental picture of one of the largest country in the world, focusing on the legislative aspect and its evolution through time.

Then the study takes a glance through a relevant example of environmental issue: The Chinese Pesticide Legislation and its evolution.

Finally, the paper draws some consideration after the COP-21 climate summit in Paris, with an address to the outlook of environmental protection in China both in the cities and in the countryside.

1. Introduction

China's development in recent years (with a constant economic growth of more than 10% of the GDP per year) has made possible a significant increase of the quality of life for hundreds of millions of Chinese. The other side of the coin is that such development has brought enormous damage to the natural environment.

For several years, China, like many other developing countries, has widely tolerated the pollution growth, according to the principle “pollute first, control later”, and enacted laws with debatable effect in terms of control and enforcement.

The Chinese approach toward this phenomenon has a backlash over the whole world. China is the country with the largest population of the planet, which amounts to over 1.3 billion people, is the fourth country by area in the world and, according to many studies, is among the most polluted countries in the world.

The demand for energy, raw materials and natural resources of all kinds has grown out of control in recent years in China, growing exponentially at the growth of economic development. This has caused a variety of negative consequences on the environment, such as floods, desertification and loss of biodiversity.

The first step in the opposite direction, symptom of a rising awareness, was the China's participation in 1972 to the "Stockholm Conference on the Human Environment". The first regulatory intervention in the subject, instead, came later in 1979.

This intervention was inefficient for various reasons: above all the unsatisfactory level of enforcement of the laws caused by the phenomenon so-called “local protectionism”.

Local protectionism² has plagued the Chinese legal environment and is still today a major concern for citizens and foreign investors, according to many scholars.³

*Mariagrazia Semprebon, AgriLegal Bioconsulting, Via Santa Chiara 22, Verona, semprebon.mariagrazia@gmail.com.

² That consists in administrations and courts deciding cases or enforcing judgements with a protective attitude in favor of local industries or local governments.

³ Castellucci I. (2012), *Rule of law and legal complexity in the People's Republic of China*, Università degli Studi di Trento, Dipartimento di Scienze Giuridiche, Trento.

Later on, the situation did not improve and in 2012/2013 pollution levels in Beijing and many other cities in northern China crashed far beyond the air quality indexes.

This so-called “Airpocalypse” provoked some government’s policy responses.

In December 2012, the National People’s Congress issued a law to require regional multi-pollutant air quality plans and new emission targets in 113 cities.

In September 2013, the State Council issued a Pollution Action Plan.

It is very unusual to see the Chinese government to announce a plan that does not coincide with the usual five-year planning cycle, but the extreme pollution clearly demanded decisive measures.

This plan required Beijing, Shanghai and Guangdong to reduce fine particle density respectively by 25, 20 and 15 percent by 2017.

Finally, the new Environmental Protection Law of the People's Republic of China (a national law formulated for the purpose of protecting and improving environmental, economic and social development) entered into force on January 1, 2015.

Further tangible sign of this effort was the Chinese participation at the 2015 Paris conference, COP21, in which it is appeared the incredible change in China's approach in the past decade.

The recently announced new Five-Year Plan commits China to produce 300 gigawatts of wind and solar energy by 2020. It is clearly an ambitious target if we think that Japan and Germany combined have set for themselves the same goal for 2030, a decade later.

China clearly seems no longer the laggard on environmental issues.

2. The evolution of Environmental Law in China, from 1950 to 2015.

According to the Article 2 of the 2014 Environmental Protection Law of the People's Republic of China, "Environment" refers to the total body of all natural elements and artificially transformed natural elements affecting human existence and development, which includes the atmosphere, water, seas, land, minerals, forests, grasslands, wetlands, wildlife, natural and human remains, nature reserves, historic sites and scenic spots, and urban and rural area.

It took many years and several reforms to reach this complete and comprehensive definition of “Environment”.

Before 1976, in fact, any progress was hardly achieved in the field of environmental law.

During these years, the focus of the political level was the industrialization of the country and the economic growth, therefore only few environmental interests, connected with the manufacturing sector, were located, such as the regulation of mineral resources and factory safety, including provisions on water pollution prevention and waste disposal.

It was after severe floods and droughts, that a decision concerning environmental protection and improvement was issued, following China’s signature of the 1972 United Nations Stockholm Declaration on the Human Environment.

In 1978, with Deng Xiaoping policy, environmental law, together with a greater awareness of environmental issues, began to develop in China. Important contribution to this progress came into force when the State’s responsibility for the protection of the environment was added to the Constitution.⁴

⁴ According Article 11 of the Constitution of the PRC (1978): “The state protects the environment and natural resources and prevents and eliminates pollution and other hazards to the public.”

Then, a landmark in environmental law was the enactment, in 1979, of the Environmental Protection Law (EPL), an overall regulation of the subject, with a comprehensive set of sanctions.

Since the early 1980s, a gamut of environmental legislation has been issued.⁵

Then, in 1989, a renewed Environmental Protection Law (EPL) was enacted.⁶

After the renovation of the EPL, in the 1990s, China undertook new efforts to strengthen its environmental laws and to bring them into closer compliance with international principles.

The first generation of post-Cultural Revolution laws were revised, as well as new laws were enacted ruling on solid waste, noise pollution and other environmental issues.

New legislation covers different areas such as cleaner production measures and radioactive pollution. In addition, a wide range of local laws in the form of regulations, decisions, orders and quality standards have been issued at a local level since 1990.⁷

After a World Health Organization air quality study conducted in 1998, which shown that three of the ten most severely polluted cities in the world were located in China, and after extraordinary frequency and intensity of a dust storm in 2000, China adopted an amendment to the Air Pollution Prevention and Control Law.⁸

Then, the most significant innovation in the environmental field is the latest revision of the Environmental Protection Law, in 2014.

It was adopted at the eighth Meeting of the Standing Committee of the Twelfth National People's Congress of the People's Republic of China on April 24, 2014 and has entered into force on January 1, 2015.

This law has addressed many of the issued emerged during the lifespan of the 1989 EPL, and has taken into consideration some of the concerns expressed by other countries and supranational institutions.

Despite this law seem complete and coherent, it is still soon to evaluate its impact, since it largely relies on its dependable enforcement by Chinese authorities.

Other environmental norms, that pinpoint the so-called “Environmental Crimes”, can be found in the Penal Code enacted in 1997, in subsidiary criminal law, and in separate autonomous criminal laws.

⁵ As Marine Environmental Protection Law in 1982, the Water Pollution Prevention and Control Law and the Forest Law in 1984, followed by the Grassland Law in 1985, the Air Pollution Prevention and Control Law in 1987 and the Wildlife Protection Law, enacted in 1988.

⁶ This law was the basic law in the field for 25 years, covered many areas of environmental protection. Its provisions involved water, air, solid waste and noise pollution. It also provided environmental monitoring systems and methods of management responsibilities, including emissions recording methods, criteria for penalties, procedures for the evaluation of environmental impact, as well as measures for the control and elimination of pollution. This law also imposes on each individual or legal entity, a general obligation to protect the environment, by giving everyone the right to denounce those who damaged it. Finally, this law commanded that those who violated the limits established from time to time by the competent authority, were to be fined and obliged to remove the damage.

⁷ Among these laws there was the Law on Water and Soil Conservation (1991), the amendment of the Water Pollution Prevention and Control Law (1996), the Solid Waste Pollution Prevention and Control Law (1995). During these years were also enacted new laws in the environmental field, such as the long-awaited law on Noise Pollution Prevention and Control Law (1996) and filled a significant gap in China's environmental statutes, and the Desertification Prevention and Control Law (2001).

⁸ Specific laws dealing with the protection of nature resources were also enacted: The Forest Law (1998) and the Grassland Law (2002).

The provisions of the Penal Code expressly provide environmental crimes and specific penalties, while the subsidiary environmental criminal law has different forms, whereby they often refer to the provisions of the Penal Code.

Beside imprisonment or criminal detention provided by Penal Code, we find also a comprehensive set of administrative sanctions in the environmental field.

Administrative sanctions are usually found in various administrative environmental laws, usually under the chapter referred to as legal liability, and specific rules for their application can be found in the Measures on Administrative Sanctions against Environmental Offenses, adopted by the Ministry of Environmental Protection.

2.1. *Considerations on the legislation.*

The Environmental Law in China historically developed around two focal points, from one side to protect the environment, and from the other side to maintain high rates of economic growth.

Seen the global nature of the environmental problem, the Chinese government was not the only one interested in ruling the field. Therefore, it was also engaged in the improving of its image that would follow the adoption of significant steps in the matter.⁹

Western countries were reassured by the adoption of clear and tight laws in the environmental field, and so the Chinese government pleased them with a comprehensive set of rules and with the adoption in 1994 of a public agenda (Agenda 21) regarding environmental matters.

However, when it came to the enforcing of the strict rules adopted, the balance between the two seen focus swayed toward the economic growth, with Chinese authorities that opted for a soft regime of controls, especially towards the many state owned enterprises that polluted the country.

We should also bear in mind that most of the monitoring activity was delegated to local administrative levels, the same that were granted a reward if the economic growth in their administration was above average.

The result was that the enforcement of the environmental law was selective, with an upstream political evaluation of the case to pursue, and a downstream accurate promotion of the exemplary punishment imposed to the selected violator.¹⁰

The two directives for the enhancement of environmental protection in China, according to the scholars that have studied the 1989 EPL, were from one side its serious enforcement, and from the other side the revision of the same EPL, the fundamental law in the field.

In recent years, the Chinese legislator has gone in both these two directions, with a renewed EPL, and with a more efficient enforcement of its provisions.

The most important sign in this way is perhaps the introduction of the so-called public interest litigation and the promising number of cases promoted by environmental protection social organizations in the first months of 2015. With this new institution, the Chinese government finally abdicated the exclusivity of its control over environmental issues, finally opting for a widespread policing in the field.

⁹ As it has happened when China ratified the Kyoto Protocol (although it does not impose binding targets to China because it is still considered a developing country by the rules of the treaty).

¹⁰ Castellucci I. (2009) *Le grandi tradizioni giuridiche dell'Asia*, UNI Service, Trento.

3. Environmental Courts in China

Another relevant instrument of Environmental control in China is the so-called Environmental Courts, introduced first in 1989 in order to guarantee that environmental cases would have been treated with the exact expertise.¹¹

Then we had to wait until 2007 to see the environmental courts officially established and entrusted of Chinese environmental protection cases.¹²

The environmental courts have generally taken the form of environmental divisions within Intermediate People's Courts, but could form separate tribunals at the basic court level.

There are eleven environmental courts in force in China: two in Guizhou Province, one in Jiangsu Province, and eight in Yunnan Province.

These environmental courts are entrusted of all environmental cases, whether civil, administrative or criminal. Although a separate enforcement division has traditionally handled enforcement of judgments, some of the environmental courts have also incorporated enforcement authority as well.

The establishment of the environmental courts sometimes followed the outbreak of major local environmental pollution incidents.¹³

The caseloads of the environmental courts differ greatly in number and type.¹⁴ Environmental courts have a number of potential benefits: promotion of greater consistency in the application of the law, improved proficiency of environmental judges, increased societal and government awareness of environmental protection, greater deterrence against environmental violations, and heightened enforcement.

Despite these positive sides, many observers have claimed that the lack of experienced judges could compromise, at least at the beginning, the potential benefit of these courts.¹⁵

With the reform of EPL that took place in 2015, environmental courts were granted of the improvement of the environmental enforcement. Weak enforcement in the environmental field is in fact still a problem in China and these qualified judges are one of the attempts to resolve these issues put in place by the Chinese legislator.

¹¹ In 1989, the People's Court in Qiaokou District of Wuhan attempted to establish an environmental court, but the Supreme People's Court (SPC) voided the attempt in an official response. See [Report about Establishing an Environmental Court by the People's Court of Qiaokou District in Wuhan City] (Sup. People's Ct, effective Feb. 10, 1989) 1989 FAJINGHAN 19 (P.R.C.).

¹² This does not include environmental panels (*huanbao heyiting*) and environmental *xunhui* courts, which generally involve judges being assigned to work onsite at agency offices, including environmental protection bureaus (EPB's), land bureaus, and water bureaus (*huanbao xunhui fating*).

¹³ For example, the two environmental courts in Guizhou Province were established in 2007 to address serious environmental pollution in Hongfeng Lake, Baihua Lake, and Aha Reservoir, the main sources of drinking water for the 3.9 million people of Guiyang Municipality.

¹⁴ The Guiyang courts and the Wuxi environmental court are noteworthy for having accepted several public interest litigation cases including the Guiyang Two Lakes and One Reservoir Management Bureau v. Guizhou Tianfeng Chemical Ltd. decided in late 2007.

Seventy percent of the cases handled by the Guiyang environmental courts have been criminal cases. On the other hand, ninety-five percent of the cases handled by the Wuxi Environmental Court have been non-litigation administrative enforcement cases, pursuant to Article 66 of China's Administrative Litigation Law. The Kunming Court handled a mixture of criminal, civil and administrative cases.

¹⁵ Source: <https://www.chinadialogue.net/article/show/single/en/7972-Growing-pains-for-China-s-new-environmental-courts>, last visited April 2016.

4. The Reform of 2015 - 中华人民共和国环境保护法¹⁶

Almost 25 years after the reform of 1989, in 2014 the Environmental Law changed again.¹⁷

On April 24, 2014, the Standing Committee of the National People's Congress enacted a new version of the Environment Protection Law, extensively modified.

The new law, whose articles increased from 47 to 70, come into force on January 1, 2015 and represents an attempt to remedy the lack of effectiveness of its previous version.¹⁸

For sure, the message of this reform is that now in China the business cost of causing environmental pollution is severely increased.

The EPL requires enterprises to reduce the generation of pollutants by giving priority to clean energy resources, adopting processes and equipment to increase resource utilization and minimize emission of pollutants, and adopting technologies to handle waste and treat pollutants (according to Article 40 of the EPL).

The law imposes also to adopt an environmental protection accountability system (according to Article 42 of the EPL), to pay environmental discharge fees (or be subject to an environmental protection tax) for pollutant discharge (according to Article 43 of the EPL) and solicit public opinion for construction projects (according to Article 56 of the EPL).

4.1. *The most relevant innovations.*

The first significant innovation that we can find in the renewed EPL is the increase of penalties and liabilities and above all their imposition on a daily basis.¹⁹ These provisions are set to discourage delays in compliance.

Regarding to this aspect, the precedent EPL provided only a one-time penalty for each illegal activity, a rule that made the control system rather ineffective.²⁰

¹⁶ Retrieved on http://www.gov.cn/zhengce/2014-04/25/content_2666434.htm, last visited April 2016.

¹⁷ In between, over the years, China has ratified about 30 laws, 90 administrative regulations and many environmental standards in this field.

¹⁸ According to Article 1 of the 2014 EPL: "This Law is formulated for the purpose of protecting and improving environment, preventing and controlling pollution and other public hazards, safeguarding public health, promoting ecological civilization improvement and facilitating sustainable economic and social sustainable development."

¹⁹ Article 59 states: "Where an enterprise, public institution or other producer or business operator is fined due to illegal discharge of pollutants, and is ordered to make correction, if the said entity refuses to make correction, the administrative organ that makes the punishment decision pursuant to the law may impose the fine thereon consecutively on a daily basis according to the original amount of the fine, starting from the second day of the date of ordered correction. The fine prescribed in the preceding paragraph shall, pursuant to relevant laws and regulations, be enforced in accordance with considerations of operating cost of pollution prevention and control facilities, direct loss or illegal gains caused by such violations. Local regulations, based on actual demand of environmental protection, may extend the coverage of types of violation activities to be subject to the daily-based fine as stipulated in the first paragraph"

²⁰ Guoqiang Chen (2014) Opinion: Get Ready for New Environment Laws, China Law and practice <http://www.chinalawandpractice.com/sites/clp/2014/04/25/opinion-get-ready-for-new-environment-laws/>, last visited April 2016.

Another pivotal aspect of the reform is the clear regulation of public interest litigation. The new law has precisely a specific rule on public interest litigation against polluting activities.²¹

After the new EPL, at the beginning of 2015, the Supreme People's Court promulgated the Interpretation on Several Issued Regarding the Application of Law in Public Interest Environmental Civil Litigation (the "SPC Interpretation") introduced and regulated by Article 58 of the new EPL.

With its interpretation, the Supreme Court has expanded the definition of the "social organizations" that are entitled to file a public interest litigation and provided guidelines on the burden of proof regarding these case litigations.²²

Already in the first three months since its introduction, public interest litigations were initiated several times by environmental protection social organizations.²³

Experts forecast a further increment of these environmental public interest organization lawsuits, because this instrument grants a widespread audit on environmental practices, hindered until 2015.

This new law has also tried to increase transparency of both authorities and enterprises.²⁴ These new rules are important because before, data on soil pollution were classified as a state secret.²⁵

²¹ According to Article 58: "For activities that cause environmental pollution, ecological damage and public interest harm, social organizations (NGO) that meet the following conditions may file litigation to the people's courts: 1. Have their registration at the civil affair departments of people's governments at or above municipal level with sub-districts in accordance with the law, 2. Specialize in environmental protection public interest activities for five consecutive years or more, and have no law violation records. Courts shall accept the litigations filed by social organizations that meet the above criteria. The social organizations that file the litigation shall not seek economic benefits from the litigation."

²² Michael W. Vella, Lillian He (2016), China Begins Enforcing Newly Amended Environmental Protection Law, Jones Day http://www.jonesday.com/files/Publication/1d201d08-ddef-4bc9-b017-f04ec8821f0f/Presentation/PublicationAttachment/9bd6ed7d-86fa-4ce9-b12d-f66f150fcad/China_Begins_Enforcing.pdf, last visited April 2016.

²³ The FON and Fujian Green Home, jointly filed a lawsuit against four mine operators, claiming their unauthorized stone-quarry activities were responsible for ecological damage in Nanping city, Fujian province. The Nanping Intermediate People's Court accepted the case on January 1, 2015, the day the revised EPL took effect, making it the first environmental public interest litigation in China. Nine months later, in October 2015, the court issued its judgment in the case, ordering the defendants to pay both the clean-up costs at the site and the legal costs of the two social organizations.

On March 19, 2015, the ACEF, another social organization, filed an environmental lawsuit against Dezhou Jinghua, a Shandong chemical company, alleging the company had illegally discharged harmful substances. The lawsuit seeks RMB 30 million (US\$4.8 million) in compensation. The Intermediate People's Court in Dezhou city of Shandong province agreed to hear the lawsuit.

Source: *Ibidem*.

²⁴ According to Articles 53 e 54: "enterprises and local government authorities will be required to make public environmental information and information on environmental quality, environmental monitoring, environmental incidents, administrative licensing and penalties relating to the environment, and the collection and use of pollutant discharge fees."

According to Article 55: "for enterprises that are heavy polluters, there is a requirement to publicly disclose the names of the principal pollutants discharged the method of discharge, the discharge concentration and total amount, information on discharge, which exceed standards, and information on the construction and operation of pollution control facilities."

According to Article 56: "any enterprise preparing environmental impact assessment (EIA) documents required for all construction projects must publicly disclose such documents and solicit public opinion largely than required under existing laws, and the government-approved EIA documents must be publicly disclosed."

²⁵ Source: http://news.xinhuanet.com/fortune/2014-03/04/c_126216260.htm, last visited April 2016.

Finally, the revised EPL has introduced a specific provision about the so-called whistle-blower, granting protection to whoever reports environmental pollution or the failure of its control by the authorities.²⁶

4.2. Conclusions.

The real problem of the EPL in China has always been its enforcement.

The latest revision of the EPL does not exempt this criticism, risking an inconsistent and biased enforcement of the law, especially on a local level.

Environmental protection in China has to be addressed locally, and the truth is that its management from a central government level is very difficult.

Another suitable measure would be the reform of the seen complementary law in the environmental field, such as the Law on the Prevention and Treatment of Air Pollution²⁷ and the Law on the Prevention and Treatment of Water Pollution.²⁸

Some efforts in this regard have been made by the government, with the “Soil Pollution Prevention and Remediation Action Plan” issued in 2014.²⁹

In conclusion, despite these new laws demonstrate how the debate on the environment in China is beginning to be more serious than in the past, it is necessary to understand if these commitments will remain only on paper.³⁰

Either way, even if it is too early for a definitive assessment, the fact that two months after the EPL came into effect 107 cases lead to administrative detention and 15 cases to continuous daily penalties, have turned on the hopes of international observers.³¹

5. Pesticide law and Regulations in China.

Pesticide is one of the most used methods to intensify agricultural production in current global agricultural development.³²

²⁶ Article 57 of the 2014 EPL, that states: “any citizen, legal person or other organization will have the right to report: (i) Environmental pollution or ecological damage caused by any institution or individual; and (ii) failure of any environmental regulatory body to perform its legal duties, and such report must keep the relevant information on the informant confidential.”

²⁷ Source: <http://www.chinalaw.gov.cn/article/cazjgg/201409/20140900396925.shtml>, last visited April 2016.

²⁸ Source: <http://chinawaterrisk.org/resources/analysis-reviews/pollution-prevention-whats-the-plan/>, Last visited April 2016.

²⁹ Source: <http://chinawaterrisk.org/notices/new-soil-pollution-standards/>, last visited April 2016. Govern top priorities are “improving rural environment and maintaining food security”. Both are linked with soil pollution. This plan introduces five key tasks: “1) to give priority to protect arable lands, 2) pollution sources control, 3) risk management of contaminated sites, 4) pilot sites for soil remediation, and 5) to strengthen monitoring and management of the soil environment.”

³⁰ Hogan Lowells (2014), Clearing the Air on China's New Environmental Protection Law, Hogan Lowells, U.S. <http://www.hoganlovells.com/en/publications/clearing-the-air-on-chinas-new-environmental-protection-law>, last visited April 2016.

³¹ Michael W. Vella, Lillian He (2016), China Begins Enforcing Newly Amended Environmental Protection Law, Jones Day http://www.jonesday.com/files/Publication/1d201d08-ddef-4bc9-b017-f04ec8821f0f/Presentation/PublicationAttachment/9bd6ed7d-86fa-4ce9-b12d-f66f150fcad/China_Begins_Enforcing.pdf, last visited April 2016.

³² The Food and Agriculture Organization (FAO) has defined pesticide as: “any substance or mixture of substances intended for preventing, destroying, or controlling any pest, including vectors of human or animal disease, unwanted species of plants or animals, causing harm during or otherwise interfering with the production, processing, storage, transport, or marketing of food, agricultural commodities, wood and

The World Health Organization (WHO) offers a guideline³³ regarding pesticide classification, which distinguishes between more and less hazardous forms of each pesticide, based on the toxicity of the technical compound and on its formulations.³⁴

Pesticide production breaks down mainly into three, namely pesticide intermediates (used in chemical reactions), API synthesis (“Active Pharmaceutical Ingredient”) and preparation process (the process of manufacturing a pesticide).³⁵

China is one of the biggest countries in the world, with a large population, complicate climate and a varied geographic environment.

Agriculture is an important economic sector in the country, counting 300 million farmers, primarily producing rice, wheat, potatoes, sorghum, peanuts, tea, millet, cotton, barley, oilseed, pork, and fish.

The Chinese pesticide production industry began in 1950 with the DDT production at Luzhong in Sichuan province.

Over the following years, agriculture output has quickly increased thanks to agricultural reform and technological innovations.

During the 90’s, China’s agriculture entered a new stage of development, and the use, management and control of pesticide were highlighted.

After nearly 50 years of development, China became the largest producer of pesticide in the world. The country can manufacture more than 300 technical pesticides and 3000 pesticide formulations. In 2015, China produced 1.75 million tons of herbicides, 530 Kilotons of insecticides and 180 Kilotons of fungicides.³⁶

wood products or animal feedstuffs, or substances that may be administered to animals for the control of insects, arachnids, or other pests in or on their bodies. The term includes substances intended for use as a plant growth regulator, defoliant, desiccant, or agent for thinning fruit or preventing the premature fall of fruit. Also used as substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport” Source: <http://www.fao.org/home/en/>, last visited April 2016.

³³ This guideline takes into consideration also the pesticides labels. Labels should be uniform in the statement on the nature of the risk of the product. They should bear a symbol indicating a high degree of hazard and a signal word or phrase (poison or toxic). The presentation of the symbol and word or phrase, in terms of color, size and shape should be sufficient prominence on the label.

Source: http://www.who.int/ipcs/publications/pesticides_hazard_2009.pdf, last visited April 2016.

³⁴ The WHO guidelines classifies pesticides in the following classes: Extremely Hazardous (Class Ia) active ingredients (technical grade) of pesticides, Highly Hazardous (Class Ib) active ingredients (technical grade) of pesticides, Moderately Hazardous (Class II) active ingredients (technical grade) of pesticides, Slightly Hazardous (Class III) active ingredients (technical grade) of pesticides and, finally, active ingredients unlikely to present acute hazard in normal use.

Source: http://www.who.int/ipcs/publications/pesticides_hazard/en/, last visited April 2016.

³⁵ Source: <https://croplife.org/wp-content/uploads/2015/04/Effective-Management-of-Highly-Hazardous-Pesticides-April-2015.pdf>, last visited April 2016.

³⁶ Fen Jin, Jing Wang, Hua Shao and Maojun Jin (2010), Pesticide use and residue control in China, in *Journal of Pesticide Science*, 35(2010): 138-142. To understand the business size, in 2006-2014, China’s output of pesticide API grew of 14,2% and in 2015 the output reach approximately 3,66 million tons. China’s pesticide API production is mainly concentrated in Jiangsu, Shandong, Henan and Zhejiang, which contributed in 2015 nearly 70% to the total output. Other data covering the years 2006-2014 say that the proportion of herbicides in Chinese pesticide preparations raised steeply, while the portion of insecticides kept declining, and the share of fungicides remained unchanged.

Source: <http://www.marketresearch.com/Research-in-China-v3266/China-Pesticide-9400388/>, last visited April 2016.

Whereas China is a big pesticide producer and consumer, on the other side, it is also an influential exporter, since the export price of pesticides in the country is far lower than the import price.³⁷

The Chinese control in the field began with hesitant regulation, for example the DDT, banned for their persistence in developed countries since the 1980s, were prohibited in China only in 2009.

However, the Chinese legislation in the field has been coordinated since 2007, and perfected successively.³⁸

China owns its agricultural chemical registration system. The Ministry of Agriculture is involved in pesticide registration and market supervision, while the Ministry of Industry and Information Technology authorizes the pesticide manufacturing companies and the Ministry of Environmental Protection studies the environmental impact of pesticide manufacturers and controls pesticide residue in the environment.

Pesticide registration can be classified into field trial, temporary registration and full registration.³⁹

In China all pesticide-manufacturing companies (which still implements their own quality standards) are subject to production management and authorization by the Ministry of Industry and Information Technology.

To identify the product, pesticides have three numbers: pesticide registration certificate number⁴⁰, approval certificate of pesticide manufacturing⁴¹ and the production license number.⁴²

The pesticide field has been also covered by the Chinese Advertising Law (enacted on 1st September, 2015).⁴³

The new Advertising Law, which wants to “standardize advertising activities, protect the lawful rights and interests of consumers, facilitate the healthy development of advertising sector and maintain social and economic order”, includes in fact in its regulations also the pesticides.

³⁷ Here some data: in 2010-2014, China's pesticide export volume grew of 17,3% and in 2015 the volume was 1,3 million tons. Source: Fen Jin, Jing Wang, Hua Shao and Maojun Jin (2010), Pesticide use and residue control in China, in *Journal of Pesticide Science*, 35(2010): 138-142.

³⁸ The most relevant National Laws effective in the field are the Water Pollution Prevention and Control Law (2007) that regards pesticides, this law includes provisions to strengthen pesticide management to prevent water pollution and the Pesticide Management Law (2013). The Ministerial and Administrative regulation are as follows: Measures for the Administration of Pesticide Labels and Manuals (2007), “农药标签和说明书管理办法”; Measures for Implementing the Regulation on Pesticide Administration (2007), “农药管理条例实施办法”; Data Requirements of the Pesticide Registration (2007), “农药登记资料要求”. A significant Local regulation to name is the Administrative Regulation of Quality and Safety of Agricultural Products in Hunan Province.

³⁹ The field trial happens when the substance is undergone a preliminary control under the competent authority of agriculture at a provincial level according the pesticide field trial efficacy test guidelines. After this, a temporary registration may be necessary in the case of use under special circumstances. The competent authority of agriculture at provincial level examines the pesticide, and then it should be filed to the Ministry of Agriculture – Expert Committee for Pesticide Temporary Registration for a review. If it is fine, a temporary registration will be issued. To have a full registration is necessary the approval of Health, Environmental protection, Industry Ministries.

⁴⁰ Source: <http://202.127.42.135/a1.aspx> last visited April 2016.

⁴¹ Source: <http://www.aqsiq.gov.cn/search/gyxkz/>, last visited April 2016.

⁴² Source: <http://gzly.miit.gov.cn:8080/datainfo/miit/nycpsecpzzsmd.jsp>, last visited April 2016.

⁴³ Source: <http://www.wipo.int/edocs/lexdocs/laws/en/cn/cn393en.pdf>, last visited April 2016.

Adverting should be truthful and lawful and should not contain false or misleading content, or cheat or mislead consumers.⁴⁴

5.1. *Pesticides and their relationship with Chinese environmental problem.*

Two relevant issues involve pesticides, environmental consequences and human health harm.

There are many scientific studies around the world, which demonstrate the high level of danger of the pesticides and, thanks to the developing ecological awareness, there is a growing worldwide concern about the environmental and human health risks of pesticides.⁴⁵

However, it is impossible to forget the advantages connected with the use of pesticides and fertilizers. The most important of them is the economic benefit, derived from the protection of agricultural output and quality in complicate climate areas, and the reduction of other costly inputs, such as labour and fuel. Other benefits include the maintenance of aesthetic quality and the protection of other organisms.

The issue is complex and trying to find a compromise or alternatives seems sometimes hard especially for China.⁴⁶

The problem here is that this country must feed its population with limited agricultural resources and, thanks to pesticides, farming industry has grown a lot during the last 11 years.

Unfortunately, this achievement caused serious environmental costs, now undeniable.

Sure enough, pesticides have done too much damage to China's ecosystem and, according to Xinhuanet (China's main state news agency), their use should be upper limited from 2020.⁴⁷

For example, the north-eastern province of Heilongjiang, which produces one tenth of China's grain, has encountered huge problems, as soil acidification, soil hardening and reducing yields.⁴⁸

According to a study of the Ministry of Agriculture (MOA – 农业部) at least 16% of China soil contains more pollutants than national standards allow, less than one third of fertilizers and pesticides are absorbed by crops, less than two thirds of plastic film are

⁴⁴ According to article 8: "Advertising should be accurate, clear and easy to understand when describing commodity performance, function, or usage, quality, ingredients/components, price, manufacturer, valid period and guarantee, among others, or service items, provider, format, quality, price and guarantee, among others, if any." In case any content in the advertising requires administrative permission, article 11 says that: "such content should match the permission". In addition, where the advertising mentions patented product or method: "the patent number and type should be noted" (Article 12). Finally, article 21 is the one related to pesticides and states: "The following content is not allowed in advertising for pesticide, veterinary drug, and feed and feed additives: 1) Assertion or guarantee for efficacy and safety; 2) Using the name or image of scientific research, academic, technology promotion organization, industry association, professional or user; 3) Indication of rate of efficacy; 4) Text, language or picture that violates safe usage procedures; 5) Other content prohibited by laws and regulations."

⁴⁵ According to many studies they can cause birth defects, sterility, and cancer, damage to the immune system, and adverse ecological effects, for instance contaminated groundwater, salinization, desertification, erosion and radioactive pollution. Source:

<http://www.unep.org/chemicalsandwaste/Portals/9/Pesticides/MeetingPesticidesRisks/EnviroFactorsBrnst rmingMeeting%201-3July09%20-%20FAO.pdf>, last visited April 2016.

⁴⁶ See: https://www.wilsoncenter.org/sites/default/files/pesticides_feb28.pdf, last visited April 2016.

⁴⁷ See: http://news.xinhuanet.com/english/2015-07/24/c_134444571.htm, last visited April 2016.

⁴⁸ Li Zijun. (2006). "Soil Quality Deteriorating in China, Threatening Public Health and Ecosystems." Retrieved at <http://www.worldwatch.org/node/4419>, last visited April 2016.

recycled, less than half of livestock and poultry waste is processed, and straw burning is still widespread.⁴⁹

MOA is worried also about desertification, water resources, industrial contamination and maintaining arable land.

According to the Chinese Academy of Agricultural Science (CAAS), half of 800 points in 20 counties in five Northern provinces had excessive levels of nitrates in ground water attributable to fertiliser. In 2015, all central and south-eastern provinces bar Jiangxi and Shanxi suffered groundwater nitrate pollution.

These problems are not limited only into the farmlands. There are houses and apartments built on former chemical plant sites.⁵⁰

In 2004, in Beijing, three workers were poisoned by toxic gas from an old pesticide plant side while they were building a house.⁵¹

In 2014 things seems changing with a rising political awareness⁵² and a stricter standard on pesticide residue for farm produce in China enacted in the same year.⁵³

Compared with the standard that took effect in 2012, the new standard contains 1.357 new indices regarding 65 new pesticides and 43 new types of food, covering vegetables, fruits, grain, edible oil, sugar, soft drinks, nuts, eggs and meat. It also includes juice and preserved fruits. Some of the new indices have international references set by the Codex Alimentarius Commission⁵⁴, and some other match or exceed the strictness of the international standards.

On 2015, the State Council has announced plans to improve green farmland and increase irrigation, according to these plans, agriculture must use less water and treatment, improving new technologies to better efficiency. In the same year, the Ministry of Agriculture released a plan for sustainable agricultural development over the next 15 years and on 8 October 2015, the Ministry of Agriculture released two guidelines on pesticide residues in food: “Guideline on the Risk Assessment of Pesticide Residues in Food” and “Guideline on the Development of Maximum Residue Limits in Food”.⁵⁵

The target by 2030 is to use resources more efficiently and frugally.

There are also some notable sustainable experiments. For example, a rice company in Heilongjiang, instead of using fertilizer and pesticides, uses ducks. These animals eat weeds and pests, stimulate the growth of rice swimming. The ducks’ droppings are also an organic fertilizer.

⁴⁹ Huizhen Li, Eddy Y. Zeng, Jing You (2014), Mitigating Pesticide Pollution in China Requires Law Enforcement, Farmer Training, and Technological Innovation, in *Environmental Toxicology and Chemistry*, 33(2014): 963-971.

⁵⁰ An example is a housing project in Wuhan, in Hubei province where there are tons of contaminated soil beneath the houses with toxic heavy metal from steel, iron and smelting plants, persistent organic pollutants from pesticide residue, organic chemical compounds and electronic waste.

⁵¹ Source: http://english.cas.cn/newsroom/china_research/201103/t20110311_66224.shtml, last visited April 2016. Usually the remedy for this problem is to remove the polluted soil and replace it with clean soil, but the cost is very high.

⁵² See: <http://www.chinapesticide.gov.cn/zwxw/2793.jhtml>, last visited April 2016. Where the Government underlines that the efficient use of fertilizer/pesticide helps to reduce pesticide residues.

⁵³ This standard was jointly issued by the Ministry of Agriculture and the National Health and Family Planning Commission and includes 3.650 indices detailing the maximum allowable residue for 387 pesticides on 284 types of food. Source:

http://news.xinhuanet.com/english/china/2014-07/31/c_133523153.htm, last visited April 2016.

⁵⁴ A supranational commission established by the Food and Agriculture Organization of the United Nations and the World Health Organization, set to develop harmonised international food standards.

⁵⁵ See: <https://food.chemlinked.com/news/food-news/china-moa-releases-two-food-pesticide-residue-guidelines>, last visited April 2016.

6. Considerations and future perspectives.

The pictured scenario, even if it is not rosy, allows for a certain amount of optimism.

Chinese government is taking steps in the right direction, as it appears to have realized that environmental concern is no longer an issue coming from outside the country, but is above all a problem for Chinese people.

Even if it is still too soon to understand how the renewed 2015 EPL will integrate with the environmental protection, legal and administrative system in China, we can see encouraging traits, such as the mentioned introduction of public interest litigation, whistleblower protections, daily-basis sanctions and the further implementation of Environmental Courts.

Another significant example in this direction is provided by the Pesticide law, a rather organic and complete legislation, stratified during the years, where the legislator is now focusing on specific and collateral provisions, polarizing its intervention towards the protection of Chinese consumers (a clear sign of that is the enactment of the law on advertising in 2015) and directly addressing and implementing recognized international standards in the field (such as the Codex Alimentarius).

Last but not least we should consider that a further tangible sign of this effort was the Chinese participation at the 2015 Paris conference, COP21. Whereas in other fields the interest of China in global approbation has decreased in recent years, in the Environmental sector China still wants to be present at a supranational level.

Despite some resistance of its delegates during the works of the conference,⁵⁶ China made important pledges on its transition from fossil fuel dependence towards a low-carbon economy.

7. References

Barresi Paul A. (2013), The Chinese Legal Tradition as a Cultural Constraint on the Westernization of Chinese Environmental Law and Policy: Toward a Chinese Environmental Law and Policy Regime with More Chinese Characteristics, in *Pace Environmental Law Review*, 30(3): 1156-1221.

Castellucci I. (2009), *Le grandi tradizioni giuridiche dell'Asia*, UNI Service, Trento.

Castellucci I. (2012) *Rule of law and legal complexity in the People's Republic of China*, Università degli Studi di Trento, Dipartimento di Scienze Giuridiche, Trento.

Darcey J. Goelz (2009), China's environmental problems: is a specialized court the solution? in *Pacific Rim Law & Policy Journal Association*, (2009):155-186.

Eric W. Orts (2003), Environmental Law with Chinese Characteristics, in *William & Mary Bill Rights Journal*, 11(2003): 545.

⁵⁶ Chinese delegates were in fact accused of resisting a measure widely seen as crucial for a successful accord, the requirement for countries to update the pledges they have made to limit their emissions every five years. Source: <http://www.cnn.com/2015/12/08/>, last visited April 2016.

Fen Jin, Jing Wang, Hua Shao and Maojun Jin (2010), Pesticide use and residue control in China, in *Journal of Pesticide Science*, 35(2010): 138-142.

Gao Jie (2010), Environmental Public Interest Litigation and the Vitality of Environmental Courts: The development and future of environmental courts in China, in *Greenlaw*, (2010): 29-95.

Ghanem Dalia, Zhang Junjie (2014), Effortless Perfection: Do Chinese cities manipulate air pollution data? in *Journal of Environmental Economics and Management*, 68(2014): 203-225.

Hering Laura, Poncet Sandra (2014), Environmental policy and exports: Evidence from Chinese cities, *Journal of Environmental Economics and Management*, 68(2014): 296-318.

He Jie and Hua Wang (2012), Economic structure, development policy and environmental quality: An empirical analysis of environmental Kuznets curves with Chinese municipal data, in *Ecological Economics*, 76(2012): 49-59.

Huizhen Li, Eddy Y. Zeng, Jing You (2014), Mitigating Pesticide Pollution in China Requires Law Enforcement, Farmer Training, and Technological Innovation, in *Environmental Toxicology and Chemistry*, 33(2014): 963-971.

Jing Cai, et al. (2014), Acute effects of air pollution on asthma hospitalization in Shanghai, China, in *Environmental Pollution*, 191(2014): 139-144.

McElwee C. R. (2011), *Environmental History of China, Environmental Law in China*, Oxford Univ. Press, Oxford.

McElwee C. R., S. Squire, Dempsey (2011), *Environmental Law in China: Mitigating Risk and Ensuring Compliance*, Oxford Univ. Press, Oxford.

McElwee C. R., Zhang Kunmin, Meng Si (2011), Green law in China: Environmental litigation in China today, the plight of the public, eight cases that mattered, shaping China's green laws, in *Chinadialogue Special Series*, (2011): 2-29.

Qingqi Die et al. (2014), Persistent organic pollutant waste in China: a review of past experiences and future challenges, in *J. Mater Cycles Waste Management*, 17(2014): 434-441.

Ryan Erin (2014), The Elaborate Paper Tiger: environmental enforcement and the rule of law in China, in *Duke Environmental Law & Policy Forum*, XXIV(2014): 183-238.

Shi Jingxia and Yang Xingxing (2015), Reconciling environmental protection with natural resources trade in international law: a perspective from China — rare earths, in *Frontiers of law in China*, 10(2015): 538-550.

Voorhees et al. (2014), Public health benefits of reducing air pollution in Shanghai: a proof-of-concept methodology with application to Ben MAP, in *Science of the Total Environment*, (2014): 485-486.

Wang A. (2006), The Role of Law in Environmental Protection in China: Recent Developments, in *Environmental Law Journal*, 8(2006): 195-225.

Wang Canfa (2007), Chinese Environmental Law Enforcement: Current Deficiencies and Suggested Reforms, in *Vermont Journal of Environmental Law*, 8(2007): 159-193.

Wang, J. (2009), Thirty Years Rule of Environmental Law in China: Retrospect and Reassessment, in *J. China Univ. Geo-Sci.*, 9(2009): 3-9.

Wu Jennifer (2008), Public Participation in the Enforcement of China's Anti-Pollution Laws, in *Law, Environment and Development Journal*, 4(2008): 37-49.

Yan Huiqi, et al. (2015), Contextual compliance: situational and subjective cost-benefit decisions about pesticides by Chinese farmers, in *Law & Policy*, 37(2015).

Yee Wai-Hang, Shui-Yan Tang, and Carlos Wing-Hung Lo (2014), Regulatory Compliance When the Rule of Law is Weak: Evidence from China's Environmental Reform, in *Journal of Public Administration Research and Theory*, first published online June 2014: 2-45.

Zhang B. and Cong Cao (2015), Four gaps in China's new environmental law, in *Nature*, 517(2015): 433-435.

Zhao Xiaoli, Yue Zhao, Saixing Zeng, Sufang Zhang (2014), Corporate behavior and competitiveness: impact of environmental regulation on Chinese firms, in *Journal of Cleaner Production*, 86(2014): 311-322.

Zhao Yuhong (2014), Innovative measures to improve environmental law enforcement in China, in *China-EU Law Journal*, 4(2015): 155-172.

Zhou Yanling, et al (2013), 东明环保人员遭遇暴力抗法 Dongming Environmental Officers Suffered from Violent Obstruction of Environmental Law Enforcement, in *中国环境报* (*China Environment News*), May (2013).

Zhuang Qinghong (2013), 环保法庭的公益诉讼困境 Environmental Courts in Public Interest Litigation Dilemma, in *中国青年报* (*China Youth News*), November (2013): 3-9.

Zining Jin (2015), Environmental Impact Assessment Law in China's courts: A study of 107 judicial decisions, in *Environmental Impact Assessment Review*, 55(2015): 35-44.