

# *Research on the legal regulation of agricultural non-point source pollution in China*

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**Abstract:** The problem of agricultural non-point source pollution is not only an environmental protection issue, but also related to the promotion of rural revitalization. On the basis of clarifying the connotation of agricultural non-point source pollution and the wide-ranging, agricultural, transitive and risk characteristics of the pollution problem, this paper summarizes the current situation of the legal system for the prevention and control of agricultural non-point source pollution in China, and proposes that the prevention and control of agricultural non-point source pollution in China needs to adhere to the source treatment, determine the principle and norm of "source treatment", and determine the concept of source treatment in principle, so as to play the role of agricultural non-point source pollution prevention and control system in the long term. Source treatment also needs to take into account the clarification of the rights, obligations and responsibilities of all relevant subjects, so as to provide a specific operational mechanism for the prevention and control of agricultural non-point source pollution. Under the concept of "integrated management of mountains, rivers, forests, fields, lakes, grasslands and sands", the symbiosis and coexistence of all living organisms need to adhere to departmental coordination and adhere to the positive incentives of agricultural producers.

## **1. Introduction**

The problem of agricultural non-point source pollution is not only an environmental protection problem, but also an important influencing factor of the three rural issues. In the seventh chapter of the "14th Five-Year Plan", "adhere to the priority development of agriculture and rural areas and comprehensively promote rural revitalization", it is proposed to "strengthen the environmental protection and governance of production areas", which makes the problem of agricultural non-point source pollution more important. In 2021, the Ministry of Ecology and Environment and the General Office of the Ministry of Agriculture and Rural Affairs jointly issued the Implementation Plan for the Guidance and Supervision of Agricultural Non-point Source Pollution (Trial), which once again reached a peak in the research on legal issues related to the prevention and control of agricultural non-point source pollution. Through the detailed analysis of the current situation of agricultural non-point source pollution system and the discussion of legal regulation, it is of great significance to improve the agricultural non-point source pollution prevention and control system.

## 2. Definition of "agricultural non-point source pollution"

### 2.1 Distinction between point, line and non-point source pollution

The meaning of point source pollution has reached a consensus in the academic community, that is, "the pollution source that discharges pollutants from the identified sewage outlets, which is widely present in air pollution, water pollution, industrial pollution, agricultural pollution and domestic pollution"[1]. As for the distinction between linear source pollution and non-point source pollution, the academic community has its own opinions. From the perspective of air pollution sources, some people believe that linear source pollution refers to pollution that presents a continuous linear distribution in spatial form pollution sources mainly refer to some mobile pollution sources, such as the exhaust emissions of road motor vehicles; From the perspective of agricultural environmental pollution, some scholars identify non-point source pollution and point source pollution as an either/or relationship, and believe that agricultural non-point source pollution is a kind of water pollution with large dispersion and strong concealment caused by agricultural production and life[2]. The Clean Air Act of the United States stipulates that a major pollution source is a stationary pollution source that emits more than 10 tons of an air pollutant per year, or more than 25 tons of mixed air pollutants per year, or has the possibility of such emissions; A non-point source is any stationary source of emissions other than a major source of pollution. In addition, the Clean Water Act of the United States regulates different pollution sources, and formulates three control plans for point sources, non-point sources and other project management, and divides point sources and non-point sources (non-point sources) into two. [1]Article 15 of the 2010 National Plan for Environmental Protection of Urban Drinking Water Sources (2008-2020) clearly includes "ecological agriculture construction, garbage collection and treatment, farmland runoff control, livestock and poultry breeding waste recycling, and mobile line source remediation" within the scope of non-point source remediation; In 2015, the Ministry of Agriculture issued the "Demonstration Project Construction Plan for Comprehensive Treatment of Agricultural Non-point Source Pollution in Key River Basins", which clarified four types of comprehensive treatment projects for agricultural non-point source pollution, involving the division and use of pesticides, the treatment of livestock pollution, the prevention and control of aquaculture pollution, and the recycling of agricultural waste.

In general, linear source pollution often appears in the form of "line" in environmental pollution, and is mostly concentrated in a kind of mobile pollution generated by motor vehicles or other means of transportation on traffic roads. However, the scope and state of the pollution source of non-point source pollution are not regular lines, and the pollution volume of a single point cannot constitute an independent pollution source, but other pollution sources other than point source pollution and line source pollution. Non-point source pollution is a relatively generalized and abstract type of pollution source.

### 2.2 The connotation and characteristics of agricultural non-point source pollution

According to Article 2 of China's Agricultural Law, agriculture refers to planting, forestry, animal husbandry and fishery industries, including pre-production, production and post-production services directly related to it. The Encyclopedia of China shows that in China, agriculture in the narrow sense is planting or crop cultivation, and agriculture in the broad sense includes planting, forestry, animal husbandry, sideline and fishery. Due to the obvious industrial attributes and characteristics, the sideline business of agricultural product processing such as winemaking in agriculture is generally not within the scope of agricultural pollution prevention and control. Non-point source pollution occurs when large quantities of pesticides and fertilizers are used in crop

farming activities, and toxins penetrate into the soil and underground runoff through irrigation and rainwater, and flow into rivers with the runoff. The use of drugs in the process of forestry pest control carries a large amount of sediment into the river through the rainwater cycle or soil erosion caused by unreasonable forestry activities, and the excrement produced in the process of livestock and poultry breeding is piled up everywhere, and the scattered pollutants continue to spread through rainwater and are a typical form of non-point source pollution. Fishery aquaculture in lakes and estuaries, etc., directly disperses bait, fertilizers and drugs in the water body, resulting in eutrophication of the water body and pollution caused by excessive chemical substances, and this kind of fishery aquaculture is also a kind of non-point source pollution. It should be pointed out that large-scale and intensive planting and breeding belong to point source pollution, because the pollution degree of these agricultural types has reached the level of point source pollution, which needs to pass the environmental impact assessment and relevant administrative licensing approval procedures, and there are already clear supervision and management regulations, and this kind of agricultural pollution is not included in the scope of discussion of "agricultural non-point source pollution".

### **3. Analysis of the legal regulation of agricultural non-point source pollution prevention and control in China**

#### **3.1 China's legal system for the prevention and control of agricultural non-point source pollution**

Protecting the environment is China's basic national policy, and pollution prevention and control is the top priority of environmental protection. Article 26 of the Constitution, which is the fundamental law of the State, clearly stipulates: "The State shall protect and improve the living environment and the ecological environment, and prevent and control pollution and other public hazards. Article 89 of the 2018 constitutional amendment added the State Council's authority to "build an ecological civilization." This provides the most fundamental legal basis for the construction of the legal system for pollution prevention and control.

The following laws are related to the prevention and control of agricultural non-point source pollution: the Law on the Promotion of Rural Revitalization (Article 35, Paragraph 2), the Yangtze River Protection Law (Article 48), the Law on the Prevention and Control of Environmental Pollution by Solid Waste (Article 65, Paragraph 1), the Law on the Prevention and Control of Soil Pollution, etc.; The administrative regulations are as follows: "Regulations on Farmland and Water Conservancy" (Article 30) and "Regulations on the Management of the Taihu Lake Basin" (Article 31). Some local administrative regulations and departmental rules also have corresponding provisions on "the rational use of agricultural inputs such as pesticides, fertilizers, and agricultural films, the comprehensive utilization and recycling system of livestock and poultry breeding inputs and wastes, and the strengthening of agricultural environmental monitoring"[3]. For example, Article 21 of the Hunan Provincial Environmental Protection Regulations, promulgated and implemented by Hunan Province in 2020, contains provisions on the prevention and control of agricultural environmental pollution; Each province formulates corresponding local regulations in accordance with the "Pesticide Management Regulations", one of the purposes is to strengthen agricultural management and protect the ecological environment; Article 22 of the Measures for the Safety Management of Agricultural Products Producing Areas, promulgated and implemented by the Ministry of Agriculture (now revoked) in 2006, also deals with the supervision and management of agricultural supplies in agricultural activities and the prevention and control of agricultural pollution. In addition to the above-mentioned laws, administrative regulations, local regulations and departmental rules related to the prevention and control of agricultural non-point source pollution,

China also has a large number of other normative documents specifically related to the prevention and control of agricultural non-point source pollution, such as the Ministry of Ecology and Environment and the Ministry of Agriculture and Rural Affairs jointly issued the "Agricultural Non-point Source Pollution Control and Supervision Guidance Implementation Plan (Trial)" and the National Development and Reform Commission, the Ministry of Ecology and Environment, the Ministry of Agriculture and Rural Affairs, the Ministry of Water Resources, etc. In addition, some local working documents also have corresponding provisions on agricultural environmental pollution, such as the "Guangdong Province Pesticide Production and Operation and Use Supervision and Inspection Work Plan".

It can be seen that in the past, there was no legislative provision specifically regulating the prevention and control of agricultural non-point source pollution, and it was gradually reflected in the legislation in the past ten years. In some laws and regulations, the prevention and control of agricultural non-point source pollution is at the level of principled provisions, and there are no relevant provisions on the specific operation and implementation details, and the provisions mostly contain words such as "shall", "encourage" and "actively promote"; The prevention and control of agricultural non-point source pollution should reflect the regional nature, and measures adapted to local conditions can be targeted to resolve the environmental damage caused by agricultural non-point source pollution in different regions. The prevention and control of agricultural non-point source pollution is concentrated in the supervision of the matter, such as the regulations on the use of agricultural products in the process of agricultural production, ignoring the provisions on preventive measures in advance; There is a lack of mandatory legal provisions on agricultural non-point source pollution, such as vague legal provisions on the regulatory responsibilities of government departments on agricultural non-point source pollution, and insufficient provisions on the rights and obligations of agricultural producers. The current inadequate legal regulation on agricultural non-point source pollution will greatly affect the operability of agricultural non-point source pollution prevention and law enforcement, and the effectiveness of system design needs to be improved.

### **3.2 Practical analysis of the prevention and control of agricultural non-point source pollution in China**

#### **3.2.1 Law enforcement practice**

In 2021, the Ministry of Ecology and Environment and the General Office of the Ministry of Agriculture and Rural Affairs jointly issued the "Implementation Plan for the Control and Supervision of Agricultural Non-point Source Pollution (Trial)", which proposed to carry out pilot projects in some cities, counties and districts, summarize the governance model, and form a large-scale effect. Anji County, Zhejiang Province, as a pilot area for agricultural non-point source pollution, has implemented the real-name purchase and quota application of chemical fertilizers and pesticides, and has achieved certain results in reducing the amount and increasing the efficiency of chemical fertilizers and pesticides. In the process of agricultural non-point source pollution prevention and control, Jiangsu Province explores a large-scale daily supervision model, sets up monitoring points at the retreat of large-scale irrigation areas in the province, and selectively monitors different monitoring indicators according to the actual use of pesticides, so as to provide a basis for scientific supervision by relevant departments. In combination with the development of agriculture and animal husbandry, safe ecological buffer zones, and the formulation of local environmental standards, the use of chemical fertilizers and pesticides in 2021 decreased by 0.6% and 0.5%, respectively, compared with the previous year. In the pilot process of the two places, the 4R technical governance model of "source reduction-recycling-process interception-end treatment"

has always been followed, highlighting the source management of agriculture, focusing on pre-prevention rather than post-remediation, which has certain large-scale significance.

### **3.2.2 Judicial practice**

Using "agricultural non-point source pollution" as the keyword, the cases that can be consulted can be divided into two categories: one is the case of the people's procuratorate urging the administrative department to perform the supervision and management duties of non-point source pollution prevention and control, such as the case of the Hongshan District Procuratorate v. Wuhan Hongshan District Urban and Rural Development Bureau for non-performance of statutory duties, and the administrative public interest litigation case of the People's Procuratorate of Heshan City, Guangdong Province urging the rectification of agricultural material waste pollution; The other type is the administrative litigation cases filed by the main body of agricultural activities on the legality of administrative punishment and other matters, such as the case of the dispute between the Yongning County Sanding Earthworm Breeding Factory and the Yongning County People's Government on the legality of the closure of the farm, and the case of the Renhe and Benghu Xiaolong Pigeon Farm in Baiyun District, Guangzhou City and the Township Government of the People's Government of Renhe Town, Baiyun District, Guangzhou City.

In the first type of case, the agricultural environmental pollution was not stopped in a timely manner because the administrative department related to agricultural non-point source pollution did not perform its supervisory duties. The procuratorial organs exercise the power of supervision in accordance with the law, and urge the relevant departments to exercise their duties to rectify illegal acts of agricultural environmental pollution through the pre-trial recommendation procedure, and enter litigation procedures when the illegal acts are still not regulated. It can be seen that the current legal system lacks provisions on the subject, specific measures, and responsibility of "agricultural non-point source pollution", and the awareness and behavior of the administrative departments on the supervision and governance of agricultural non-point source pollution are not in place; The reason why the procuratorate initiated an administrative public interest lawsuit on agricultural non-point source pollution was that the public reported it or the procuratorate discovered the pollution problem by performing its supervisory duties on its own. In summary, the active exercise of the supervision power of all relevant subjects has a certain role in promoting the prevention and control of agricultural non-point source pollution in the relevant government departments. In the second type of case, the vast majority of the subject of the dispute is the farmer, and there are few disputes between the planting farmers and the administrative authorities, which reflects that the relevant administrative departments focus on agricultural non-point source pollution in the breeding industry, animal husbandry, etc., but largely ignore the pollution regulation of soil and runoff caused by the use of pesticides and fertilizers in the process of planting and forestry activities.

## **4. Enlightenment on the legal regulation of agricultural non-point source pollution in China**

### **4.1 Clarify the principles and norms of "governance at the source"**

Some scholars have pointed out that "there is no need to distinguish between point source pollution and non-point source pollution in the prevention and control of soil pollution. Human activities can contaminate soil, but pollutants that enter the soil are often introduced at a defined location. However, as mentioned earlier, agricultural non-point source pollution has the characteristics of "transitivity", "agriculture" and "risk", which means that most agricultural non-point source pollution presents a pollution pattern from the "point" of local soil to the "surface" of water caused by runoff. The above analysis of judicial practice also reflects the inadequacy of



supervision and punishment of soil pollution. Therefore, it is necessary to take soil pollution control as the top priority of agricultural non-point source pollution prevention and control, implement the principle of source control into laws and regulations at all levels, departmental rules and other normative documents, and use legal provisions to guide the implementation of the plan. In terms of specific system design, we can learn from the model of the pilot area and form system provisions: clearly stipulate the real-name registration system for the purchase of chemical fertilizers and pesticides, share the information with the relevant monitoring departments at the same level, and the grass-roots monitoring departments responsible for supervision should reasonably install monitoring equipment at the retreats of various types of agricultural land, and carry out targeted index monitoring according to the application of pesticides and fertilizers of different types of agricultural land and excrement accumulation sites, and take timely measures to stop when the data is abnormal. Of course, this needs to be guaranteed by relevant supporting measures and institutional provisions, such as monitoring standards. The determination of this system can reduce the drawbacks of "monitoring and treatment of sewage only after it has flowed into rivers and lakes" to a certain extent.

#### **4.2 Form a departmental joint mechanism of "coordination by administrative departments and presiding by procuratorial organs"**

In the above-mentioned judicial practice, it can be found that the exercise of corresponding supervisory duties by procuratorial organs has a certain positive significance in promoting the implementation of the responsibilities of the competent departments of administrative organs. The existing laws and regulations on the prevention and control of agricultural non-point source pollution shall be specific and detailed. The provisions of the Environmental Protection Law and other laws on the prevention and control of agricultural non-point source pollution should clarify the responsibilities of the competent administrative departments, rather than just some principled provisions. On this basis, the rules and regulations of various departments and local regulations with regional and industrial characteristics can more accurately stipulate the provisions on the division of responsibilities and determine the legal basis for the implementation of acts and the assumption of responsibilities. Due to the wide area and agricultural characteristics of agricultural non-point source pollution, the environmental elements involved are diverse, and different competent departments are inevitably involved. For example, on November 5, 2020, the Huizhou Municipal People's Procuratorate organized a roundtable meeting to clarify and improve the problems of overlapping functions and inadequate supervision of multiple administrative departments in drinking water source protection zones. In addition, according to the provisions of Article 25, Paragraph 4 of the Administrative Litigation Law of the People's Republic of China and Article 21, Paragraph 3 of the Interpretation of the Supreme People's Court and Supreme People's Procuratorate on Several Issues Concerning the Application of Law in Procuratorial Public Interest Litigation Cases, it is clearly stated that the people's procuratorate has the function of prosecuting administrative organs for inaction or disorderly acts. In this way, the organizational responsibilities and supervisory functions of the procuratorial organs can better ensure the effectiveness of the supervision of the administrative organs in the coordinated control of agricultural non-point source pollution.

#### **4.3 Adopt incentives for agricultural producers**

Agricultural producers, as the direct actors of agricultural non-point source pollution, in addition to pesticides, fertilizers and other pollution prevention and control awareness is insufficient, although agricultural production has a certain agricultural subsidy policy, but the cost of agricultural

producers and operators to carry out clean agricultural production is greater than the benefits obtained by ordinary farming, so that many agricultural producers still apply inappropriate amounts of pesticides and fertilizers when farming or other agricultural production. It is not advisable to tax dispersed agricultural producers, but positive incentives should be adopted, such as increasing the amount of subsidies for clean agricultural production for agricultural producers, so that the subsidy benefits can compensate for the cost of clean agricultural production to a certain extent; At the same time, we should fully take into account the profit-seeking mentality of agricultural producers, set legal standards for green agricultural products, and help the sales of green agricultural products through relevant competent departments to promote agricultural producers to consciously produce green agricultural products.

## 5. Conclusion

The deficiencies in the legal regulation of agricultural non-point source pollution prevention and control in China have hindered agricultural development due to non-point source pollution. Under the concept of "integrated management of mountains, rivers, forests, fields, lakes, grasslands and sands", it is necessary to determine the principles and norms of "source management", and determine the concept of source treatment in principle, so as to play the role of agricultural non-point source pollution prevention and control system in the long term. Source treatment also needs to take into account the clarification of the rights, obligations and responsibilities of all relevant subjects, so as to provide a specific operational mechanism for the prevention and control of agricultural non-point source pollution. In addition, the research on how to determine the boundaries of pollution of different environmental elements in the legal regulation of agricultural non-point source pollution sources and the standards of green agricultural products in the positive incentive mechanism of agricultural producers still need to be detailed and further discussed in the future, so as to provide a more operational institutional design for the legal regulation of agricultural non-point source pollution in China.

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