

Teaching Reform Paper of Environmental Science Introduction

-- An Investigation and Analysis of Hebei Agricultural University Students' Views and Suggestions on Water Pollution

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Abstract

With the continuous development of social economy and the continuous improvement of people's living standards, the problem of water pollution is more and more serious, social attention is increasing, the control of water pollution is imminent. In order to fully understand the opinions and suggestions of college students on water pollution in Baoding Campus of Agricultural University of Hebei, master the attention, opinions, suggestions and other aspects of the students on water pollution in Baoding Campus of Agricultural University of Hebei, the questionnaire survey of random sampling and online and offline synchronous interview survey method to carry out this research activity. Through data analysis and other methods to introduce the current situation of water pollution and the views and suggestions of contemporary college students on water pollution.

Keywords

College Students; Water Pollution; Research Report; Governance Suggestions.

1. Introduction of University Students' Views and Suggestions on Water Pollution

For a long time, water pollution problems emerge one after another, and people are deeply troubled by it. With the continuous development of economy, the control of water pollution becomes more and more important. As a major body of the contemporary society, college students with novel cognition will be a major force in water pollution control. Their understanding of the environment will determine the development trend of the future society. Therefore, we specially designed a questionnaire related to water pollution to investigate the degree of college students' grasp of water pollution, understand their cognition, attitude and participation in water pollution in detail, put forward relevant suggestions to enhance the environmental awareness of college students, and provide reference information and suggestions for the treatment of water pollution problems. This survey questionnaire adopts the form of random sampling, that is, questionnaires are sent out and collected to students of all departments and grades in Agricultural University of Hebei, and each student completes one questionnaire independently. A total of 150 questionnaires were sent out, 137 were recovered, 136 were valid, the recovery rate was 97.3%, and the valid questionnaires accounted for 98.6%. The sex ratio was 45.89% for male students. Female 54.11%, mainly concentrated in freshmen and sophomores, of which 62 sophomores accounted for 45.59%, freshmen accounted for 38.97%, juniors and seniors accounted for 8.09% and 2.21% respectively, graduate students accounted for 2.94%.

2. Student Survey Situation

2.1. Analysis of the Cognition Degree of Water Pollution

According to the data, 9.56% of the students pay close attention to water pollution, 22.06% often pay attention to it, 59.56% occasionally pay attention to it, 8.82% never pay attention to it, that is, 90% of the students have more or less understanding of water pollution, and another 10% of the students do not know more or less about the school's publicity. Their awareness of water resources protection is not strong; In terms of educational background, we can clearly see that the understanding of disorderly sewage in river is related to educational background, with bachelor's degree 94.95%, master's degree 2.94%; Male and female students' knowledge of this aspect is basically equal, and male and female students' awareness of water pollution control can be said to be the same!

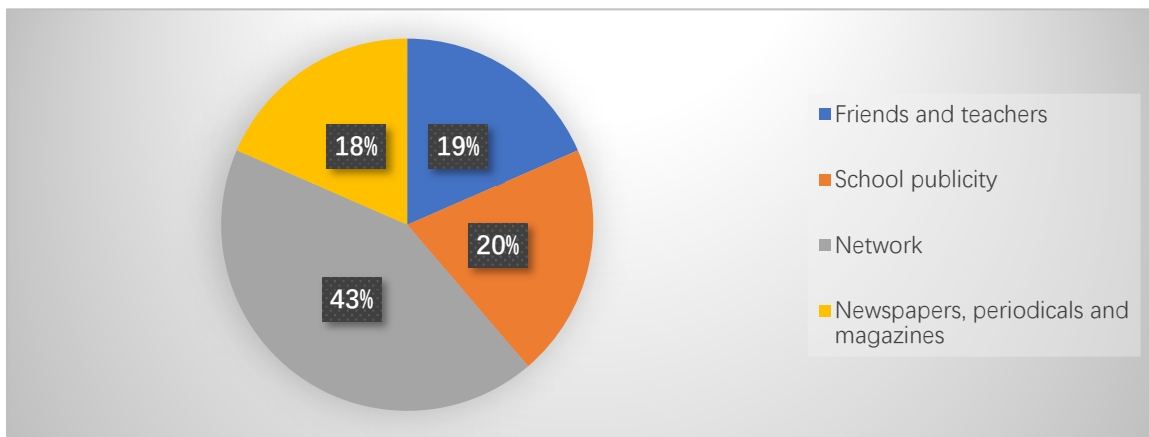


Figure 1. Understand the pathways of water pollution

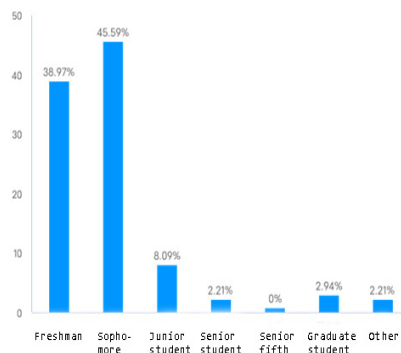


Figure 2. grade level

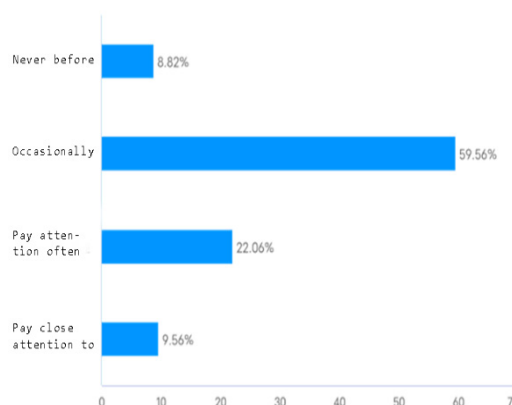


Figure 3. Pay attention to the problem of water pollution

Through data analysis, it can be seen that graduate students on campus do not have a full understanding of water pollution issues, and students on campus tend to learn and obtain information on the Internet. The main reason is that we are in an environment covered by the network and have more access to the network. The second reason is that we spend most of our time on campus and it is easy to receive knowledge from the campus. Therefore, we suggest to increase the playback of relevant videos on platforms such as Douyin and Kuaishou, strengthen the university's publicity and publish this knowledge on the university's Weibo and wechat official account, so that more students can understand and participate in the process of water pollution control.

As we all know, the problem of water pollution in our country is very serious. However, 38.24% of the people think that the problem is not serious, which means that many contemporary college students do not realize the seriousness of the problem or do not care about it. 31.62% said they did not understand the problem, which indicates that less than one-third of contemporary college students do not understand or do not pay attention to the problem, and their consciousness is weak.

According to the questionnaire about whether your school or college has conducted publicity lectures and other activities related to water pollution, 33.82% of the schools have never carried out such activities, 49.26% of the schools occasionally carry out such activities, and 16.91% of the schools often carry out such activities. According to the following data, we can infer that only a few schools pay attention to carrying out relevant publicity and education activities. Nearly half of them occasionally carry out such activities. Indirection indicates that schools pay little attention to related issues and have weak ideological consciousness. We can see that the school does not pay attention to the education of students on relevant issues from the rate of one third of never.

The establishment of China Water Week is of great significance, which can make the public pay more attention to and solve the problem of the shortage of fresh water resources. Because China Water Week coincides with World Water Day, it is hoped that each country can hold corresponding activities according to its own national conditions, so as to raise the public's awareness of cherishing and protecting water resources.

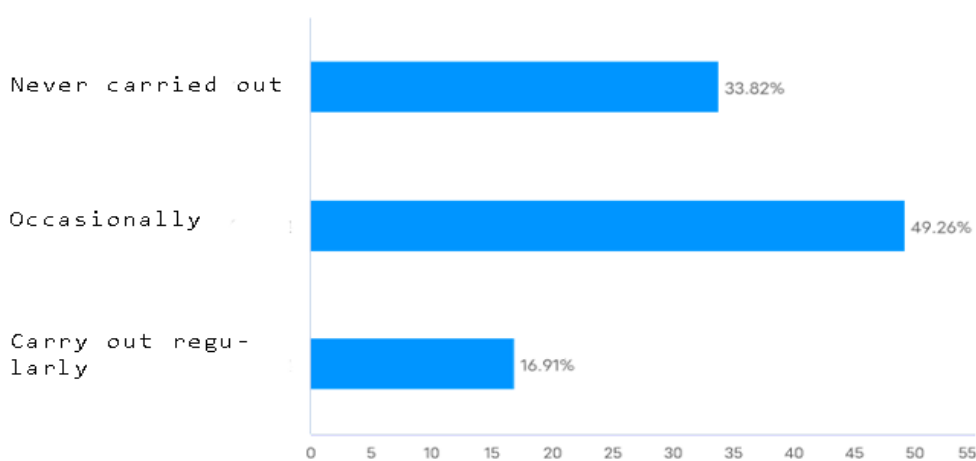


Figure 4. Schools or colleges carry out publicity and lectures on water pollution

According to the current data, the percentage of college students who know the exact date of China Water Week is 34.56%. Considering the original intention of the establishment of China Water Week, this data is not ideal. A total of 51.47% of college students do not know the specific

day of China Water Week, and therefore do not understand the significance of China Water Week. About 10% of them know China Water Week, but do not know the specific date. Generally speaking, the current population has a weak awareness of water resources protection, which will aggravate water pollution at the source. To say the least, if the population has a wide awareness of water resources protection, it will have a very important positive significance for water pollution control. Therefore, we should enhance college students' awareness of water resources protection.

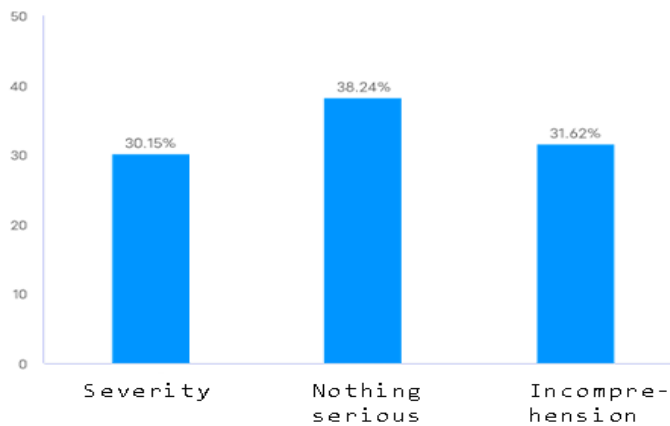


Figure 5. Water pollution in the region

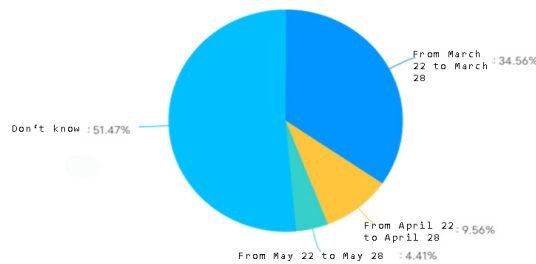


Figure 6. Specific time of China Water

Data show that most college students have the consciousness of reasonable disposal of household garbage, but at the same time, there are still a very small number of college students with weak awareness of environmental protection. Some garbage generated in daily life, because of the toxic and harmful chemicals, will cause environmental pollution, so do not throw away randomly, should be put into the designated garbage can. It is more common to waste batteries and lamp bulbs. Now there is almost no battery port on the trash can. You only need to drop the battery into it to make a contribution to environmental protection. Waste tube contains harmful chemicals to human body, so when discarded, not only should be placed at a fixed point, and should try to avoid broken tube.

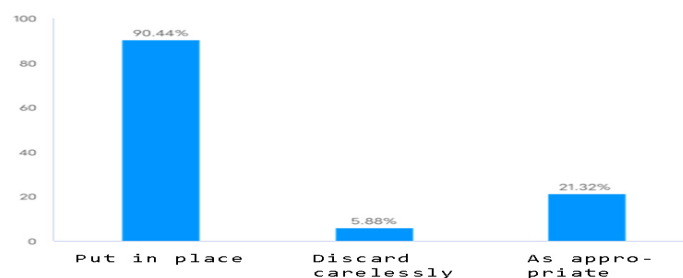


Figure 7. How to deal with domestic garbage in normal times

2.2. Analysis of the Sources and Hazards of Water Pollution

2.2.1. Source Analysis

According to the data, among the main causes of water pollution, industrial pollution accounted for the highest proportion, accounting for 89.71%, followed by domestic wastewater accounting for 85.29%, followed by agricultural pollution accounting for 61.76%, and finally other causes accounting for 21.32%

Industrial wastewater: Direct discharge of untreated industrial wastewater is an important source of water pollution. It has the characteristics of large quantity, wide range, complex composition, high toxicity, and is not easy to purify and treat. Industrial wastewater is most commonly seen in chemical industry, paper industry, food processing industry, metal products industry, iron and steel industry, leather printing and dyeing industry. Every year, about 1/3 of China's industrial wastewater is discharged directly into the water without treatment, and the illegal discharge is very serious.

Domestic sewage: mainly used in urban life of various detergents and sewage, garbage, feces, domestic sewage contains more nitrogen, phosphorus, sulfur, organic fiber, starch, sugar, fat, protein, urea, disease-causing bacteria and so on. Every year, more than 90% of domestic sewage is discharged directly into the water without treatment.

Agricultural sewage: including livestock manure, pesticides, fertilizers, etc. In agricultural sewage, first, the content of organic matter, plant nutrients and pathogenic microorganisms is high; Second, the content of pesticides and chemical fertilizers is high. At present, China has not carried out agricultural monitoring. According to relevant data, on 100 million hectares of cultivated land and 2.2 million hectares of grassland, 1.104,900 tons of pesticides are used every year. China is one of the most serious soil erosion in the world, the annual loss of topsoil is about 5 billion tons, resulting in a large number of pesticides, fertilizers with the topsoil into rivers, rivers, lakes, reservoirs, the subsequent loss of nitrogen, phosphorus, potassium nutrient elements, so that 2/3 of the lake by different degrees of eutrophication pollution harm, resulting in algae and other biological abnormalities, Cause the change of water transparency and dissolved oxygen, resulting in the deterioration of water quality.

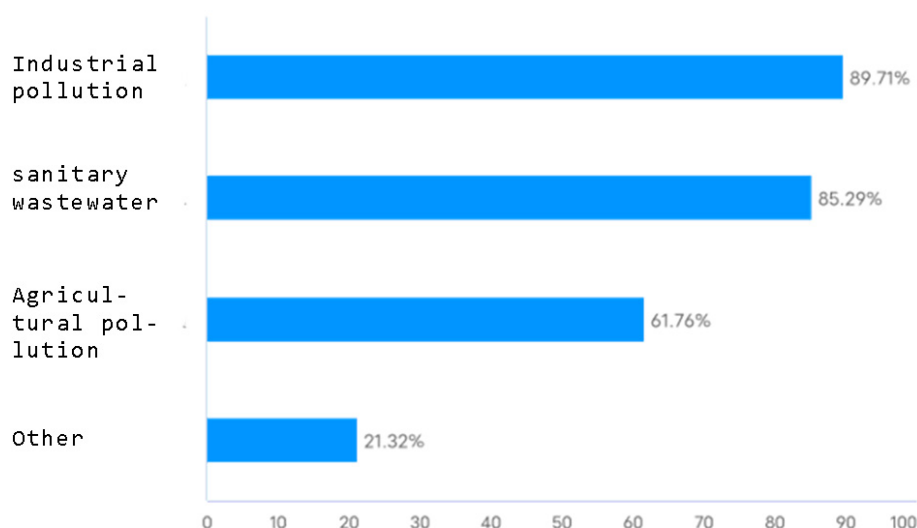


Figure 8. The main cause of water pollution

According to the data, indiscriminate dumping of household garbage accounted for 84.56% of the common water pollution phenomena; The carcasses of livestock and poultry accounted for 56.62%; Battery, electronic products and other metal pollution accounted for 72.79%;

Excessive use of chemical cleaning agents accounted for 77.21 percent. The following data firstly shows that contemporary college students have a certain understanding of China's water pollution problems, and secondly indirectly reflects the endless stream of water pollution problems in China, which are very serious and bring great challenges to the treatment of water pollution. China's water pollution control problem is imminent, the form is very serious.

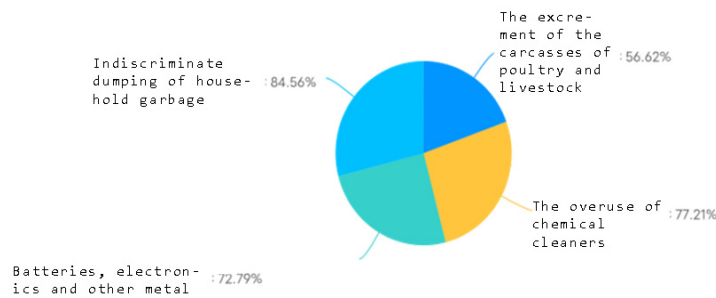


Figure 9. Common water pollution phenomenon

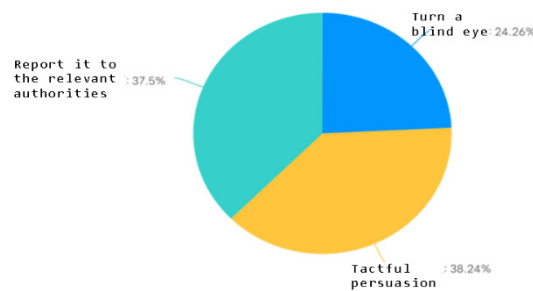


Figure 10. The practice after seeing someone polluted the water body

For preventing the problem of water pollution most college students have a firm awareness of environmental protection, will take a series of measures to reduce or prevent water pollution; However, 24.26% of college students still choose to turn a blind eye, which indirectly reflects that some contemporary college students are still relatively weak in environmental awareness.

2.2.2. Hazard Analysis

The harm of water pollution has four aspects : (1) the harm to the environment, leading to the reduction or extinction of living things, resulting in the reduction of the value of various environmental resources, destroy the ecological balance; (2) Harm to production, because the polluted water can not meet the requirements of industrial production or agricultural irrigation, resulting in reduced production; (3) Harm to people, if people drink the polluted water, it will cause sexual and chronic poisoning, cancer, infectious disease and some other strange diseases, the sensory function caused by the polluted water, will cause inconvenience to people's life, mood is affected; (4) Harm to the economy, it is very expensive to manage and restore polluted water bodies.

2.3. Analysis of Water Pollution Control

The data shows that 77.21% of college students think that the main force in water pollution control is the public, followed by relevant departments accounting for 68.38%, the government accounting for 66.91%, and the society accounting for 64.71%.

According to the general requirements of the state for water pollution prevention and control, in accordance with the principles of "giving priority to water conservation, spatial balance,

systematic treatment and both efforts", the principle of "safety, safety and health" is implemented, the source control is strengthened, the land and water are coordinated, and the rivers and seas are taken into account. Scientific treatment of rivers, lakes and seas is carried out by river basin, region and stage, and the prevention and control of water pollution, water ecological protection and water resources management are systematically promoted.

By comprehensively controlling the discharge of pollutants, the state pays special attention to the prevention and control of industrial pollution, carries out clean transformation of ten key industries, and implements replacement of major pollutants with equal or reduced discharge in new construction, reconstruction and expansion. We will strengthen pollution control in urban areas and speed up the construction and renovation of facilities for treating urban sewage. We will prevent and control pollution in agriculture and rural areas, and prevent and control pollution from working and breeding. To control pollution from non-point agricultural sources, we formulated and implemented a nationwide comprehensive plan for preventing and controlling pollution from non-point agricultural sources. We adjusted the structure and distribution of farming and accelerated the improvement of the rural environment. We will strengthen pollution control of ships and ports, actively control pollution from ships, and enhance the capacity of ports to prevent and control pollution.

Secondly, by adjusting the industrial structure, eliminating backward production capacity in accordance with the law, strict environmental access, according to the planning requirements, clear regional environmental access conditions; Optimize the spatial layout, rationally determine the layout, structure and scale of development, give full consideration to water resources and the carrying capacity of water environment, determine the city, the land, the people and the production by water; We should encourage the withdrawal of polluting industries, actively protect ecological space, and strictly manage the blue line of urban planning. To promote circular development, strengthen industrial water recycling, promote the use of reclaimed water, improve the utilization of reclaimed water facilities, and at the same time promote the use of sea water, in order to promote the transformation and upgrading of economic structure to control water pollution.

Water pollution has a great indirect impact on us, which can not be ignored. The increase of water pollution makes the treatment cost of our domestic water and indirectly restricts the speed of economic development. At the same time, because water is polluted, water is the most essential material that we human beings depend on, our pollution to water will indirectly affect our quality of life. Living standards and physical health, because water pollution will bring a lot of viruses and bacteria and a series of adverse phenomena, in the social background of water pollution for us, is bad news is a kind of declaration of war against us, is a war without gunpowder launched by ourselves, in this war without gunpowder, we human community of destiny, Both played the hunter and the prey, in this process, the most hurt is still in the ecological environment of the survival of the community of destiny.

In fact, there are still a lot of people do not understand these situations, the occurrence of water pollution, for our human community of destiny, who knows we go to the reality is worth our attention, because water pollution brings us a bad impact, in this context, pollution brings us all kinds of diseases, It is the change in the way water resources are used for us, which affects the development of economy and finance from the side and is not conducive to our development.

2.4. Protection Measures and Self-action

According to the current situation of water pollution in our country, what do you think? We should strengthen public participation and social supervision, disclose environmental information according to law, comprehensively consider the water environment quality and the situation of meeting standards, strengthen social supervision, provide training and consultation for the public and social organizations on water pollution prevention and control

laws and regulations, build a nationwide pattern, establish a code of conduct of "everyone is responsible for saving water and clean water", and strengthen publicity and education.

China is in the stage of rapid development of a new type of industrialization, IT application, urbanization and agricultural modernization, and the task of water pollution prevention and control is onerous. Relevant departments in all regions and regions shall effectively handle the relationship between economic and social development and ecological civilization construction, in accordance with the requirements of "local performance of local responsibilities and strengthening industry management", clarify the subject and responsibility subject of law enforcement, achieve their own duties, and fulfill their duties. Highlight the key points, comprehensively rectify, and make effective results.

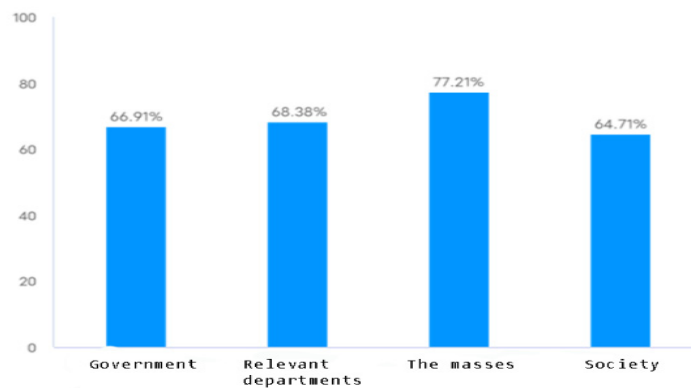


Figure 11. The main force of preventing and controlling water pollution

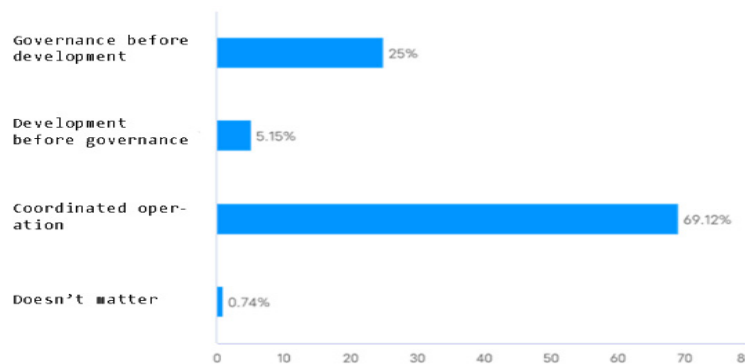


Figure 12. Economic Development and the Advanced Relationship between Water Pollution

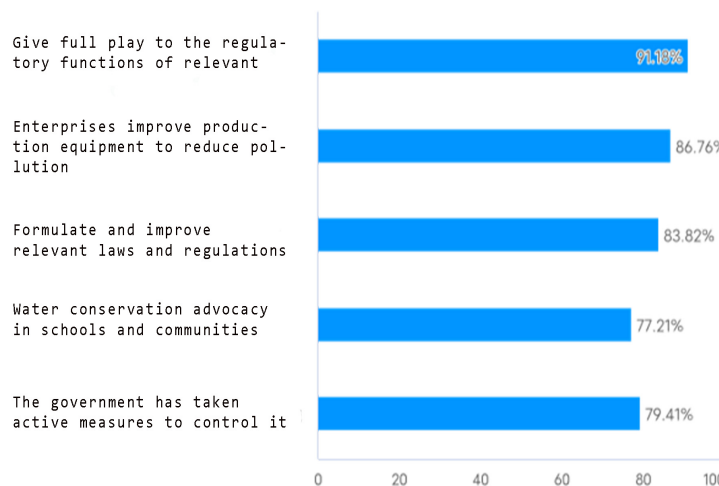


Figure 13. What to do about the current situation of water pollution in China

According to the data, college students think they can do the problem of water pollution consciously garbage classification accounted for the most, 89.71%, followed by strengthening their own protection of water resources accounted for 76.47%, the last is science popularization related content and reduce the use of phosphorus-containing laundry detergent accounted for 73.53% as college students, as college students in the new era, We can start from consciously sorting garbage in daily life, publicize relevant contents to other students, reduce the use of phosphorus-containing laundry detergent and so on, and at the same time strengthen our awareness of water resources protection.

3. Conclusion and Suggestion

Through this survey, we have a general understanding of college students' cognition of water pollution. We have made the following findings from the recovered questionnaires and online and offline interviews:

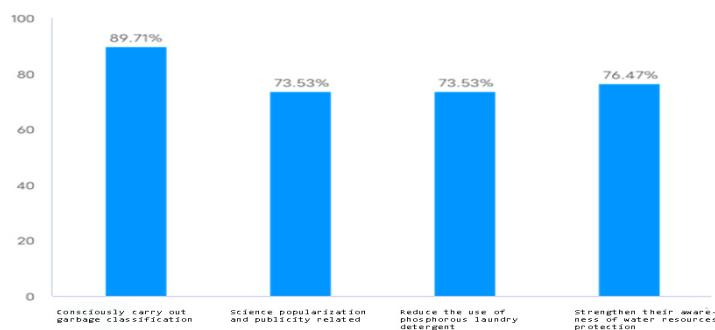


Figure 14. What do university students can do for water pollution problems

The vast majority of students, have some understanding of water pollution, and for want to understand related knowledge level of water pollution is relatively high, also can put forward their own opinions and suggestions in view of the current situation of water pollution treatment in our country, but the proportion of students who were able to take the initiative and especially in-depth understanding of the relevant content is not high, most of the opinions and insights put forward are shallow level. Most students get this information through the school's publicity, and a small part is through the news, participate in related activities to get. Some students don't know the situation well enough, they don't have a high cognition of water pollution, and their thoughts stay at a more superficial level without further thinking about how to better control water pollution. This may be related to the lack of publicity by the school and the government, and more or less related to their major.

A very small number of students have little understanding of water pollution, shallow awareness of water pollution control and improvement, and even no awareness of water pollution control and water resource protection. They will not stop others from polluting water bodies, and lack of participation and responsibility.

Under the current campus network, 4G or even 5G network coverage, in our campus environment with such rich library resources, college students do not have a deep understanding of water pollution, the most important reason is the lack of autonomy, lack of initiative to understand the action, generally speaking, college students' understanding of this aspect is not equal to the resources we have.

According to the investigation situation, we have the following suggestions:

3.1. Countries

(1) Comprehensively control the discharge of pollutants

Pay close attention to industrial pollution prevention. Comprehensively investigate small industrial enterprises with low equipment level and poor environmental protection facilities. Concentrated water pollution in industrial agglomeration areas. Strengthen pollution control in industrial agglomeration areas such as the Economic and Technological Development Zone, High -tech Industrial Development Zone, and Export Processing Zone.

Strengthen urban life pollution control. Accelerate the construction and transformation of urban sewage treatment facilities. Comprehensively strengthen the construction of supporting pipe networks. Strengthen the sewage interception and collection of urban villages, old urban areas, and urban and rural areas. Promote sludge treatment. The sludge generated by sewage treatment facilities should be treated stable, harmless and resource -based treatment, and prohibit handling and disposal of sludge that does not meet the standards into cultivated land.

Promote agricultural and rural pollution prevention and control. To prevent and control pollution from livestock and poultry production, scientifically demarcate prohibited areas for livestock and poultry production, and close or relocate livestock and poultry farms (communities) and specialized farmers in such areas in accordance with the law. We will implement unified planning, construction, and management of rural sewage treatment, carry out rural cleaning projects, dredge river channels, and improve the rural environment in contiguous areas.

(2) Promote the transformation and upgrading of economic structure

Adjusting the industrial structure. Eliminate backward high energy -consuming enterprises in accordance with the law. Strict environmental access. In accordance with the water quality objectives of river basins and the requirements of functional zoning planning, the conditions for regional environmental access should be clarified, functional zoning should be refined, and differentiated environmental access policies should be implemented.

Optimize spatial layout. We will rationally determine the layout, structure and scale of development, strictly control the development of water-scarce areas, severely polluted areas, and water-consuming and highly polluting industries in sensitive areas, and actively protect ecological space. We will promote circular development, strengthen the recycling of industrial water, and promote the use of reclaimed water.

(3) Strengthening scientific and technological support

Promote the application of demonstration technology. We will focus on promoting technologies for drinking water purification, water saving, water pollution treatment and recycling, urban rainwater collection and utilization, safe reuse of reclaimed water, water ecological restoration, and pollution prevention and control of livestock and poultry breeding.

Vigorously develop environmental protection industry. We will conduct a comprehensive review of regulations, rules and regulations concerning market access to environmental protection and business practices, and the regulations and practices of abolishing the formation of the national unified environmental protection market and fair competition. We will promote the industrial development of advanced and applicable water-saving, pollution control and restoration technologies and equipment.

(4) Giving full play to the role of market mechanisms

Streaming for price taxes and fees. We will accelerate reform of water prices and fully implement a tiered water pricing system for residents. We will improve the charging policy. We will revise the methods for collecting and managing urban sewage treatment fees, sewage discharge fees, and water resources fees to ensure that all fees are collected. We will improve tax policies. We will implement preferential tax policies for environmental protection, energy and water conservation, and comprehensive utilization of resources in accordance with the law. We will accelerate legislation on environmental protection tax and reform of resource taxes and fees.

Establish an incentive mechanism. We will encourage advanced energy conservation and emission reduction enterprises and industrial clusters to meet higher standards for water efficiency and pollution discharge intensity, and support demonstrations of cleaner production, water conservation, and pollution control.

Implementation of cross -border water environment compensation. Explore ways to establish a compensation mechanism for transboundary water environment through horizontal financial subsidies, pairing assistance and industrial transfer, and carry out trials of compensation.

(5) Strict environmental law enforcement and supervision

Improve regulations and standards, improve laws and regulations. We will accelerate the pace of revision of laws and regulations on water pollution prevention and control, Marine environmental protection, pollution discharge permits, and chemical environmental management, and study and formulate laws and regulations on environmental quality target management, environmental function zoning, water saving and recycling, drinking water source protection, pollution liability insurance, groundwater management, environmental monitoring, and ecological flow guarantee.

Increase law enforcement. All polluters must meet all discharge standards in accordance with the law. Enterprises that exceed the standards or total emissions will be given "yellow card" warnings, and production will be restricted or suspended for rectification

Environmental violations will be severely cracked down on. We will focus on environmental violations such as waste water containing toxic and harmful pollutants, sewage containing pathogens, and idle water treatment facilities for pollutants. We will strictly implement the compensation system for those responsible for ecological damage.

Strengthen professional and technical training such as environmental monitoring, environmental monitoring, environmental emergency, strictly implement law enforcement, monitoring and other personnel to hold a certification system, strengthen grass -roots environmental protection law enforcement forces, and have conditions for townships (streets) and industrial parks.

3.2. Society

(1) Consolidating propaganda on a regular basis

1. Consolidate the basis of daily publicity.
2. Build a publicity platform.
3. Attach importance to the construction of publicity team.

(2) Highlight the theme of publicity

1. Carry out theme publicity on March 22, "World Water Day", "China Water Week", 6.5, "World Environment Day" and 6.30, "xx Ecological Day".
2. Make a series of short video programs on flood control.
3. Launch a series of national fitness activities.
4. Customize the quality line of water tour.
5. Carry out large-scale visits to the water and pollution control grid.

(3) Strengthen the interaction between "We media and mainstream media"

1. Promote dynamic reporting.
2. Strengthen thematic publicity.
3. Strengthen supervision by public opinion.

3.3. Individuals (Students Themselves)

- (1) Consciously sort the garbage and put it in the designated place.

- (2) Play the role of supervision, make full use of their supervision and reporting power, found water pollution problems should immediately report to the relevant departments.
- (3) Actively respond to the call of the government, and actively participate in the action of water pollution control.
- (4) Enhance their own environmental awareness, constantly improve the level of thought.

4. Conclusion

The prevention of water pollution is beneficial to alleviate the problem of water pollution and promote the healthy development of the national economy. We should continue to adjust the measures of water pollution prevention and control to make the work of water pollution prevention and control better. We should uphold the principle of sustainable development and promote the sound development of the ecological environment. All departments should earnestly fulfill their responsibilities. First, the state should keep a good grasp of the big picture and improve relevant laws and regulations. Secondly, schools should increase publicity to advocate people to save water and reduce water pollution. Finally, every one of us should start from the present and save every drop of water.

We can do something about the pollution of living sources. Save water, reduce waste water discharge, choose green personal care products and highly concentrated washing products, etc., to reduce water pollution at source. Let's work together for a better and cleaner world, and for the blue sky in the eyes of children!

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