

## A Research on the Methods and Strategies for Developing Citizens' Environmental Awareness and Advancing Citizens' Environmental Contributive Actions

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### Abstract

With the increasing pollution of global environment, it is becoming a significant topic on how to build a sustainable city. A city's sustainable development needs all citizens' active participation. In China, most citizens haven't paid as much attention to environmental awareness and environmental contributive actions as developed countries' citizens. Thus, it is one of the most important methods to develop citizens' environmental awareness and advance citizens' environmental contributive actions.

This paper discusses the methods and strategies for developing citizens' environmental awareness and advancing citizens' environmental contributive actions on the view of practice.

The methods and strategies for developing citizens' environmental awareness are as follows:

First, organize regularly people of various circles to take part in the environmental checking by local government and periodically inform the local citizens of the present environmental situation and possible trend, therefore local citizens can thoroughly recognize and understand the local environmental situation.

Second, assign a regional "environment-experiencing day", so that local citizens can experience the practical influence of the natural environment on their lives by adopting different methods.

Third, promote a variety of community activities on the theme of environmental protection, so that every citizen forms the awareness "everyone is responsible for environmental protection".

Fourth, elect "Annual Figures of Environmental Contribution in different fields. Their actions and

achievements on environmental contribution should be publicized to the whole society, so that every citizen can realize the same importance between environmental contribution and economic contribution.

The methods and strategies for promoting citizens' environmental contributive actions are as follows:

First, educate citizens in detail how to carry out environmental contributive actions and cultivate the good atmosphere that is lofty to make contribution to the environment.

Second, honor and award the outstanding individuals who make remarkable contribution to the environment systematically and encourage the social service organizations to give the outstanding individuals preferential treatment.

Third, by making full use of the social idle hands, establish "harmonious environmental awareness education and environmental contribution action education according to the plan and system.

Fourth, in the long run, set up the individual environmental contribution files in the whole country and lay the foundations of further environmental management.

**Key words:** Environmental awareness; Environmental contribution; Environmental contribution action; Sustainable city

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### INTRODUCTION

There is no room for doubt that environmental problems have become one of the major problems hindering the process of urbanization in countries and countries'

sustainable development. Under the circumstances of increasingly serious environmental crisis, lessening the global environmental crisis along with improving the global economy is a remarkable problem focused by the whole world. The development of scientific technology directly leads to the deterioration of the environment, but we also hope it can solve the current environmental crisis. However, the current scientific technology plays a tiny role in solving the environment crisis. What is the basic outlet for the problem? In this article, the writer thinks the essential outlet is on human-being.

## 1. ENVIRONMENTAL PROBLEMS ARE THE PROBLEMS FOR THE ENTIRE PEOPLE

The serious atmosphere pollution and water pollution hurt the national health directly. In 1991 the whole death rate of Chinese population is six hundred and seventy over one hundred thousand, it increases by zero point five percent than the previous year. The research shows that cancer is related to the environmental factors in some aspects, especially the lung cancer. At present, cancer has become the primary reason for the death of urban people in China, with the death rate caused by cancer one hundred and twenty nine point nine over one hundred thousand and one hundred in larger cities and four over one hundred thousand in small-medium cities. The lung cancer's death rate is highest in all kinds of cancers. The lung cancers are mostly concentrated in the region of the earlier industrial development, the higher economic density, the more serious atmospheric pollution. The proportion is thirty-five point two over one hundred thousand in larger cities, twenty three point seven over one hundred thousand in small-medium cities, the percentage of which respectively is twenty seven point percent twenty two point one percent. In recent years, it also has shown the rising tendency. In Chinese rural areas, the percentage of cancer death rate in the total death rate is also gradually increasing year after year. The respiratory system diseases are the primary cause for the residents death in rural area, moreover, the atmospheric pollution is main predisposition for the respiratory system diseases, especially for the chronic bronchitis. More than three million die from the disease caused by environmental pollution every year in the whole world.

The increasing use of Freon causes the Ozone reduction and Ozone cavity. The function of Ozone can absorb the Ultra-violet of two hundred to three hundred nanometer wavelength, so it can help reduce the harm to the living things by the ultraviolet. If we human being do take measures to protect the ozone layer, 154 million people will have suffered from the skin cancer in the whole world by 2,075, 18 million people will have suffered the cataract, the crops will have reduced seven

point five percent. Aquatic product will have reduced 25%, the loss of materials will be about four points seven billion dollars.

The number of refugees caused by the environmental problems in the whole world is about thirteen million, perhaps it equals the number of political refugees caused by political disturbances and wars. According to a survey in 1982, the loss caused by the environmental pollution was about fifty billion yuan in China every year and the loss from the ecological damage was thirty billion Yuan. If we add them together, it will amount to more than eighty billion Yuan. According to a conservative estimate, owing to the atmospheric pollution, China would encounter the loss of two hundred billion Yuan every year after 2000, the loss would account for about one point two percent in national income.

Every citizen is involved in the environmental problem and the environmental degradation threatens the existence and development of the whole human being. Everyone should stand up to face the challenge.

## 2. THE DISCUSSION ON THE DEVELOPMENT OF CITIZENS' ENVIRONMENTAL AWARENESS

Because we shall discuss the development of citizens' environmental awareness from the view -point of practice, it is necessary for us to know the level of citizens' environmental awareness before-hand.

In order to know it, a random interview was implemented on the common citizens. Interviewees included both urban citizens and rural citizens. The age ranged from the old, the middle, and the young to the children. The conclusion was that everyone realized the obvious deterioration had taken place in the decades in our living environment. From cities to country, the deteriorating events could be listed as follows, water scarcity, the serious pollution of the surface water, the dramatic reduction of the marine lives, the rapid decrease of the ground water table, the worse air and the pollution to the crops. These events commonly occurred and the area of cultivated land had reduced sharply as a result of the urbanization, no matter what his or her educational background is, the environmental deterioration can be found in their talk easily. Little children did not have the stronger environmental awareness than the old, the main reason was that they lacked living experience and didn't notice so much environmental change.

Generally speaking, the common citizens' environmental protection awareness isn't rich enough, although they have the basic environmental protection awareness. Some interviewees did something unfavorable to the environment for convenience. They admitted honestly what they had done, but they thought "start one's tiny action is not enough to influence the environment,

sometimes even though he enforces the environmental action, others don't's action will not solve the problem". Everyone lack the awareness of "from minor things and starts from myself up". For example, quite a few college students are used to buy the food contained in the disposable plastic bags, and washing clothing by running water. Some consumers are ready to use the disposable wooden chopsticks in some small restaurants. A large number of disposable articles for daily use are circulated in the market. To sum up, the common citizens have the basic knowledge of the present environment and of actions of being not good to the environment. But they don't know how much responsibility they should bear, they are short of the environmental awareness. Therefore, the conclusion can be reached that many citizens' environmental awareness is below the level of perfectness. We should do as follows.

Firstly, organize regularly people of various circles to take part in the environmental checking by local government and periodically informs the local citizens of the present environmental situation and possible trend, therefore local citizens can thoroughly recognize and understand the local environmental situation.

The essential purpose of the environmental checking lies in the following two aspects. On one hand, the result of environmental checking should be informed to the public, thus the environmental awareness can be set up and cultivated. On the other hand, the result of environmental checking can also be used in the environmental monitoring and environmental effect estimate, these two aspects are complementary to each other. The organization of environmental checking should be in the charge of local government and social public institutions and its working process and working result should be under the social supervision, and it should be communicated to the public by certain channel. This kind of arrangement includes all sections of the society, which shows the emphasis on the environment from the whole society.

One key point and difficult point of the environmental checking is to set up the Environmental Evaluating Model based on the local actual situation. The model should be different from the other professional models, because it must be informed to the public, understood and recognized by most of the citizens. This should be a dynamic model combining management with technology, and the parameter of the model may derive from the comprehensive opinion of the experts and the citizens' representatives, which shows the wisdom and strength of the whole society. For example,

Present Environmental Situation =  $F$  (air quality, water quality, ground water table, biological species, climatic anomaly, typical death rate from environment, etc..)

The variables in the environmental model should be understood easily by the public and represent the

remarkable features of the environment. Every key factor in Evaluating Model should be regularly evaluated by the concerned organization, and the result of the evaluation should be informed to the public through certain channel, moreover, the environmental column can be established in these public media. A specific channel can be set up to announce the environmental situation, for example, issue regularly the white paper on environmental evaluation. On the premise of cost, efficacy and effect, the result of the environmental evaluation should be informed to the public by proper channels, and get feedback, collect proper opinion on the environmental protection. Through this long-term interaction, the public environmental awareness can be cultivated and improved. The cultivation and improvement of the public environmental awareness can't come into being overnight. This task should be raked as the long-term systematically project to management by certain government offices. The publicity should be loved by the masses, instead of the rigid ways of education.

Secondly, assign a regional "environment-experiencing day", so that local citizens can experience the practical influence of the natural environment on their lives by adopting different methods.

During the interview we find the interviewees who have the environmental experience often have stronger environmental awareness. For example, Harbin is a city short of water. The water was in short supply several years ago in Harbin. The citizens experienced the inconvenience brought by the suspension of water supply. Most citizens in Harbin are aware of saving on water, thus the water resources can be utilized properly in daily life, and the rate of secondary utilization of water is very high. On the contrary, the citizens in Beijing are unaware of water-saving. Although the water is in serious short supply in Beijing, they seldom had the experience of the suspension of water supply. Many citizens, including a lot of well-educated citizens, didn't really realize the scarcity of water resources. The conclusion can be that it is very difficult to have the awareness of saving on water in their deeper mind. Thus, it is necessary for all citizens in different methods to experience the real influence caused by the environment.

Regional Environment-experiencing Day should be fixed according to the circumstances. For example, the cities that are in short supply of water in North China may set up the specific environment-experiencing day for the supply of the water resources. The main purpose is to let the common citizen know the terrible result caused by the short supply of water. If necessary, the key officers who are responsible for the decision-making about the environment should be organized regularly to experience the specific environment-experiencing day, so that they should first take the environmental protection into consideration before they make any important policies.

The government officials can also be considered to work as the environmental protection representatives or the models of the environment protection contribution, so that they can become members of common citizen, personally, they will experience the inconvenience from the suspension of water supply forecasting beforehand, even the abrupt suspension. All citizens will have feeling in common if measures can be taken to save water, what kind of life we'll live in the future. The officials' participation and their model influence will reduce the complaints from the common citizens. They can really understand the meaning of "Environmental protection is everyone's responsibility". With the environment awareness increasing and the relative environmental protection complementary system improving, environmental protection can become the state policy.

Thirdly, promote a variety of community activities on the theme of environmental protection, so that every citizen forms the awareness "everyone is responsible for environmental protection".

"Environmental protection is everyone's responsibility" as a slogan is easier said than done. It is very difficult to really implement it in our daily life. Especially in a large-populated country, and the citizens' basic quality is lower. In order to make the slogan come into effect, a series of group activities should be enforced in the social practice. This can make the environmental protection awareness be deeply rooted in citizens' ideology. The simplest group activities can start from the community activities, because the community is the home and hearth of the citizens.

The environmental protection knowledge contests can be held within the community, or between communities. Through contests, environmental protection knowledge can become popularized and environmental protection education popularity activities can be carried out.

At first, public service advertising posters can be put up in the community. The educational function of advertisement can be remarkable from the point of marketing theory and practice. However, the present society always pays more attention to the economic profit, therefore you can find commercials in every corner in the street. If we have sufficient environmental awareness, the citizens' eyes can be filled with public welfare advertisement. The implementation of the public service advertisement can be viewed as a system project. The level of whole citizens' environment protection awareness in a specific region should be taken into account, at the same time, the theme and content of public welfare advertisements should be arranged step by step systematically and gradually, in this way, the awareness can be achieved without a sound. Environmental protection education is not a show, but a communication between the masses.

Secondly, neighborhood committee posts blackboard newspaper to popularize the environmental protection knowledge. With an item of environmental protection knowledge can be popularized every week or every month, for a long time, the better educational effect can still be obtained. In order to attract more citizens' support and participation, a lot of stimulating measures can be taken. For example, citizens can be given the chance to provide environmental protection knowledge, and the provider can be announced on the blackboard newspaper. For one year as a period, the citizens having the greater contribution should be posted up.

Thirdly, environmental protection volunteers' organization can be established in the community, and citizens can take part in activities according to their different conditions. Environmental protection volunteers' organization can carry out the related activities according to circumstances, they can either popularize the environmental protection education, or carry out the environmental protection activities, and they will complement each other.

Fourthly, elect "Annual Figures of Environmental Contribution in different fields. Their actions and achievements on environmental contribution should be publicized to the whole society, so that every citizen can realize the same meaning between environmental contribution and economic contribution.

At present, the economic construction is emphasized by the whole society, so "the man of the year for economic contribution" will be elected annually by the mass media. The man of the year may to certain extent plays the role of benchmarking, and can motivate more and more entrepreneurs to be aggressive in their effort to expand their business. Actually, this kind of practice can be copied in electing "environmental contribution man or woman of the year" and "environmental contribution organization of the year" in different fields. The activities and achievements that they have done on the environmental protection contribution can be widely publicized through the public media, so that the whole society will know them, respect them and learn from them. They will become the stars of environmental protection and have a lot of fans.

"Man or Woman of the Year for Environmental contribution" may come from the leading cadres. Their environmental contribution activities and achievement may result from their highly sense of responsibility in their leading field, of course it may also come from outside their field. They can play the role of a benchmarking to other directors. For the "environmental contribution organization of the year", special support should be given to, such as the priority of government procurement.

"Man or Woman of the Year for Environmental contribution" may also be the ordinary labors from the grass-roots units. Their activities and achievements may

come from their setting a good example and performing duties honestly. It is reported that a cook, due to his own environmental protection awareness, refused to cook any wild animals and persuade the restaurant owner not to sell wild animals, thus he was fired at many times and lived on nothing. Is an ordinary labor's behavior worth learning by everyone? Is he regarded as a hero? Should he be given the necessary affirmation, publicity and support?

### 3. THE DISCUSSION ON PROMOTING CITIZENS' ENVIRONMENTAL CONTRIBUTIVE ACTIONS

Based on developing and improving citizens' environmental awareness, it is a necessary way to promote citizens' environmental contributive actions.

The methods and strategies for promoting citizens' environmental contributive actions are following:

Firstly, educate citizens in detail how to carry out environmental contributive actions and cultivate the good atmosphere that is helpful to make a contribution to the environment.

From the survey, the citizens' had their own understanding of the environmental protection, but they didn't change their environmental protection awareness into environmental protection contribution activities. On one hand, the citizens lack the better habit of environmental protection contribution activities, because their behaviors are always restrained by the old habits; on the other hand, they always think their tiny action, whether it is positive or negative, had trivial influence on the environment. They didn't know what action they take can be beneficial to the environment in their daily life. On the basis of this, advancing the environmental protection contribution activities should focus on the details and solid work.

In the first place, the habit should be formed to be beneficial to environmental protection, and any tiny environmental protection contribution activities should be certified. The formation of the national habit is a slow socialization process. Changing the old habit and forming a new one is a gradual systematic project. Before the better habit is formed, it is necessary to have a perfect system of administration and matching mechanism. For example, Chinese are used to using "throw-away plastic bags". Although "the ban on plastic bags" had been issued and brought into effect for two years, in fact, it produced little effect. One of the main reasons is that the citizens are not used to taking vegetable baskets for their inconveniences. As a matter of fact, most citizens can understand the environmental protection significance on "the ban on plastic bags", but they didn't refuse to use the throw-away plastic bags actively and initiatively. Systematic managing measures should be taken to administer the throw-away plastic bags. The "combination

blow" should be used in the field of production, distribution and final consumption. In spite of its difficulty, the measures will bring better results. From the point of cultivating the habit of final consumers, a serious of measures can be taken. The field of production is the first item, the factories who manufacture the unqualified plastic bags should be restricted strictly. The field of production is the second item, once the unqualified plastic bags are found circulating, the factories should be punished seriously, and those doing something efficiently should be encouraged. The field of circulation and the field of the final consumption together belongs to the third item, consumers should be encouraged to bring one's own bags by the commercial organizations. For example, the consumers who bring their own bags can close an account with priority in the supermarket. The implementation of the systematic regulations can help form the habit of national environmental protection. Certainly the practical problems confronted by the ordinary citizens should be put in the first place to solve.

In the second place, the citizens' active environmental protection contributory actions should be guided. For instance, most Chinese residents are used to utilize running water once for all, running water can be used to wash dishes, to wash vegetables. The residents should have the scientific, reasonable knowledge of utilizing water, thus the residents can use the water resources wisely, meanwhile the necessary systematic support can complement each other. For example, the price calculation of household water can be settled according to different stages, the price subsidy for the higher water price. The use of instruction and systems will promote the citizens' action of environmental protection contribution.

Secondly, honor and award the outstanding individuals who make remarkable contribution to the environment systematically and encourage the social service organizations to give the outstanding individuals preferential treatment.

A serious of systematic regulations can be implemented in different dimensions. It has two functions—restraint and encouragement. In order to promote the citizens' action on environmental protection contribution, the action on environmental protection contribution should be encouraged. The diversified motivating mechanism should be driven to elect the outstanding individuals and outstanding organization who make remarkable contribution to environment systematically in different dimensions, to honor and award them, and special privilege should be granted to them by different social service organizations.

For example, the remarkable model households such as water saving households, electricity saving households, model households for environmental protection could be elected in the communities. These households should be praised and their experience should be shared. The outstanding units on environmental protection

contribution can be elected in different enterprises. Instead of being based on the form, this kind of election should be based on the actual contribution with a specific standard. The special privileges should be granted to the outstanding individuals and the outstanding organization by the public service organization. The policy should include two aspects, the first one is to encourage, the second one is to approve. If necessary, government should do something to support this encouragement. In the past practice of the public service management, sometimes the restrictive mechanism was only taken, not the stimulating mechanism. The only simple restriction fine can be used in punishing any individual or organizations who broke the regulations, while no encouragement was promoted. The incomplete system can't bring the satisfactory result.

Thirdly, by making full use the social idle hands, establish "harmonious environmental awareness and environmental contribution action education" according to the plan and system. Environments belong to everyone, so everyone should be responsible for building and protecting environments. Like some countries' system of all people performing military service, we can let all people or part people perform environmental service. If the condition isn't enough temporarily, we can organize all kinds of inactive labor power in society to build "environment service volunteer team for harmonious society" which performs environmental awareness education, environmental contributive activities education and some actual environment protection works in schedule through a long time. This work uses human resources of the whole society, so scientific planning, tight organizing and efficient managing are necessary to achieve the expected effect. We have no efficient organizing and managing experience, so trials can be done in several districts. And then, based on trial experience, improve system and management measures and mobilize all people to build an environment and protect the environment gradually. In Chinese, there is a proverb, its meaning is "constant dripping wears away the stone", we can believe all people's positive power will make the environment become what we expect.

Fourthly, in the long run, set up the individual environmental contribution files in the whole country and lay the foundations of further environmental management.

Environmental Protection will be the subject of long-term human society. It is time to consider the long-term environmental management. Everyone has tangible impact on the environment and everyone should make a positive contribution to the environment. From the perspective of long-term management, we can set up a national "personal environmental contribution files", the role of this file may be equal to "personal credit files". "Personal credit files" resolve the problem of the economic life, while long-term environmental management is based on "personal environmental contribution files". And we can

check everyone's effect on the environment so that long run management decisions on environmental protection can be made. "organizational environmental files" can give us a comprehensive evaluation of an organization's contribution to society, so that system restricts those organizations from the expense of the environment to make profits. Implementation of an individual (organization) environmental contribution records management means that environmental management is changing from extensive to intensive, reflecting the whole society is responsible for the environment.

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## SUMMARY

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Firstly, in China, the basis of national environmental awareness is relatively poor so that the urgent task is to raise the overall national environmental awareness .

Secondly, under the condition of the poor public's environmental awareness, people lack the ability to devote themselves to environmental contribution activities. Special agencies should be engaged in training all people to perform environmental contribution activities.

Thirdly, related organizations can evaluate the level of all people's environmental awareness on specific time in a specific region. Choosing "National Environmental Benchmarking District" to guide and improve national environmental awareness culture and environmental contributions action to a large extent.

Fourthly, at the national level, establish "National Entrepreneur Environmental Contribution Award" or "National Personal Environmental Contribution Award", and select "Outstanding Organizations of Environmental Contributions". Select "Global Personal Environment Outstanding Achievement Award", and winners will be recommended to Nobel Foundation as a candidate of "the Nobel Prize for Earth Award", to raise general environmental awareness, and promote the general environmental contribution actions.

Republic of China State Council issued "the State Council on the restriction of production and sales of notice of the use of plastic shopping bags." The masses call "plastic limitation" notice clearly stipulates: "From June 1, 2008 onwards, the nationwide ban on the production, sale and use of less than 0.025 millimeters thick plastic bags"; "Since 2008 June 1<sup>st</sup>, in all supermarkets, shopping malls, bazaars and other retail establishments to implement system of paid use of plastic shopping bags are not allowed to provide free plastic shopping bags."

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## APPENDIX

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- (a) Environmental protection is a systematic project, the need for appropriate environmental supporting system, otherwise, environmental protection measures can't really be implemented.
  
- (b) December 31<sup>st</sup>, 2007, The People's Republic of China State Council issued "the State Council on the restriction of production, sales and the use of plastic shopping bags." The masses call "plastic limitation" notice clearly stipulates: "From June 1, 2008 onwards, the nationwide ban on the production, sale and use of less than 0.025 millimeters thick plastic bags"; "Since 2008 June 1<sup>st</sup>, in all supermarkets, shopping malls, bazaars and other retail establishments to implement system of paid use of plastic shopping bags are not allowed to provide free plastic shopping bags." December 31, 2007, The People's