

**Municipal Solid Waste to the Countryside and Environmental Equity
in Urban and Rural Area**

——A study of X city in the south of Anhui Province

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Abstract: Municipal Solid Waste to the countryside increasingly becomes a common phenomenon. This thesis attempts to set forth the fact that rural resident face inequity in the process of municipal solid waste to the countryside. Municipal solid waste to the countryside affects local nature environment, economic development and social stability. In the view of sociology, then analysis the stakeholder of local government, urban and rural resident and finally rethink the phenomenon of Municipal Solid Waste to the Countryside in China.

Key Words: Environmental equity, Municipal solid waste to the countryside, Stakeholder

In the process of urbanization, municipal solid waste, as a product of urban metabolism, is the burden of urban development, and cities increasingly involve with “city besieged by waste” situation. According to statistics, the collected amount of municipal solid waste in China increased from 137 million tons to 164 million tons from 2000 to 2011. The sharp increasing of the collected amount of municipal solid waste makes solid waste disposal problem become serious, so that waste disposal is a problem to be solved urgently in course of urban development. Due to the limitations of various aspects in reality, the city does not have enough capacity to contain municipal solid waste and enough space to build the landfill, while rural land is vast and cheap. At the same time, urban residents have high requirements on the living environment when the rural president lacking the consciousness of environmental protection can not be fully aware of the negative impact of the construction of landfill and also were unable to fight. With the influence of various factors, the city will transport municipal solid waste to the countryside to stack, landfill and incinerate, and this is municipal solid waste to the countryside.

Putting in those terms, municipal solid waste to the countryside seems to be a last resort option, but secondary pollution of municipal solid waste to the countryside has brought a series of problems. Although there has been a noticeable improvement in waste treatment technology in the past decade, for example, using high density polyethylene film as a barrier material and recycling landfill gas and reusing, there will have secondary pollution which are the release of landfill gas, the leachate leaks and landscape pollution in course of landfill use and closure. Secondary

pollution do great harm to the environment despite the harm is immediate or potential. A variety of collective events occurred frequently caused by the secondary pollution all over China, such as Wanshan waste landfill pollution in Anhui province, Liulitun waste landfill event in Beijing. What makes things worse is that similar events continue to take place in Panyu of Guangdong, Guilin of Guangxi, Lu'an of Anhui and so on. Rural residents suffer from secondary pollution and pay for the city's economic development, which is an obvious environment inequity.

1. Environmental Equity and Its Classification

The concept of environmental equity comes from the outbreak of a large-scale protest in Warren County, North Carolina, United States in the 1980s, which aims to protest the construction of PCB wastes landfill near the communities where black and minority ethnic live in. This movement is now seen as the prelude to the movement of environmental equity. In 1987, the book "the only way: to fight for environmental justice" presents the outbreak in Warren. The book use the "Environmental Justice" for the first time. In 1988, the State University of New York Press published the book of John Rawls, "theory of justice". This book describes the fairness, efficiency, and safety issues in the field of the environment and explains the issue of environmental equity in theory for the first time. In 1991, the first time of National Advancement of Colored People's Environmental Leadership Summit held in Washington, more than 200 representatives officially present the 17 principles of environmental equity. In February 1994, the then U.S. President Bill Clinton issued an executive order that requires federal agencies to attach importance to environmental equity issues related to minority groups and low-income. Thus, environmental equity issue attracted widespread concern and the concept of environmental equity is worldwide and popular. In 2001, the U.S. Environmental Protection Agency defined Environmental Equity as: from the aspect of formulation, compliance and enforcement of environmental laws, regulations and policies, all people, regardless of their race, ethnicity, income, national origin and level of education, should be given a fair treatment with effective participation.

Domestic concern of scholars on the issue of environmental equity is much later. Fair problem belongs to the category of ethics, so environmental ethics was started in the 1980s and has developed very quickly until the 1990s. In the field of sociology, the main representative of environmental equity study is Professor Hong Dayong. In the thesis "Environmental Equity:

Environmental Issues Sociology viewpoint", he pointed out that environmental equity has two meanings: the first meaning refers everyone should enjoy the right to a clean environment without adversely environmental damage, the second meaning refers that the responsibility of the damage to the environment should be symmetrical with environmental obligations. In the face of environmental problems, the nature of environmental equity is how the risk of environmental hazards equitable distributes in different international, regional and groups. When this distribution is relation with national development, regional economic class, race and other social factors, environment inequity comes. Professor Hong Dayong indicated that there exists environmental equity on three levels of the international, regional and groups. Of the three levels, the regional level including urban and rural inequity and east and west equity, the inequity which is caused by municipal solid waste to the countryside can be classified as urban and rural environmental inequity.

2. Environmental Inequity in the Process of Solid Waste to the Countryside

Next, the author tried to take municipal solid waste to the countryside to Xiadu landfill in X city for example, and then elaborate the impact of municipal solid waste to the countryside and the its secondary pollution on the surrounding rural from three aspects of natural environment, economic development and social stability.

X City, in the south of Anhui province, has Xiadu landfill and Xichong landfill in Guquan. Xiadu landfill is built in 1995. At that time, municipal solid waste was nowhere to be down, then the government decided to site in Xiadu woodland in the south of the city and build landfill within a short time. Original, the landfill covered an area of 10 acres of land, but now it expands to 50 acres because of the amount of solid waste growing, which is close to overload state. And the main approach to dispose municipal solid waste is simply buried. The latter, the Xichong landfill is a new, harmless and sanitary landfill, sanitary landfill, which has specialized leachate treatment pond and landfill gas control equipment. The impervious treatment uses high-density polyethylene film as a lining materials and synthetic lining layer, then the clay layer. The municipal solid waste in X city is main transported to Xiadu landfill, where municipal solid waste is just simple stacked without any protective measures against leakage and leachate collection. Then the leakage directly enters to underground and surface runoff. The landfill gas directly scatters into the atmosphere in

the lack of recycling or control.

(a) Municipal solid waste to the countryside has a direct impact on rural natural environment. Solid waste is stacked and accumulated with no harmless treatment. This waste effects local water, soil, air and public health with the destruction of the original walls that can against leakage and leachate collection

Firstly, water pollution caused great harm to the health of domestic water of the surrounding villagers. Even if the waste is in a timely manner, there still would produce large amounts of harmful liquid. Especially on a rainy day, a large number of hazardous liquids with the rain four overspill. However, solid waste is simple stacked in waste zone and commonly untreated. Large amounts of toxic and hazardous substances with the infiltration of rain water flow into the ground or alluvial surface runoff, causing water pollution. The river and pond near landfill is brown, multi floating white foam on the surface. Local residents now already can not use the original source of drinking water.

Secondly, toxic and hazardous substances in the soil may be absorbed by the growth of crops, so the local residents who purchase of the consumption of these crops may suffer from health threats. On one hand, solid waste piled up, causing groundwater pollution then resulting in the decline in the fertility of the land. On the other hand, part of the wastewater through surface runoff directly causes fields pollution. Landfill often sited in the valley and woodland nearby also suffered some damage due to construction and the need for waste dump. There exists soil erosion phenomenon too.

Thirdly, landfill gas generates a lot of negative impact on health of farmers nearby. Accumulation of solid waste and chemical reactions that produce large amounts of odor, make the area near the landfill share strong acid odor. According to local residents, this gas has torture them for decades, and odor is constant throughout the year. Especially the summer wind direction, odor particularly strong, so that many rural residents did not open the doors and windows frequently.

(b) Municipal solid waste to the countryside affects the local rural economic development. On one hand, the waste pollution has a negative influence on agricultural environment, and it is difficulty for local people to develop agriculture. Xaidu lanfill located at the top valley of XiaDu woodland and Xiangchong, Banqiao, Panjia and Jiangjia villages located in the forest foothills. Landfill leachate sewage down the valley to flow directly into the nearby agricultural land, such as

woodland, farmland, ponds and so on, which leads to environmental factors, water and land, are polluted. Not high Original profit of agricultural production and the destruction of the production environment of the region, make the development of region's agricultural production difficulty.

On the other hand, the presence of landfill is not conducive to economic development, hindering the local investment, widening the gap with the surrounding area. Xiadu village is only 8 kilometers away from the city, and located in the national highway traffic online with convenient transportation and obvious advantages. However, due to the presence of the municipal solid waste landfill, majority of investors came to inspect the investment environment and shelved investment plans. Investment can not be achieved and the other advantage of the surrounding areas can not be effectively realized. All of these is not conducive to the increase of jobs for local residents. Their living standards improve slowly, widening the gap with neighboring villagers. The landfill has become one of the major constraints of the development of Xiadu and the surrounding area. According to the village, the development of the surrounding areas in Xiadu village boom continues to heat up in recent years. There also had a number of companies want to site the plant in this. They beat a retreat and cannot accept to build factory near landfill.

(c) Municipal solid waste to the countryside affects social stability in rural areas. First and foremost, it weakens the region's sense of identity. When overlook from the village to a distance, a waste mountain stands in front which seriously affect the perception of the region. At the same time, there is a deviation of the region identity. The surrounding villages are dubbed the “garbage village” due to the existence of the landfill. Also, there exists discrimination when marry with others outside the village. All of these phenomena make “garbage village” divided from other villages and exist apparent identity of the estrangement.

Then, municipal solid waste to the countryside brings harm to the relatively weak rural residents group, which easily aroused dissatisfaction and social conflict. The Xiadu landfill has been ran for 15 years, and there are more problems on the management of waste disposal and field area from the beginning. Simple Waste disposal methods and poor oversight bring serious impact on local residents, having effect on their life. Rural residents try to appeal to the higher authorities at all levels for help several times and this problem had to be left unresolved. Later, rural residents intercept waste transport vehicle, break out mass brawl and have conflicts with Environmental Protection Agency, which becomes one of the important factors that endangers the stability of

local society.

Despite the current lack of domestic exact statistical data and materials, it is difficult to use objective data to describe differences between urban and rural residents exposed to environmental pollution. But, it clearly shows that rural residents face environmental inequity issues have been quite prominent with experience survey above. In China, city is the top priority of economic development, and that even if there is enough land, there will not be built in the city landfill. The rural area has a lot of spare land with less development. Then municipal solid waste comes and the rural becomes a city waste dump, to pay for the economic development of the city. All solid waste in city after simple classification transported to rural area. It inevitably damage the interests of the rural residents and deprive them enjoy the same clean environment and their equal rights to the use of clean resources.

3. The Stakeholder Analysis in the View of Sociology

In the process of municipal solid waste to the countryside, natural scientists and technologists tend to relieve the fact of improper disposal from the view of landfill technology and power generation, while sociologists are more focused on the phenomenon of the people behind the action.

Stakeholders refer to the actual participation in the process of interest relations, who have the power to directly or indirectly affect individual and group. Different stakeholders have different value orientation, seek to maximize their interests and cooperative game between strong and stakeholders. So their attitudes and behavior, to a great extent, influence the development of related activities. In the disposal of city 1 municipal solid waste, three stakeholders of local government, urban residents and rural residents have different behavior and attitude, and "municipal solid waste to the countryside" is the result of game among local government, urban residents and rural residents.

(a) Local government those benefit balance

Local government ,which is to organize and coordinate the identity of the, rather than the mere stakeholders, should fully play the role of organization, management, guidance, supervision and service in order to play the two "character" of the country's public administrative power management and urban public product manager.

The government considers improving the quality of urban environment and cleaning the urban landscape in determining the direction of waste disposal. Urban area is the place of the name card and the top priority of economic development, where cannot build a landfill even if there is enough land in the city. Rural areas have a large number of idle lands and become dumps, paying for the city's economic development. Government occupies resources, power and higher status, which has certain authority structure of the elite force coordination complexes and dominator. And it tends to solve problems from their own position and angle, so the policy makers for urban resident and mostly ignore the interests of rural residents. After the simple classification in city transfer station, waste directly ship to the countryside. That inevitably harms the interests of farmers and stripped them the equal right to enjoy the same clean environment and use of clean resources.

Rural residents suffer the disadvantages of this arrangement for a long time. Due to the high homogeneity of rural society, it is easy to form interest groups for the benefit of the specific requirements and common goals, even make the conflict into the open, breaking out reality or the reality conflicts. They seek to equal distribution interests or just to vent grievances against the government. In our investigation the villagers near the landfill have organized many times against junk from city.

In the face of such a growing collective events, Chinese environmental protection organizations are clearly powerless. So the government has to do some work or some relief, such as solving xin's water problems and giving out aerosol, etc. The government also play a role of keeping people rioted and plead for the people. However, such a dual role will be a little embarrassed more or less.

(b) Urban residents: direct beneficiaries

Urban residents, as the source of urban waste maker, their behavior have effects on waste disposal. It can't completely inhibit the generation of waste in dairy life, but we can less use of non-renewable resources and use less packaging to reduce the discharge of waste. Urban families carrying waste sorting can also promote the scientification of waste disposal and reduce pollution. The environmental awareness of urban residents has t vital importance.

In the survey, we found that ordinary citizens are seldom concerned about how to be processed about the waste, buried, burned, or reuse. Most of the citizens are not aware of this phenomenon

of waste to the countryside; the waste classification has not seriously brought enough attention, although most residents think that phenomenon is unfair. Rural residents are generally accepted that garbage disposal is a government job And the low level of understanding of the public utilities and participation, seriously limits the actual situation to improve.

Picture1:the comparison of stakeholder(MSW: Municipal Solid Waste to the Countryside)

	The benefit after MSW	The damaged after MSW	The comparison
Local government those benefits balance	Disposal accumulation of large numbers of city waste, environmental improvement to obtain excellent production and living environment. Improve the satisfaction of the government, for urban residents to live and work in peace and contentment, more conducive to local investment promotion and capital introduction, driving the development of local economy.	Resettlement of land-lost farmers and demolition , economic subsidies for surrounding villages	Beneficiary
Urban residents—Direct beneficiaries	A good living environment, neat appearance, the improvement of quality of life.	The cost of waste disposal is growing	Beneficiary
Rural residents—most of the weak	The surrounding villagers get weak economic compensation and employment opportunities.	Part of land-lost farmers rely on land life have no source of income, living without protection. Rupture of social relation network is to be demolished. Surrounding villages suffered by the danger of waste to the countryside: the poor air quality, reduction of contaminated farmland crops, half-assed investment project.	Victim

(c) Rural residents: most of the weak

Rural residents, as the direct victims of waste to the countryside, they deeply dislike landfills, but several struggle with the environment protection agency and environmental sanitation place have failed, which forced them to keep silence. Survival is first, they should be for food and clothing. In the face of professional barriers, they could do nothing. Their education level and the relatively weak legal rights consciousness, both make them fragmented, and cannot be

accumulated by nongovernmental organization. As the interests of victims, they often lack the consciousness of the save for a rainy day, they just resistant when their own vital interests are violated. They have no actual rights and resources of disadvantaged position in society, and the result is nothing. They cover the whole society in a weak position in preface-structure. They don't have the resources. They do not have enough time and energy to engage in a lawsuit, fight, and bear the brunt of fighting unknown risks. In the end, they can only compromise, to adapt to the changing environment only by changing its own way of life.

According to the survey, villagers, around the landfill of Xiadu landfill and Guquan landfill, have weak consciousness of environmental protection. They have no long-term perspective to foresee the harm and are not to take any measures. Till dozens of years later, the problems gradually exposed to the very serious degree and they slowly aware the seriousness of the landfill. They take some violence to stop waste truck outside the landfill and so on, but it has not been solved effectively.

4. The Thinking

Limited to the reality, municipal solid waste to the countryside is objectively inevitable and environmental inequity between urban and rural is objectivity of its existence. Promoting the concept of environmental equity is a green thought, which is also constrained by objective reality situation. To look at this problem, we have to admit that the pressure of waste disposal technology constraints and the large number of municipal solid waste generated, so municipal solid waste to the countryside is in the demand of realistic. However, we should also see the irrationality and inequity of this phenomenon. What's more, this equity will sharp social contradictions without being effectively addressed in the development of the city.

If the event in X city is just the individual phenomenon, it doesn't mean anything, but the current situation is far from being so. From Beihai Guangxi Province, Nanjing, Lu'an, Guilin to Guanyang, there is a common phenomenon of the series of waste disposal problem, that is, the contaminated area is the integration of a rural or suburban, rather than the city where waste produces. The distribution differences pose that the gap and opposition between rural and urban areas, which has not only the disorder of relationship between man and nature, but the disorder of human relations between different groups and different regions of. The disorder is advantageous to

the city and not conducive to the rural.

In the face of waste disposal, many cities really don't have enough land to landfill so much waste. But the disposal method of municipal solid waste to the countryside is not proper. Why the processing of the waste to the countryside give rise to so much problems? Is the immature technology or administrative omission? Why does nothing happen when the farmers reflect to the government after waste pollution?

When we mentioned municipal solid waste to the countryside, it is a factual judgment. The harm with municipal solid waste to the countryside is a clear value judgment and the outstanding performance of environmental inequity. On one hand, this environmental inequity between urban and rural areas in the level of environmental protection is related to the structure of center-margin for a long time. Such as environmental legislation, it is mostly in connection with urban environmental issues. That is to say, law-making takes the city as center and failed to create a more complete legal framework for rural environmental protection. At the same time, all laws of environmental protection are only the related system requirements, and there is a lack of specific legal system and operable application process. On the other hand, limited to some factors in reality, such as the technical level, the economic development and gap between urban and rural areas, the environmental inequity will exist in a certain period of time. But, it does not means that these factors are the necessary condition of the harm with municipal solid waste to the countryside. In the survey, the author found that the harm is more response from the human factors, such as management confusion, the unclear responsibility, neglect of the public and so on..

Waste disposal is complex as other social problems, which is one of the affairs involved in many links and different participants. In that case, we can't regard the issue of waste disposal as independent of other social problems and it is just a part of the social problems in comprehensive view. In the process of solving the problem of waste disposal, it must be based on the understanding of the whole society to solve the problem and the whole society concerted efforts to promote the solution of the problem.

Reference

[1] Hong Dayong. Environmental Equity: the Sociology Perspective of Environmental Problem. Academic Journal of Zhejiang, 2001

- [2] Hong Dayong. Review on Theories and Methods of Environmental Justice Study. Journal of Renmin University of China, 2008
- [3] Xie Yufeng, Ma Xiaoming. A Summary of the Studies on Current Situation of Environmental Equity in China. Ecological Environment, 2007
- [4] Li Shuwen,, On Environmental Equity. Academic Exchange, 2006
- [5] Huang Li, the Environmental Justice in the construction of the new socialist countryside. Journal of Anhui University, 2008
- [6] Li Peichao, Wang Chao. On Environmental Justice. Journal of Jishou University, 2005
- [7] Cai Shouqiu. Environmental Fairness and Environmental Democracy-the Third Comment on the Basic Idea oof Legal Science of Environment and Resource Law. Journal of Hohai University, 2005
- [8] Wen Tongai, Li Yinquan. On Environmental Equity, Environmental Efficiency and Sustainable Development. China Population, Resources and Environment, 2003
- [9] Jin Yueshan. Efficiency and Equity in Environment Pollution. 1997
- [10] John Hannigan. *Environmental Sociology*. Beijing:China Renmin University Press, 2009
- [11] Chen Ajiang. *Secondary anxiety: the social interpretation of water pollution in Taihu River Basin*. Beijing: China Social Sciences Press, 2009