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# **Environmental Governance: Urban Waste Management Model**

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#### **Abstract**

Waste management that is not good will also have a negative impact on the environment, public health, and this certainly has wider implications such as environmental pollution. This article outlines environmental governance in the waste management process and a model of good urban waste management. Environmental governance is important in understanding the issue of waste management which is a complex environmental issue in urban areas. A good model for waste management is with the unit paying attention to sewage, leachate water treatment, and combustion of methane / flare gas access. The model described as integrated management is widely applied in big cities. The integrated waste management process is carried out by implementing preventive measures and reuse efforts with the aim that the waste does not form.

#### Introduction

Environmental governance is the suitability of needs and mutual agreements between social systems and environmental ecosystems, and therefore social management systems are maintained by promoting ecological values and climate change that can be maintained through supervision of a guaranteed social environment system and collaborating well (Hahn & Pinkse, 2014; Bodin, 2017).

In order to face environmental challenges on earth, there is a need to educate and inform the public about environmental problems. One of the commitments of the community and international governments in protecting the earth from pollution and damage is through the implementation of Environmental Management.

Environmental governance is important in understanding the issue of waste management which is a complex environmental issue in urban areas, because it is also influenced by the low participation of the community in efforts to maintain environmental cleanliness and the reluctance of the community to pay for cleanliness retribution, this is also driven by unsatisfactory services provided by the cleaning service (Seppälä, 2002). In managing waste the role of the sanitation department is very prominent so that it does not open up opportunities for the community to process waste.

Linkages between Thailand's waste management and other sectors, because if the waste management is not good, it will have an adverse effect on the environment, public health, and this certainly has wider implications such as low degrees of public health, environmental pollution, and low index of human quality of life . Waste management has involved elements of government, social institutions and the community so that waste problems can be controlled

(Kungskulniti et al., 1991; Kofoworola & Gheewala, 2009). Waste management is considered good if the garbage is not a breeding ground for disease germs and does not become an intermediary for spreading disease. Other requirements that must be met in waste management are not to pollute air, water or soil, do not cause odors, and do not cause fire and so forth. The most important environmental pollution in big cities is pollution by domestic waste so that the response must receive top priority. In stating the amount of waste in general, it is determined by the life habits of the people in the season, the standard of living, the diversity of the community, and how to manage waste.

Building without damaging the environment and at the same time preserving the environment requires an appropriate environmental management policy and strategy and an environmentally sound development concept, so that development can be sustainable. This article outlines environmental governance in the waste management process and a model of good urban waste management.

#### Waste management process

The integrated waste management process is carried out by implementing efforts to reduce and reuse with the aim that the waste does not form. The effort was carried out at the lowest level, namely on the use of goods, and the process of recycling waste was carried out very simply. After being chopped and melted, the material is printed into ready to use material. The method for destroying and utilizing rubbish is carried out in several ways including: throwing it in a hole and covering it with a layer of soil, which is done layer by layer, so that the garbage is not in an open space; rubbish dumped into pits without being piled up with soil; open and dispose of rubbish above ground level; dispose of garbage in waters, for example in rivers or at sea; large-scale incineration of garbage and covered by using incinerators, incineration of waste by incinerators carried out by individuals in the household; vegetable waste is processed for animal feed; management of organic waste into fertilizer that is useful for fertilizing the soil; mashed garbage then thrown into the water channel; recycle waste by reusing items that can still be used; reduction, destroying waste into small pieces and the results are utilized. Garbage collection is a variety of ways and efforts to manage waste so that the environment becomes clean, healthy and comfortable. Waste management at the final disposal site consists of opening up the disposal of rubbish on the surface, disposing of waste into pits without being piled up with layers of soil, incinerators, composting and new technologies to reuse, reduce and recycle. Community participation in terms of waste management must consider the availability of rubbish bins at home, availability.

## **Urban Waste Management Model**

There are two types of waste management models: soil removal and piles. The first model is the simplest method, ie the garbage is dumped in a valley or basin without giving treatment. This removal of land or model of flue and go can be done in the right location, that is, if there is no settlement below, does not cause air pollution, pollution on river water, landslides, or a decrease in environmental aesthetics. Land removal is a common waste management model for a city where the volume of waste is not so large. The second waste management is stack (Pichtel, 2005; Chandrappa & Das, 2012). The model is implemented in full, the same as aerobic technology. The model is equipped with a sewerage unit, waste water treatment, and combustion of methane / flare gas access. This model is widely applied in big cities. But in reality in the field the pile model is generally incomplete, depending on the financial conditions and local government officials' concern for environmental and community health. To see the relationship between waste management and other sectors, especially if we look at the perspective of city planning, it can be seen in the following chart:

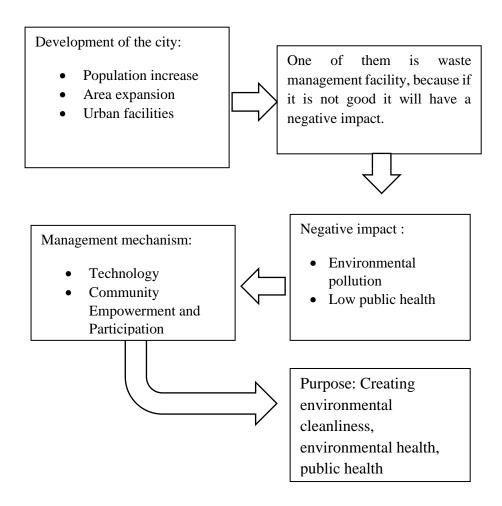


Figure 1. Environmental Governance as a Model for Urban Waste Management

This waste management activity must receive the full support of the community, because without the support/participation of the community this will be difficult to run as expected, namely creating environmental health, and public health.

Economic conditions, this activity is closely related to economic conditions, because large funds are needed to improve the quality of services in this field, and this sector will also be an opportunity to increase Regional Revenue if management is good and will be able to absorb workers such as scavengers, shanties and etcetera.

# **System**

Integrated Solid Waste management is defined as the selection and application of technology and management programs to achieve a high system, with the following hierarchy: Source Reduction, which is the minimalist process of waste at source in terms of the quantity of generation and quality of waste generation, especially the reduction of hazardous waste; Recycling, which is a recycling process that serves to reduce resource requirements and reduce the quantity of waste to the final place of waste; Waste Transformation, which is the process of physical, chemical and biological change in waste. Where the three components will determine: Changes in the level of efficiency needed in the management system; The need to reduce, reuse, and recycle waste; Processes that can produce other useful goods such as composting; Landfilling, as the end of a waste management that cannot be reused (Bagchi, 2004).

Garbage does not only damage the environment, but also disturbs public health. Pollution that can be through air, water, soil, or contact with other organisms can cause disease. Organic waste that is not managed, in addition to causing unpleasant odors and disturbing the aesthetics, is also a medium for vector and rodent breeding. The direct impact decreases the quality of the environment. This can have an effect on biota and human health in the use of technology on the grounds that it is more environmentally friendly, zero waste, because there is no direct combustion process, but the result of methane gas which is directly used as fuel to produce electricity. Scavenger communities save the potential for social capital that is always used to bring economic benefits and social benefits. However, one dimension that might be forgotten is the policy dimension. The role of government becomes very important in the context of the policy dimension.

The government must prioritize the empowerment of waste pickers through bottom up policy schemes. In this policy, the community is placed not only as a policy target, but also as a policy subject.

This waste management policy needs to be considered well, because if this problem does not get serious attention it will develop because the amount of waste continues to increase along with the rapid population growth in this city, which brings to the implications of other problems, such as environmental pollution, flooding and most importantly is public health itself.

The government must work to eradicate social exclusion, which is a condition for weakening capacity in various aspects of life faced by scavengers. Excluded, meaning that scavengers have limited access, participation and freedom in terms of services, rights and basic living needs. Natural resources and the quality of the environment which have been eroded since the beginning of the decentralization era are evidence of the complexity of this situation. Building without damaging the environment and at the same time preserving the environment requires an appropriate environmental management policy and strategy and an environmentally sound development concept, so that development can be sustainable.

the quantity and quality of waste is strongly influenced by various activities and living standards of the community. Some important factors that influence the production of waste, namely: The number of residents the more the number of residents, the more waste production, this is driven by the rate of population growth; Socio-economic conditions, the higher the socio-economic community, the more waste produced which is usually rubbish cannot rot and this depends on the available material, applicable regulations as well as public awareness; Technological advances, technological advances will increase the amount and quality of waste due to the increasingly diverse use of raw materials, packaging methods and increasingly diverse manufacturing products.

Responsibility in management is needed as a principle of Good Environmental governance into the provisions related to environmental management, starting from the coordination of planning, utilization, supervision, to the provisions on resource control. It is also needed globally about transparency and accountability in waste management (Pellizzoni, 2004; Clapp, 2005).

### **Conclusion**

Environmental governance is important in understanding the issue of waste management which is a complex environmental issue in urban areas. The government needs to issue proenvironment programs, while the private sector also needs to be aware of the importance of sustainable use of natural resources. Land removal is a common waste management model for a city where the volume of waste is not so large. The second waste management is stack. The model is implemented in full, the same as aerobic technology. In this model, it is equipped with

a sewerage unit, wastewater treatment, and combustion of methane / flare gas access. This model is widely applied in big cities. Building without damaging the environment and at the same time preserving the environment requires an appropriate environmental management policy and strategy and an environmentally sound development concept, so that development can be sustainable this can be realized from the Integrated Solid Waste management system.

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