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Public Policy and Sustainability: A Public Policy on Waste Management

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Abstract
According to the United Nations Human Settlements Programme, solid waste management is one of the indicators used to assess the quality of life. Many countries have formulated a policy on solid waste management. This is because solid waste management has become very crucial in the development of countries due to the increased pollution through the solid waste. Countries perform well in the solid waste management are seen to be serious in their sustainability efforts. This article reviews public policy in relation to solid waste management.
Keywords: Public policy, Solid waste management, sustainability

Introduction

Human-produced waste is a major environmental concern globally. Many communities worldwide overuse various waste management practices such as increased recycling, disposal such as landfilling, incineration, and treatment (Nelson, 2008). This study is aimed at examining public policy and sustainability as it relates to waste management. Zero waste theory as it relates to sustainability has been analysed in this paper. The article explores the concept of sustainability through a study of a small city in Ontario, Canada, whose landfill is closed and waste diversion options saturated. The city faces unsustainable costs of shipping its waste to the United States and other regions (UN-Habitat, 2010). The city's officials are undertaking an assessment to determine cost-benefit development of a new landfill or implementation of other waste management facility.

The Role of Government in Waste Management

The government has a responsibility to undertake policy procedures that protect its citizens from the dangers of pollution of the environment. This reasoning has been the basis for past and present regulatory schemes from banning some waste disposal techniques to implementation of sustainable waste management techniques. Environmental pollution due to human activity is a major concern to millions of informed citizens. The U.S. government and scientific community have acknowledged the threats posed by pollution of the environment (U.S. EPA, 2013). The specific effects of ecological pollution on human health and safety are numerous including food access, housing, and changes in disease transmissions patterns. The worldwide scale of the pollution issue complicates protecting public health and safety against the dangers of global climate change (U.S. EPA, 2013).

In the past 20 years, the U.S. government has begun to put forth regulations addressing the issue of waste management. Based on that effort by the government, a significant progress has been experienced in relation to waste and resource management in United States. Composting of household waste and recycling has increased to 43%; business recycling rates has increased to 52% while waste generated by businesses has declined by 29%. Waste going to landfill has also declined by nearly half over the past 15 years (U.S. Environmental Protection Agency, [U.S. EPA], 2013).

Waste management techniques and approaches have changed dramatically over the last twenty years across the globe. Globalization has particularly influenced new attitudes towards waste management. Over the past two decades, a major decrease in waste being disposed to landfill has been witnessed and instead an increase in recycling has been seen. In England for example a proposed Waste Management Plan was published in March 2012 for public consultation by the Department for Environment, Food & Rural Affairs. The proposal aims at setting out government's efforts towards a zero waste economy to mark a transition towards a sustainable economy (Defra, 2012).

Solid Waste Management Practices

Widely used solid waste management practices pose serious concern from the public health perspective. The safety and acceptability of such waste management practices raises major concerns that stems from both distrust of public policies and proposed solutions by all tiers of government for the solid waste management and a perception that many facilities use poor operating procedures. Waste management practice currently encompassing disposal, recycling, treatment, segregation and modification has been developing over the past 150 years

(Nelson, 2008). Historically, producers of all wastes handled the waste by themselves and disposing them using simple disposal methods. Some of the methods used include terrestrial dumping, dumping into

surface water both fresh and marine waters and burning.

With the ever-increasing industrialization and globalization, the dumping of solid waste, especially in landfills is still a prominent means of waste disposal. Major developments have taken place in relation to landfill technology and in the legislative control of the waste management policies that control disposal by landfilling. However, even with these waste management policies, many landfills still remain primitive in their operations. Incineration and heat recovery or waste gas cleaning and accelerated composting are alternative treatment technologies for solid waste management. However, these technologies are also subject to criticism either by environmentalists due to the possible hazardous emissions, inability to eliminate pathogenic agents or failure to immobilize heavy metals. While key questions concerning the effects of the various practices on public health and environmental safety remain unanswered (Department for Environment, Food & Rural Affairs, 2012).

Waste management includes three basic categories of activities namely disposal, treatment and recycling. Facilities have in the past disposed waste on land whereby they place the waste on landfills or similarly by injecting it into deep underground wells. Treatment involves use of chemical processes that varies based on the kind of waste. An example of waste can be rendered inert by treatment through a process referred as vitrification. This is a process that converts waste to a glass-like substance. Many treatments allow the need to dispose residuals later as they most likely results to less waste toxic or less mobile products in comparison to the pre-treated substance. Facilities also avoid disposal by re-use of organic waste as fuel or by recycling hazardous waste especially those that contains spent solvents and metals (U.S. Environmental Protection Agency, 2013).

Hazardous waste management has an effect on the environment in several ways. Disposal of hazardous waste on land may contaminate groundwater. This happens when liquids such as rainwater carry the hazardous substances into underground aquifers. However, this process that allows such hazardous substances to migrate into the groundwater and the behaviour of contaminated water is a complicated process by which scientists are still learning about those conditions. Contamination of groundwater can affect human health when groundwater is extracted for drinking or irrigation. Some groundwater also flows into surface waters such as wetlands and streams thereby causing ecological damage (Nelson, 2008).

Waste management policies are thus pivotal in groundwater protection. Land disposal on the other hand affects soil and surface water such as streams and lakes. Landfills where the hazardous waste are disposed also releases air pollutants thereby causing problems to air quality. Treatment also has harmful effects where like land disposal it gives rise to harmful air emissions (UN-Habitat, 2010).

Background of Waste Management Practices

The system of collecting materials no longer useful, setting them at the curb and whisking them away to be managed has been in place since the late 1800s. This process has not changed much not only in the developing countries but in the developed world as well.

Solid waste is collected and dumped in a pit then buried or burned. Landfilling remains the most widespread treatment method of solid waste followed by incineration. Environmental concerns have been on the rise within the United States, regarding the excessive production of garbage and related resource sustainability. Between 1920 and 1970 accumulation of weekly waste that are set at curb grew 5 times faster than the population. The concerns of the alarming excess garbage production and accumulation reached a tipping end when the Mobro garbage barge left New York in 1987(Nelson, 2008). Curbside material recycling program was introduced as the solution to the garbage crisis many municipalities in around the world adopted it within the next coming decades. Today, with a world population that is almost 7 billion ten million metric tons of waste are produced every day. The impact of waste disposal and how to manage it have raised serious questions once again. 'Zero waste' goals have been proposed as the ultimate solution and adopted by many communities in New Zealand, the United Kingdom, Japan, North America and beyond (UN-Habitat, 2010).

While the term zero waste is used widely used and applauded as a positive, yet near impossible goal, no conclusive definition of the term exists. A close examination of the concept presents significant and opposing differences between interpretations of theory and practice. This means that practical implementation of the concept of zero waste has little relation to the basic elements of zero waste theory. This serves more in the reinforcement of a status quo as far as sustainable waste management is concerned and instead of working towards waste elimination, it facilitates the 'throw-away society'(Wijen, Zoeteman & Pieters, 2005).

Public Policy and Sustainability

Any human effort towards development is associated with a negative environmental impact. To address the environmental problems and tackle the growing public concern about environmental issues, governments, with rhetoric and material support from different multilateral institutions such as the World Bank and the United Nations, advocate policy measures and initiatives directing at the conservation and greening of development. Sustainable development is defined as the ability of a given generation to satisfy its needs without necessarily endangering the needs of the future generations and harming their capacity of satisfying their own. Sustainable

development is now associated with a number of normative principles that revolve around environmental management mechanisms and international law (Nelson, 2008). In order to realize sustainability, different researchers and educationists have revealed that development procedures should adopt new governance practices and interventions. It is about the transformation of long term aspects of the industrial systems of the present economic systems. Promoting global sustainability is all about constructing new paradigms for development that lie within the defined limits of our planet's ecology.

A policy management system is pivotal for a timely provision of waste facilities needed in meeting the local and national waste needs and to have an effective waste management system. Sustainability must be a mandatory mission of public policy in its decision-making process. For example, Utah decision of instituting a mandatory four-day work week for most of its state employees, allows saving of money, energy and resources while at the allowing government entities to render adequate citizen services. Although that decision has the challenge of costing some people their jobs, notwithstanding, with the current stage of crisis, savings in emissions and energy supersedes the challenge (UN-Habitat, 2010).

With the current serious concern of the adverse impacts on the population and the environment by the widely used solid waste management practices, managers must commit themselves to ensuring that the activities of their organizations whether in research, production or otherwise are acceptable and sustainable. Example of a policy that complies with requirements for an environmental management system adheres to elements such as;

- Minimizing waste through energy and water usage.
- Minimizing solid and e-waste through reduction, recycling and re-use.
- Prevention or minimizing adverse environmental impact that comes from biological, manufacturing wastes, hazardous liquid waste and other hazardous wastes.
- Promoting activities that are geared towards enhancement of the environment
- Minimization of chemical emissions and spillage in an ambient environment
- Complying and wherever possible exceeding environmental legislations and other legal requirement
- Embedding continual improvement through auditing and review of environmental performance
- Creation of awareness on relevant environmental issues among communities and stakeholders (UN-Habitat, 2010).

ISO 14001 is a voluntary international standard that establishes the requirements for organizations to develop their Environmental policy. Environmental policies for ISO certified organizations and companies establishes the foundation from which such organizations build their environmental management system (EMS). The Environmental policy establishes the foundation for an organization to build its EMS. The following requirements apply:

- Top management shall define the policy
- The policy must be relevant to the activities, products, and services of the organization
- The policy must show commitment to continual improvement of the EMS and prevention of pollution
- The policy must be documented, communicated to all employees and available to the public (Nelson, 2008).

Through environmental sociology, sustainable development can be easily realized since it entails studying the community in the biggest sense possible. The resultant development agendas will address the issues of biodiversity including animals, human beings, water, land, and even air since they are all interrelated. The social constitution of our human daily life and how we live in the society calls for a greater concern to address environmental issues. The most appropriate measures need to be considered and adopted so that the best actions can work out towards a sustainable world. We need to consider and take the environment as an immediate and social aspect of our lives. This will help us come up with conservation measures and realize sustainable development (Nelson, 2008).

Concept of Environmentalism

Environmentalism refers to a social movement that seeks to protect the natural environment from pollution or damage. This social movement endeavours to recruit and induce all categories of people including the global poor to join in the conservation of the environment. Environmentalists by activism have induced political process to set up policies that ensures conservation and improvement of the environment (Wijen, et al., 2005). Such policies govern both the elite and the poor. Environmentalism is therefore not only a concern of the elite but also a concern of the global poor. This is a good example of sustainability that business people should also adopt. Individual agency policy decisions should be structured in such a way that they offer an immediate impact. They should then be communicated by the heads of departments to all employees. This is a convenient manner of incorporating sustainability into government practices (UN-Habitat, 2010).

Zero Waste Theory

The first official use of the term Zero Waste was by Paul Palmer in 1973 and he has continued to expand his work on zero waste since then through writing such as in his book *Getting to Zero Waste* published in 2004. Palmer also is the director of the Zero Waste Institute. Other perspectives on the concept of zero waste have been explored by Grassroots Recycling Network, Eco-Cycle, Zero Waste Alliance, Urban Ore, and individuals such as Gary Liss and Paul Connett. At its core, zero waste is a fundamental design principle that maximizes efficiency and prevents waste. The concept also at its foundation involves addressing resource sustainability and other environmental damages that are related to waste such as climate change and pollution (Palmer, 2004).

Zero Waste Theory Principles:

1. Waste is anything unusable, unwanted and unrecyclable
2. Zero waste is a visionary goal
3. Waste must be avoided, not reduced or minimized
4. Waste is evidence of poor design
5. Utilize the precautionary principle to eliminate potential toxins
6. Adhere to the principle of highest and best use
7. Recognize and address institutional and ideological barriers (UN-Habitat, 2010)

Based on the above principles, genuine achievement of zero waste, therefore, refers to absolute elimination of production of anything that is unusable, unwanted and unrecyclable. Life cycle analysis, cradle-to-cradle design and closed-loop recycling are important tools for achievement of zero waste success. However, the zero waste theory recognizes that specific ideological and institutional barriers must be overcome for the theory to be a success (Palmer, 2004).

Green Marketing

Another sustainable waste management approach involves encouraging the implementation of green marketing by manufacturers and marketers. Green marketing means that the marketers must consider the quality of the product they create to be eco-friendly (Ginsberg & Bloom, 2008). Green, eco-marketing or environmental are part of the new emerging marketing approach which seeks to challenge those marketing approaches that are presumed to environmentally unsafe besides providing safe approaches of marketing. Green marketing is therefore an important element of marketing because it cares for the environment especially in this time when global warming is increasingly being felt (Wijen, et al., 2005).

Implementing green marketing is however a challenging task for any business because they first need to understand the sure steps that lead to green marketing. When conducting green marketing campaign, marketers are required to act honesty and sincerity in providing quality products that are environmental friendly (Ottman, 2011). This is costly and many companies are not honest about their green marketing campaign. Many companies that use honest green marketing by their products use it as a way of standing out from among their competitors. Many companies presume to be positioning their products as environmentally friendly dishonestly to gain a competitive advantage in a crowded arena of competitors. This paper looks at how marketers are misusing the word green for their personal benefit and therefore selling their soul for the sake of money (Rae, 2009).

Connections between Globalization and Environment

There exists a close connection between the environment and globalization that is critical to both domains. It is important to note that while globalization is the environment extrinsically global, the environment is inherently global. The environment is characterized with ecosystems that cross national boundaries. Environmental issues such as air pollution also spread across entire continents as is the atmosphere that provides climate protection from harsh UV rays (Wijen, et al., 2005). To monitor and respond to the environmental issues that affect countries globally, aggravate a need for coordinated regional or global governance.

In addition, the environment is essentially connected to global economic development. This is because it provides natural resources that fuel industrial and economic growth globally. The environment also provides ecosystem services that support both livelihoods and life. Indeed, one author has been noted as having suggested that the economy can be seen as a fully-owned subsidiary of ecosystem (Wijen, et al. 2005). The importance of the link between globalization and the environment is thus obvious and our understanding how these two dynamics interact is vital. Much literature that provides information on how the twin dynamics interact is vague and weak as it largely discusses the generalities and focuses disproportionately on trade-related connections.

Globalization has a direct impact on the environment on one hand while the environment impacts the direction, pace and quality of globalization. This is so because as noted in this paper, the environmental resources fuel the economic globalization. Our social and governance mainly the policy responses by countries to environmental challenges globally also impacts the pace and degree by which globalization happens. For example, the governance structures are established to constellate stakeholders' interests that construct key

strategic responses. As hinted, the environment and globalization is intrinsically connected and deeply joined together that it becomes so difficult to address the global environmental challenges without understanding and harnessing the globalization dynamics that influence them (Wijen, et al. 2005). In the same token, those who capitalize on globalization opportunities are unable to do so unless they understand and address how to tackle the great environmental challenges that comes with globalization.

The promise of economic opportunity is what the dominant discourse of globalization promises. On the other hand, a global discourse on environmental responsibility exists that must be taken into consideration. A finer connection needs to be developed that addresses the global opportunities provided by globalization while fulfilling advancing equity and global ecological responsibilities. Such an understanding would make environmental preservation and sustainable development a fundamental goal of globalization, rather than the victim of globalization.

Globalization and Environmental Policy Management

Rapid economic growth has been characterized by severe environmental degradation, as a result of economic development that requires more raw-materials so as to meet the industries and market needs. People have been dazzled by the immediate globalization benefits, but serious environmental problems have been neglected which actually results from repaid economic developments. Land resources are gradually shrinking as a result of the rapid industrial development and cities expansion globally. Global activities such as over grazing strip mining and tree cutting leads to spreading of deserts (UN-Habitat, 2010).

Industrial development has led to increased pollution of air and water supplies by poisonous gasses and waste products (Nelson, 2008). This problem is not only faced by the developed countries, but also by the developing countries as well. People all over the world are faced with these problems and are seeking solutions to protect the environment. Understanding the connection between globalization and the environment is a fundamental part for people to realize that globalization impacts the environment and seek ways to protect the environment (Najam et al. 2006).

Conclusion

From these readings I have observed that the issue of sustainability has been talked about for a very long time. The materials try to incorporate the issue of political ecology towards a sustainable world whereby human sociology and environmental concerns are addressed together. That being the case, the issue of posterity depends on how human beings address the current ecological degradation and sustainability. The reflections and discussions in the paper present plausible approaches and interventions that can promote sustainable development. The popularization of this issue therefore needs to be understood in a broader perspective in order to fight poverty and also deal with ecological issues.

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