Chapter 10
Sustainability Model for Solid Waste Management to Support the Global Economy

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ABSTRACT

Extravagancy is the key point of inflation. We consume more than necessary; we generate waste without any responsibility. Expanded consumption and depletion of resources are becoming more serious than ever. As the world population and standard of living are increasing, the amount of solid waste is also increasing. Not only the quantity but also the types of the wastes increase and become difficult to recycle due to composite wastes. With the aim of preserving the environment, this chapter will introduce the sustainability model to support the global economy. Waste management and recycling technologies, which effectively turn waste into resources, will be a great tool, especially in rapidly developing nations. The following should be a Motto in life: "the practice of treasuring and using all things as long as possible." While economies continue to grow, this motto spirit restrained the generation of waste and motivated the development of technology for reuse, recycling, and effective use through heat recovery for energy.

INTRODUCTION

Sustainability can be explained as the ability to meet the needs of humanity without compromising the needs of future generations. It is very important to make our life continue without any interruptions and deficiencies while ensuring the continuity of production and diversity (Tchobanoglous, et.al., 1993). Sustainability is used to leave a world in which economic, ecological, and social conditions can be maintained for future generations.

In 1987, a report had published by United Nations with the title of "Our Common Future" and the word "sustainability" had been used for the first time (UN 2030). Since then, it becomes one of the most attractive subjects that people start to discuss. The content of the report was related with the problems

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arising from rapid industrialization and population growth and trying to find solutions to these problems. It was a warning about the negative consequences of economic development and globalization on the environment. At that time, the most important subject was the ozone hole caused by human activity over Antarctica (UN 2030).

After the report of "Our Common Future" politicians and social scientists as well as economists impropriate the subject by discussing the environment and development as a single issue (USEPA 2010). The goals of economic and social development must be defined in terms of sustainability in all countries.

After starting the awareness about sustainability, today, it is still widely believed that sustainability can only be achieved by using the resources provided by nature at a speed that allows for spontaneous regeneration, despite the fact that the world's resources and the environment are moving towards the limit of depletion as a result of human activities (EC 2010). After a certain period, we may not have any more oil or some important minerals and ores for a lifestyle as we have now. We may not be able to supply energy as we used to have, or we may not continue manufacturing necessary daily products anymore. In this case, life will be more difficult and more challenging. This period is inevitable, if not for us but sure, for our children. Consequently, we have to preserve our children's future by using the natural resources in a reasonable way, by not polluting the environment and by consuming less. This is what the "sustainability's" real meaning.

When "sustainability" is mentioned, first the environmental meaning comes to mind, however, this concept actually expresses a holistic perspective that includes ecological, social conditions and economic components (EC 2010). Sustainability should not be thought of only in the environmental sense. We should not consume tomorrow's resources from today. Not only the minerals but also biological resources should have been protected.

LITERATURE REVIEW

The rapidly increasing population and changing living standards make it difficult to control and manage both the waste volume and diversifying waste composition (Goren 2005). The increase in the size of the pollution and the potential risks associated with it caused by solid wastes made the waste management more important that before. Deficiency of the natural resources bring the problem of economic, social and environmental problems. For this reason, it is necessary to analyze the elements of integrated solid waste management that include all stages from waste generation to final disposal and their relations with each other (Ozcan, et.al. 2016).

Waste management aims to minimize the effects of the disposal of wastes generated on the environment and economy. The shortest way to achieve this goal is to naturally reduce the amount of waste. The target of having a better and more prosperous life, makes the people face with more problems and challenge. The health is under threat of increasing pollution. There is a huge destruction of natural resources and the fact that every product produced is ultimately turned into waste. Consequently, recycling is the most important starting point for waste management. By recycling the materials are used as a source of raw material. In fact, the word "recycling" is used as a general phrase for such kinds of activities, and it has many sub steps like reduce, reuse and etc (Öztürk, et.al. 2005).

A while ago, the phrase of "3R" was widely used to express these types of activities, that is the acronym of "Reduce, Reuse, Recycle" (Ölander, et.al. 2006). Before using them as a source of raw material for another manufacturing processes, the amount of waste should be reduced by us as conscious consumers.