

1.3 Research Problem

Despite that environmental pollution has attracted the attention of authors and researchers both in academic and health fields, majority of researchers and authors focus on the causes and impacts of environmental pollution (Kemp & Pearson, 2007; Kemp & Pontoglio, 2011). On the other hand, some authors such as Lanoie, Laurent-Lucchetti, Johnstone and Ambec (2011) focus on how environmental pollution can be addressed through passing policies prohibiting landfills, air and water contamination among others.

While these studies have contributed significantly to the field of environmental protection, there is limited research on the role of designers in protecting environmental pollution. As hinted earlier in this chapter, industrialization has caused increased pollution especially through landfills and contamination of air and water. In their study, Akehurst, Afonso and Martins Gonçalves (2012) argue that road transport contribute about 30% of the total environmental pollution globally. The authors noted that several authors and researchers have focused on how transport sector should be reformed to reduce high levels of environmental pollution.

Globally, especially in developing countries and emerging cities there is little concern paid to construction (urban planning) as a way of achieving good environmental living conditions and this has resulted in poor environmental protection in urban areas. Due to the challenges faced by governments and policy makers in developing and developed countries related to environmental pollution, there is a need to examine how designing of urban planning would help in reducing environmental pollution.

As mentioned by Albino, Balice and Maria (2009) and Anvar and Venter (2014), sustainable development is very crucial in the current world with reducing land reserves, depleting natural resources, and increasing populations leading to increased energy consumption and increased environmental pollution as a result of industrial byproducts. This study therefore, focuses on the role of design in environmental pollution reduction. One of the challenges facing the construction industry is that once a problem has been made in the introduction stages and it goes unnoticed it is very expensive to revert it. Therefore, sustainability in the environment can be derived from the designing stage.

The main problem in tackling the environmental challenges facing the world is the focus on macro-environmental strategies. The reason why Kyoto Protocol failed is because it addressed macro-environmental strategies instead of focusing on micro-environmental strategies. In this competitive world, very few countries will be willing to cut on their industrial output for the sake of the environment. However, US NRC (2008) reasons that micro-strategies that focuses attention at individual-level efforts can mitigated a number of environmental challenges listed above.

Ruddiman (2005) believes that there are countless technologies in the world today that can attenuate the environmental challenges the world is facing, but there are many challenges that impends on the use of these technologies. Everything used in the world is designed and through designing, innovative ways can be integrated to protect the environment.

However, most designers do not consider environment as one of their concerns despite the fact that they can play a critical role in designing environmental friendly products and services. Can designers play a critical role in environmental protection? Therefore, this study will explore the

role of innovation design of environment protection, with a focus on how to lead designers' design thinking designing products of protecting environment.