

UNIVERSITI TEKNOLOGI MARA

**AN URBAN MATERIAL FLOW
ANALYSIS AND CARBON
FOOTPRINT ASSESSMENT OF
KUALA LUMPUR**

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ABSTRACT

A city's urbanisation influences the environment and increases the carbon footprint in terms of things like water consumption, electricity consumption and electricity consumption. Kuala Lumpur the capital city of Malaysia that has seen urbanisation as a result of population growth which is expanding quickly to accommodate the requirements of the city's inhabitants. Changes in other aspects within the city contribute to the environmental impact in the future as well affecting the nature of consumption. The amount of input material obtained for food consumption is 0.00024 kg/day, for water the amount obtained is 426,017.5 l/day and for electricity the amount obtained is 0.21 koe/day. The amount of output material obtained for food waste is 2.57 kg/day, for wastewater the amount obtained is 25,2663.1 l/day and for carbon emission the amount obtained is 2.69 koe/day. For carbon footprint, the amount obtained for water consumption is 0.15 tCO₂e and for electricity consumption the amount obtained is 0.03 tCO₂e. The findings in the study shows that increased of food consumption and electricity consumption for the material flow will cause various environmental impacts such as climate change due to greenhouse gas emissions. Thus, this study can be used to formulate strategies to overcome the issue by enforcing a low carbon city approach to ensure the city and its environment are well preserved for the future generation.

Keywords: urbanization, food consumption, energy consumption, water consumption

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Urbanization in a city has made an impact to the environment and has increased the carbon footprint such as water consumption, electricity consumption, waste production and food consumption. Cities are the main critical area for the issues of climate change due to the increase of population and economics and cultural activity levels are high (Shahidan & Shafie, 2020). Kuala Lumpur is the capital city in Malaysia that has undergone urbanization with the increase of population and the city is rapidly growing to fulfil the needs of the population in the city. Rapid growth and increasing development in the city have impacted the urban metabolism and the environmental impacts that. A city that undergoes unplanned and uncontrollable urban development may cause a huge impact to the environment and affecting the population that is living in the city.

Urbanization is the process of developing an area that can accommodate a large and growing population and has increased rapidly throughout many regions of the world and continuing to accelerate in the future (Chan & Vu, 2017). Urbanization has contributed to the city growth through agglomeration and has been recognized as producing many benefits such as job opportunities, health facilities, infrastructure services and increased income (Liang & Yang, 2019). Additionally, issues regarding urbanization in fast-emerging cities are becoming increasingly complex as they are trying to adjust with the rapid population growth (Chan & Vu, 2017).