Abstract

The last two decades have witnessed the steady growth of the construction industry in Uganda and with it the increase in demand and supply of construction materials to support the industry. However, this trend in the two industries has been marred with escalating environmental impacts and high embodied energy along their life cycle processes. In addition, effective policies have not co-evolved fast enough towards facilitating the sustainable growth of the two sectors. This study aimed to investigate this scenario based on a qualitative study approach focusing on cement and burnt clay bricks as the two most extensively used and locally produced construction materials in Uganda. The study applies the concept of life cycle impact analysis based on the systems and processes adopted by two case study producers (Hima Cement Limited for cement and Butende Brick Works for burnt clay bricks) in order to assess the environmental impacts of the materials. This is followed by an assessment of how the respective policies have evolved towards ensuring the sustainable cradle to gate processes for the sector. Primary data from interviews and direct field observations were complemented with secondary data from statistics archives, policy documents, print media, and published academic articles on both sectors.

The study finds that the construction industry's contribution to the GDP grew from 800 million to 41 billion shillings over the 2001 to 2016 period while the respective production of brick and cement products grew by 94% over the same period. The accompanying environmental impacts findings indicate high GHG and particulate matter emissions, wastes and ecological habitat degradation as the critical ones for cement and high levels of deforestation as well as ecological habitat degradation for the bricks. Additionally, the data did not reveal any coordinated efforts towards incentivising the emergence and promotion of alternative materials. On the co-evolution of responsive policies, the study finds a pattern of fragmented and incoherently executed policy frameworks in spite of the reported evidence of the escalating negative impacts. The key recommendations include more systematic reporting and tracking of related growth and impacts, co-evolution of more coherent and systematic policy response, incentivising emergence of alternative materials as well as improved efficiencies across both production and use-disposal stages of both materials.

Key words: Uganda, construction materials sector, co-evolution of policies, burnt clay bricks, cement, life cycle impact assessment, embodied energy.