

Carbon Footprint of HEI Students' Activities in Tacloban City, Philippines

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Abstract

Human activities are responsible for a large portion of greenhouse gas emissions. During the onset of the COVID-19 pandemic, changes were observed in individual routines, thus affecting the amount of GHG emissions. In addition, due to the shift from face-to-face instruction to online learning, student activities were affected. To study this circumstance, it is important to account for the activities contributing to their carbon emissions. The carbon footprint is the total GHGs emissions generated by our actions, directly or indirectly. The purpose of this study was to determine which student-related activities contribute the most to the carbon footprint of Higher Education Institutions (HEIs) students during face-to-face and online learning. A descriptive-survey research design was employed using an online survey to gather the activity intensity of every student regarding their food, electrical consumption, ICT use, and transportation. The activity intensity was then multiplied by the emission factors based on other studies to compute their carbon footprint. It was revealed that the student's average annual carbon footprint during face-to-face learning was estimated as 2.55 t-CO₂e per person and 1.35 t-CO₂e during online learning. In addition, transportation use was the highest contributor and accounted for 58% of the total carbon footprint of the students during face-to-face learning. However, during the height of the pandemic, the footprint from transportation significantly dropped. Food, on the other hand, contributes the most to online learning, accounting for 48% of the total footprint. Additionally, a significant increase in emissions from ICT use and electrical consumption was observed.

Keywords: Carbon footprint, transportation, ICT use, descriptive-survey, Philippines