

Thesis Title	Greenhouse Gas Emissions from Robusta Coffee Bean Processing in Community Enterprise
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Abstract

This research aimed to evaluate GHG emissions from Robusta coffee bean processing in community enterprises. The activity data such as raw materials and energy consumption was collected by field survey at Thamsing Coffee Group Community Enterprise. The methodology was followed the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. The scopes of GHG assessment were from coffee cherry bean to three Robusta coffee products such as roasted coffee, roasted and ground coffee and instant coffee mix products. The functional unit was 1 kilogram of each product. Results showed that GHG emission of roasted and ground coffee was 245 gCO₂e/kg and that of roasted coffee was 223 gCO₂e/kg. The main GHG emissions were from the consumption of electricity and liquid petroleum gas (LPG) in roasting process, accounting for 45.99% for roasted coffee and 39.86% for roasted and ground coffee. Additionally, a case study of Robusta coffee bean processing to instant coffee mix product emitted 342 gCO₂e/kg. Thus, the GHG emission reduction from Robusta coffee bean processing should be focused on energy saving. For example, using energy efficient stove can reduce LPG consumption up to 69% with the payback period of 1.4 years. Moreover, dry endocarp wastes can be also used to produce fuel briquettes, which is renewable energy source.

Keywords: Community Enterprise/Greenhouse gas/Instant coffee mix /Roasted coffee/Roasted and ground coffee/Robusta Coffee