

ESTIMATION OF GREENHOUSE GASSES OF METHANE AND DINITROGEN OXIDE PRODUCED FROM LIVESTOCK IN BOGOR REGENCY

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ABSTRACT

Agriculture sector is one sector emitters of greenhouse gases (GHG's), including livestock subsector. GHG's produced from livestock sector are methane (CH₄) and nitrous oxide (N₂O). Methane is produced during fermentation proses in the rumen and during manure management, while nitrous oxide produced by direct and indirect from the manure. The aim of this research was to observe the level of emission greenhouse gases from livestock sector in Bogor Regency. Data of livestock's population in Bogor Regency were used for basic calculation. The activities data were collected from the survey conducting in Bogor Regency using purposive sampling method. The data were calculated using method of Intergovernmental Protocol of Climate Change (IPCC, 2006) as default (Tier 1) and modified method base on survey (Tier 2). The results showed that the total methane emission in Bogor Regency for Tier 1 and Tier 2 were 5.09 and 4.62 Gg year⁻¹ respectively, while nitrous oxide emission were 0.285 and 0.216 Gg year⁻¹ respectively. The total GHG's in carbon dioxide (CO₂) equivalent for Tier 1 and Tier 2 were 117.15 and 106.32 Gg CO₂ eq year⁻¹ respectively. Base on animal type, the highest GHG's emission were from sheep (39%), followed by buffallo (18%) and goat (17%). The conclusion were the GHG's emission from livestock sector in Bogor Regency calculated using Tier 2 was lower than using Tier 1.

Keywords: livestock sector, greenhouse gases, methane and nitrous emission.