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Title: ESTIMATION OF URUGUAYAN EMISSION FACTORS FOR CH₄ FROM ENTERIC FERMENTATION AND DIRECT N₂O EMISSIONS FROM AGRICULTURAL SOILS WITH GRAZING ANIMALS

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Beef and dairy cattle are very important for Uruguay's economy. GHG emissions from these activities are responsible for more than 80% of total national emissions. Uruguayan emissions of CH₄ from livestock enteric fermentation and N₂O emissions from soils with grazing animals have been determined as national key sources of greenhouse gases (MVOTMA, 2002). The objective of this work was to develop Tier-2 methods for these two key sources. A multidisciplinary group of national experts from public institutions and the private sector has been conformed to estimate national emission factors. Local research on GHG emissions by livestock is scarce. However, there is very abundant information in the country on pasture production and quality and on animal nutrition which can be used for deriving country-specific EFs. Different agro-ecological units within the country were considered for deriving country-specific emission factors for cattle. In different zones in the country, and mainly due to the characteristics of the soils and native pastures productivity, specific production systems predominate. An enhanced characterization of livestock population for the different animal subcategories from national statistical data was compiled. Animal performance, used to estimate gross energy (GE) intake: amount of energy (MJ/day) an animal needs to perform activities such as growth, lactation and pregnancy were adjusted with experts opinion. Emission factors were determined for beef and dairy cattle for the 7 agroecological zones considered.

Key words: emission factor, Tier-2, methane, nitrous oxide, grazing systems.