

67 – Environmental Tax: Case Studies for Typical Dairy Farms in Brazil

Gabriela Mota da Cruz, Sílvia Helena Galvão de Miranda

This paper simulated a Pigouvian tax on GHG emissions from livestock for milk production. Data from three typical farms of different technological levels from the CEPEA cost panel (Castro / PR - high, Caçú - medium, Leopoldina - low) were used. The year analyzed was 2018, comparing the economic and financial indicators of the properties in the scenarios with and without the adoption of tax. To calculate the value of the tax per head, for each category of cattle considered in this paper, the emission factor per head of the animal category was multiplied by the carbon price estimated in this study. The emission factors used to estimate the tax, which considered an average emission value per animal category (cow, bull and young cattle) were extracted from the Third Brazilian Inventory of Anthropic GHG Emissions and Removals, published by the Ministry of Science, Technology, Innovation and Communications from Brazil (MCTI; EMBRAPA, 2015); while the Carbon Market Trade Book database was used to estimate the price of the ton of carbon, which is a system that consolidates sales simulations of carbon credits in Brazil in the voluntary market (BVRIO'S, 2019). The results showed that the simulated environmental tax could make dairy farming of a lower technological level unfeasible.

Biographical note

Gabriela Mota da Cruz has a bachelor's degree in Economics from PUC-Campinas and a master's degree in Applied Economics from University of São Paulo (USP-ESALQ). She received a scholarship from Instituto Escolhas and CAPES to support this research. Her master's dissertation simulates and analyzes CO₂e abatement costs, revenue and abatement capacity for the implementation of mitigation measures in typical cattle farms. Part of her master's research was presented at the "Agricultural Trade Research Consortium", IATRC or Consortium, (Sevilla, Spain, 2019) and "20th Global Conference on Environmental Taxation", GCET20, (Limassol, Cyprus, 2019). She currently works as a Researcher at Agroicone in the area of "Economic Modeling for AFOLU". She has experience in using the general equilibrium model Trade Analysis Project (GTAP) and also in the partial equilibrium model Brazilian Land Use Model (BLUM). She participated as a researcher in the Partnership for Market Readiness (PMR-Brazil) project, financed by the World Bank.