Developing a framework for computing GHG emission rates for peri-urban agriculture in Hyderabad, India

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Limited information is available on the greenhouse gas (GHG) emission rates in the peri-urban agricultural systems. This information is necessary for the changing paradigm of climate-smart agriculture with less carbon footprint. The decreasing trends in water availability, agricultural area and productivity, and negative changes in agricultural land use patterns make agriculture, especially fruit and vegetable cultivation in peri-urban areas of Hyderabad city, in India, highly vulnerable to climatic variations. Hence a study was contemplated to develop a methodological framework to study the changes in land, water and energy use and their impact on GHG emissions and, thereby, on agricultural production and productivity. Variations in GHG emissions and carbon credit in the identified peri-urban sites were calculated using the accounting framework with respect to changes in land use and energy usage.

Keywords: Energy use, GHG emissions, geographic information system, land use, peri-urban agriculture, water use.