Geotechnologies applied to the analysis of buildings involved in the production of poultry and swine to the integrated food safety system and environment

Leila Dal Moro, Laércio Stolfo Maculan, Alcindo Neckel, Giana de Vargas Mores, Dieisson Pivoto, Eliane Thaines Bodah, Brian William Bodah, Marcos L. S. Oliveira

Abstract:
Initiatives to promote food security in relation to reducing food waste are of relevant for sustainability on a global scale. Rural buildings involved in the production of poultry and swine, in an integrated system tend to comprise a variety of forms with complex characteristics. Studying the impacts of an integrated system on sustainability and food production becomes opportune. This study aims to analyze parameters in different buildings involved in the production of poultry and swine; considering economic, social and environmental factors with the use of remote sensing geotechnologies related to food safety. Methodologically, a K-means cluster analysis of the buildings was carried out to understand the impacts of raising poultry and pigs in relation to the distance from forests, roads, water bodies, distances from local and total buildings, based on the use of geotechnologies. Unpublished images from the Landsat TM-8 satellite were used, made available by the United States Geological Survey, in partnership with the United States National Aeronautics and Space Administration, modeled in QGIS. The results present eight production clusters, and a variation of distances between the studied buildings was identified, along with distances close to water resources. The importance of an integrated poultry and swine production system, which contributes to global food security, was highlighted.

Keywords

Production cluster, Food production, Food safety, Remote sensing, Sustainable Development Goals