

## ABSTRACT

The development of agriculture throughout history has had a profound impact on human lifestyles, enabling the establishment of settlements and leading to population growth through increased food availability. This has created an ongoing pressure to increase agricultural production to meet the world's demand for food. However, agricultural processes are not efficient, resulting in food losses that have negative environmental (e.g., degradation of natural resources and pollution), social (e.g., reduced food security and nutrition) and economic (e.g., reduced farmer income) impacts. The purpose of this study is to explore the role of digitalization in the agricultural sector in Colombia – focusing on the rice production – and to suggest best practices for the implementation of digital agricultural technologies and sustainable agricultural practices to achieve a reduction of food loss in the country and reach a sustainable production. The findings are provided by a collection of primary and secondary data, used in a comparative case study analysis between Colombia and Kenya, followed by in-depth expert interviews from Colombia. The experts provided information about the problems of food loss in the rice sector, as well as the current status of implementation of sustainable agricultural practices and digital agricultural technologies. In addition, an assessment of the recommendations based on the Kenyan case is presented to the Colombian experts. These recommendations are emphasizing how to address the main environmental, social and economic problems that are key to improving production in the rice sector. Overall the empirical evidence allows for additional recommendations considering the level of environmental emergency, as well as the level of knowledge and investment required by farmers to reduce food loss in the agricultural sector in Colombia. Focusing on reducing food loss to improve practices in the agricultural sector equips the various stakeholders (e.g., unions, farmers, policy makers, service providers) with tools to prioritize the needs of the sector through training, knowledge transfer and appropriate subsidies.