

The results indicate that Trans Nzoia (480,000 tonnes) and Uasin Gishu (450,000 tonnes) are the highest cereal-producing counties in 2023, reinforcing their status as Kenya's primary cereal-growing regions. Narok and Nakuru follow, contributing moderately to national cereal output. Although Kirinyaga recorded the lowest total production among the analyzed counties, it achieved the highest yield efficiency (6.25 tonnes per hectare), highlighting more efficient land utilization or better farming practices.

Overall, the findings show that high total production does not always correspond to the highest efficiency. Counties with lower total output may still perform well in terms of productivity per hectare. The analysis demonstrates the usefulness of Spark for large-scale agricultural data analysis and provides insights that can support agricultural planning, resource allocation, and productivity improvement strategies in Kenya.