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Digitalisation of agriculture in Zimbabwe: Challenges and opportunities

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ABSTRACT

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To provide insights on the potential of digitalised agriculture, exploring its challenges among the smallholder farmers in Zimbabwe, an application of digital agriculture was gathered. The research was conducted under similar Zimbabwean agricultural conditions were there. Notably, there are disparities in complexity and level of digitalisation in developing and developed countries. Unlike in the developed countries, agriculture is more advanced and highly applied in developing countries. Specifically, application of digitalized agriculture is skewed towards commercial farmers than the smallholder communal farmers. The application of e-agriculture has gained momentum world over in recent years. In Zimbabwe where it is more common to the highly literate farming communities than poorly resourced farmers. The digitalization of modern technology applied in agricultural production systems, the application of resources e.g. water, fertilizers, pesticides etc. to increase efficiency that translates into high farm outputs (both quantity and quality). Machine Learning (ML) which is a subset of AI, developed to handle data during the formation of knowledge-based farming systems. Digital agriculture ranges from the use of simple offline programs to sophisticated systems installed into information and communications technology (ICT) algorithms run by computers. In advanced digitalisation,