

# Bridging the Gap: A Comprehensive Study on Web-Based Agricultural Machinery Rental Systems

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**Abstract:** *Agriculture is one of the support sectors of the world economy, along with several challenges that render agriculture productivity and income challenging for farmers, particularly in developing nations. This paper fully analyzes integration concerning some of the most advanced technologies like Artificial Intelligence(AI), Machine Learning (ML), Internet of things(IoT) and smart agricultural practices to provide effective efficiency and availability for agricultural tools. With a structured literature review, numerous applications in agriculture of AI and ICT, such as precision agriculture, crop monitoring via drone, and management systems are analyzed. Digitalization application would include the article presenting a discussion on renting out, using digital platforms including that of Rent4Farm: Through that platform, agriculture allows resources to be rented appropriately toward generating passive incomes for them. Socioeconomic factors affecting farmers' welfare are also dealt with and supportive policies are called for in terms of removal of the barriers to adoption. The paper suggests a collaborative approach from stakeholders towards promoting sustainable agricultural practices and betterment of the livelihoods of smallholders through innovative solutions offered through the avenues of equipment rental and market access. The findings would therefore indicate that technology in agriculture should enhance productivity and also empower the farmer with know-how on how to make better decisions for such a resilient agricultural sector.*

**Keywords:** Artificial Intelligence, Smart Agriculture, Machine Learning, Internet of Things, Equipment Rental, Digital Platforms, Farmers' Well-Being, Precision Agriculture