ID 607

From Fields to Skies: Assessing the Viability of Unmanned Aerial Vehicle (Drone) Technology for Precision Agriculture in Sri Lanka

KR Hettiarachchi[1#], KAD De Alwis[1] and D Gunasekera[1]

[1]Faculty of Computing, General Sir John Kotelawala, Defence University, Sri Lanka

[#]38-bit-0052@kdu.ac.lk

Abstract

This research paper explores the viability of Unmanned Aerial Vehicle (UAV) technology in Sri Lanka's agriculture sector, focusing on its practical and potential benefits. The research aims to pave the way for seamless integration, enabling Sri Lanka's agriculture sector to harness the full potential of UAV technology. Drones can be used for a variety of crop management applications by frequently taking high-resolution photographs. To increase crop production, it is essential to monitor crops effectively and spray fertilizer and pesticides precisely. However, these methods can also have detrimental effects on people's health and the environment. Therefore, using UAVs can reduce these dangers. Despite the many uses of drone technology, Sri Lankan farmers have difficulty putting it into practice because of concerns with cost and accessibility, technical complexity, and regulatory limitations. The significance of overcoming these issues is emphasized by this study in order to make it easier for Sri Lanka's agriculture sector to utilize UAV technology. The research also emphasizes outsourcing's potential as a viable option and offers suggestions for governments, agricultural stakeholders, and service providers to encourage the broad use of UAV technology. By overcoming these issues, the aim is to streamline the integration of UAV technology in Sri Lanka to improve agricultural methods, raise productivity, lessen negative environmental effects, and protect the health and welfare of farmers and customers. Collaboration amongst stakeholders, suitable infrastructure, supportive legislation, and capacity-building programs are necessary for the successful integration of drones into the agriculture industry.

Keywords: *UAV technology, Precision agriculture, Challenges, Outsourcing*