1. **INTRODUCTION**

Over the decades, increasing demands for supplying agri-food products have influenced agriculture patterns worldwide. Additionally, changing human lifestyles and increasing human population and urbanization have directly impacted the production, consumption of agri-food products. The financial value of strategic plants and the scarcity of natural resources for agriculture have spurred plant producers and agriculture researchers to discover new ways to overcome the food crisis. Thus far, various modern technologies and efficient strategies have been implemented in the agri-food sectors. However, reports indicate a need to find and/or improve the current agri-food tools to overcome the hunger problem and demand-supply gap by increasing production efficiency. Agricultural technology refers to the use of tools, machinery, and techniques aimed at boosting the efficiency of food production, increasing yields, and improving the quality of crops The evolution of agricultural technology dates back to the Neolithic Revolution, where the discovery of farming led to the domestication of plants and animals. This marked the transition from nomadic hunting and gathering to settled agriculture. However, over centuries, agriculture has been transformed by various technological advancements, shaping farming into a science-driven and productive sector that it is today . The advent of the Industrial Revolution in the late 18th and early 19th centuries marked a significant milestone in the evolution of agricultural technology. Introduction of mechanized tools like the cotton gin, steam tractor, and eventually, the combine harvester revolutionized agricultural practices by significantly reducing human labor and increasing productivity. The Green Revolution in the mid-20th century, marked by the introduction of high-yielding crop varieties and advanced fertilization and irrigation methods, brought another transformation. These innovations helped combat food shortage issues and further boosted agricultural productivity. In the late 20th and early 21st centuries, the development and integration of digital technologies into agriculture, often referred to as the digital agriculture revolution, have initiated a new wave of advancements. These technologies include GPS (Global Positioning Systems), remote sensing, robotics, artificial intelligence (AI), big data, and blockchain technology .