

Problems or/ and the customer needs could be identified for this product

**Problems Identified**

**Labor Shortages** The labor problem is most acute in agriculture where many of the tasks that are highly repetitive and can only be done manually are scarce.

**Scalability and Flexibility** Farmers require solutions that are easily adaptable to accommodate various farms and their sizes.

**Environmental Impact** The current form of farming has been associated with problems such as soil erosion, water pollution and emission of greenhouse gases due to use conventional farming methods.

**Inadequate Crop Monitoring** This is because, many farmers do not have the tools to allow them to monitor the health of their crops, and conditions of the surrounding environment, to put them in a position to respond swiftly to the outbreak of diseases, pest attack, or unfavorable weather conditions.

**Customer Needs**

**Automation and Efficiency** Farmers require automation solutions that minimize the use of manual labor, enhance productivity, and decrease the cost of production. This is coupled with the fact that the agricultural workforce is graying and fewer young people are seeking employment in the sector. The use of solar-powered systems is ideal because they do not contribute to the emission of greenhouse gases (Kang, 2019).