

## ABSTRACT

Irrigation systems are becoming increasingly important in Kenya, owing to the increase in human population, global warming, unpredictable weather patterns and high food demand. This research proposal aims to design a SMS based crops watering system for monitoring and control of irrigation systems in remote locations, and to optimize water use for irrigation farming.

A SMS based irrigation monitoring and control system, employing sensors designed to facilitate the autonomous supply of adequate water from a reservoir (tank) to the farm.

Arduino integrated design environment, and embedded C programming language will be used to develop and implement a real working prototype. A water pump will be used to supply the water required by the soil. The prototype will consist of sensing, monitoring and control, and SMS connectivity capabilities. Experimentally I expect the system to demonstrate flexibility and practical applicability of the proposed system, which will be important, not only to the farmers, but also for the expansion of economic activity in agricultural sells. Furthermore, this system reduces the high level of supervision required to supply irrigation water, enabling remote monitoring and control of the watering activities in the farm.

**Keywords:** SMS, prototype, irrigation, remote monitoring, Arduino and c programming language.