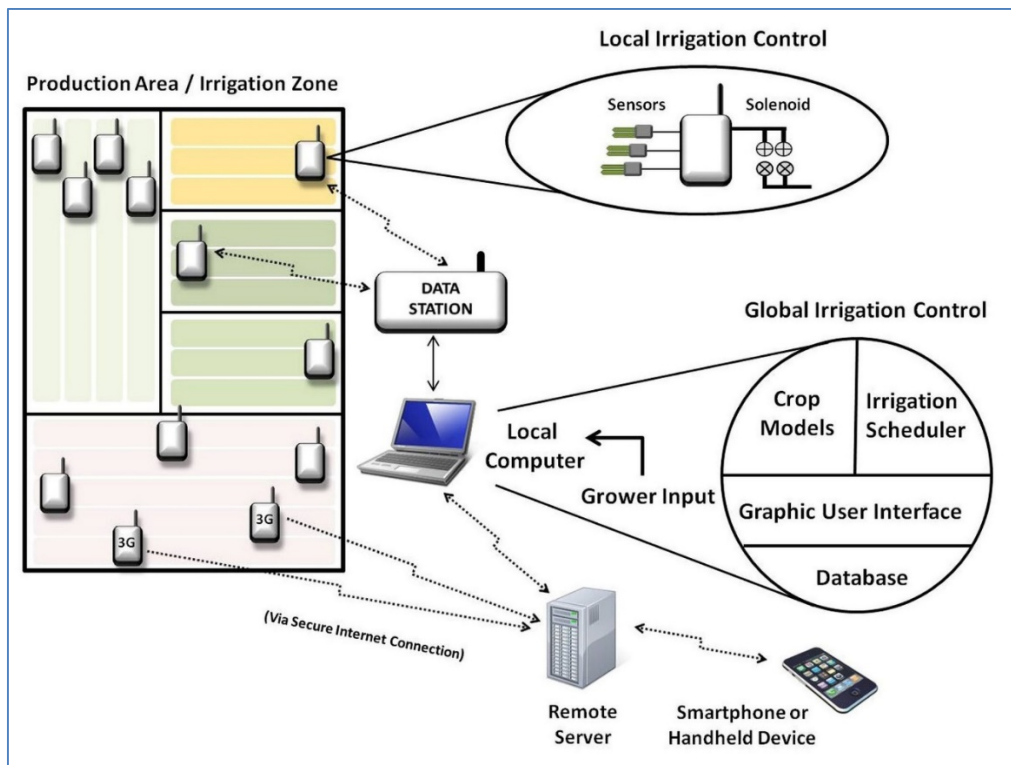# Costs and Benefits of Wireless Sensor Networks:

How a sensor network might benefit your operation

Introduction- What is a wireless sensor network?

A wireless sensor network is a combination of hardware and software that can provide real-time information about soil moisture and other factors at your operation (Figure 1). Hardware includes sensors that can measure things like soil moisture, air temperature, relative humidity, solar radiation, electrical conductivity (salt) levels, and leaf wetness. These environmental sensors (see the online learning module - All About Sensors) are then connected to a datalogger or "node" which collects, stores, and transmits the information collected from sensors.

This node then wirelessly transmits this information automatically to a base station, similar to sending a text message via a phone. The base station receives this information from all of the nodes at your operation and stores it permanently on your computer's hard drive. You can quickly access real time or historic sensor information through software that is installed on your computer.

Figure 1. Schematic of wireless sensor network, showing sensors, nodes, and base station

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Majsztrik, J., E. Lichtenberg, and M. Saavoss. 2014. Costs and benefits of wireless sensor networks: How a sensor network might benefit your operation. *In*: Managing Irrigation through Distributed Networks Knowledge Center, M. Chappell, P. Thomas, and J.D. Lea-Cox (Eds.). Published online at: https://myelms.umd.edu/courses/1110342 18p.