



## Proximal SoilSenS Technologies Private Limited

It is increasingly becoming apparent that technology can enhance the productivity of resource-challenged agricultural practices in developing countries. In India, the agriculture uses 80% of available water and out of which 40% water is wasted. Over irrigation causes the leaching of nutrients from the soil contaminating the ground water and reduces crop yield. The efficiency of water usage in the agricultural fields needs to be improved. With this motivation SoilSenS team has developed a low cost soil monitoring system. The system is embedded with a soil moisture sensor, soil temperature sensor, ambient humidity sensor and an ambient temperature sensor. Based on these parameters farmers are advised about optimum irrigation using a mobile app. The developed system finds application in open farms, green houses, gardening and research/agricultural labs.

Fig. 1 lists the key features of the entire system developed by SoilSenS. The system is powered by a solar cell and is capable of working for 3 – 4 days without solar energy. The entire system is made modular, where each components of the system like solar panel, signal processing unit and sensors can be replaced individually. Height of the system is adjustable and it can be varied from 1 m to 3 m based on the crop height so that the crop doesn't block the solar panel. Data from all the sensors are logged into a mobile using GSM. The data can also be made available to the cloud and can be used for further analysis.

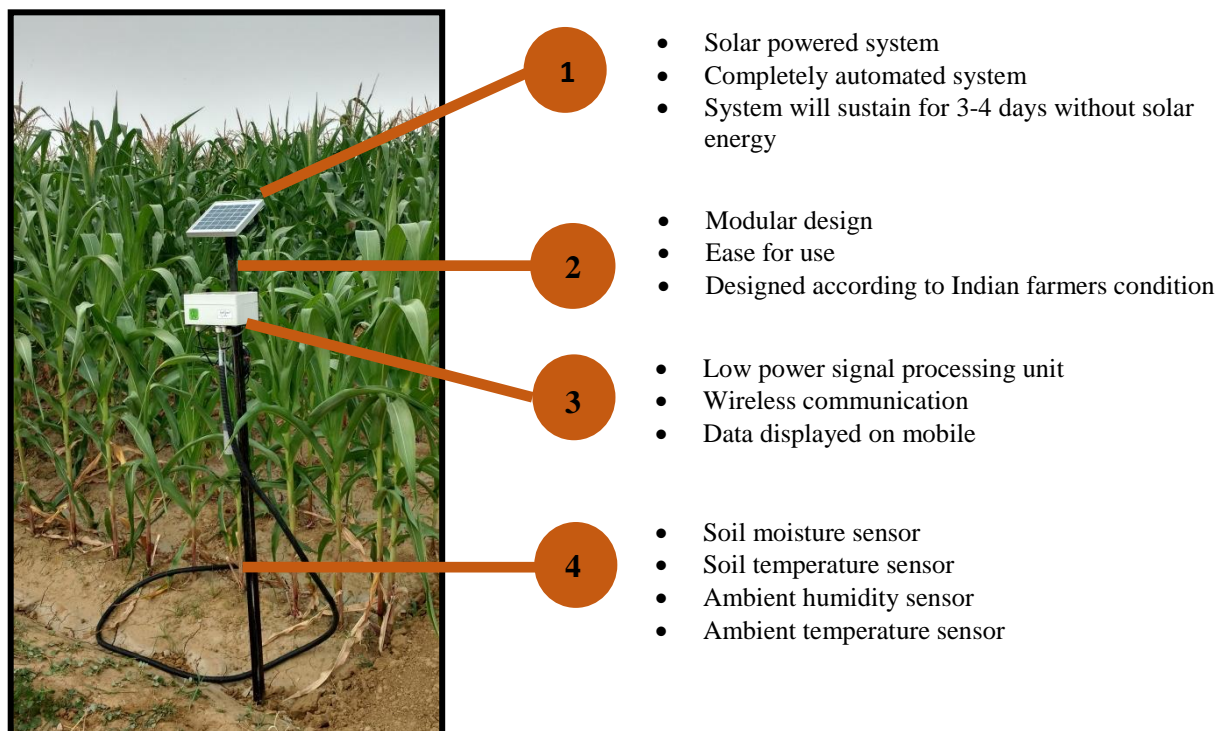
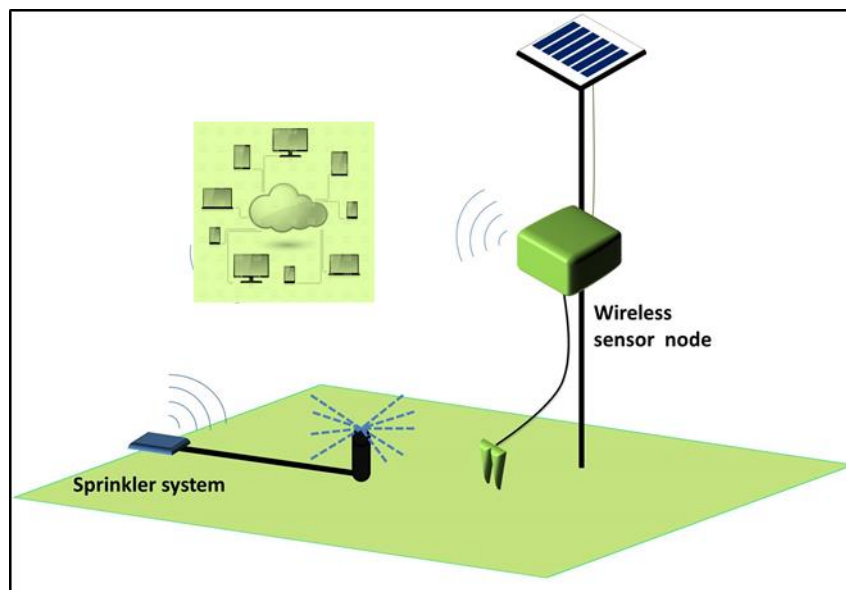


Fig. 1: Soil Monitoring System

### TECHNICAL SPECIFICATIONS OF SENSORS:

Sensors	Measurement range	Accuracy	Response time
Soil moisture	0 – 100%	±3%	10 seconds
Soil temperature	5 °C - 80 °C	±1%	5 seconds
Ambient humidity	0 – 100% RH	±1%	5 seconds
Ambient temperature	5 °C - 80 °C	±1%	5 seconds

The system is indigenously developed at one fifth of the cost of commercially available systems. The developed technology will benefit the farmers, agricultural institutes, industries (corporate farming) and research labs around India who are currently using the high cost imported products. Service after sales is a major cause of concern for the imported products.



Schematic representation of deployment