

Project Design Phase-I
Proposed Solution Template

Date	01 october 2022
Team ID	PNT2022TMID11029
Project Name	Project – IOT based Smart Crop Protection System
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Plant health is preserved and sustainable harvests are maintained thanks to crop protection. The type of cultures grown and the threat determine the best plant protection technique. It might be weeds, pests, or illnesses. Nevertheless, actions must be prompt and, whenever possible, preventative. Digital solutions are widely used in contemporary crop protection chemicals. They allow for the accurate examination of soil and plant conditions and offer precise data on outside variables like the weather. Additionally, they enable resource usage to be optimised. Farmers may thereby safeguard their crops, boost their earnings, and lessen environmental harm.
2.	Idea / Solution description	For good, high-quality yields, farmers must preserve their crops from pests, diseases, and weeds. Achieving crop protection goals depends in large part on crop protection. We are about to suggest a method for using sensors like soil moisture sensors, temperature sensors, and a humidity sensor to monitor various field characteristics including soil moisture, temperature, and humidity. The amount of water in the soil is measured or estimated by capacitive soil moisture sensors. Portable soil moisture probes may monitor soil moisture at many sites, in contrast to stationary sensors, which are installed in the field at specified depths and locations. Smart cameras are employed to keep an eye on the field, and gated data can be stored on the cloud so that farmers can access it online from anywhere. As a result the farmers can protect crops and increase profits and reduce environmental damage.
3.	Novelty / Uniqueness	<ul style="list-style-type: none"> • Internet of Things (IoT) technology provides a variety of applications, including automatic irrigation decision assistance, crop growth monitoring and selection.

		<ul style="list-style-type: none"> • Automatically watering the crop.
4.	Social Impact / Customer Satisfaction	<p>A smart crop protection system's capacity to reduce labour requirements and safeguard crops from animals and birds is one of its greatest benefits. Due to irrigation inefficiencies, evaporation, and overwatering, conventional watering techniques typically waste up to 50% of the water they utilise. Our system uses sensors to collect data in real-time or in the past about the field's temperature, soil moisture, and irrigation schedules. Farmers can set up these systems to control their agricultural fields.</p>
5.	Business Model (Revenue Model)	<p>As a result, modernising the current traditional agricultural practises is the solution to the problem stated in our problem statement.</p>
6.	Scalability of the Solution	<p>The effect of the network on the experiments was a significant and unexpected element. Considering the quantity of sensors, this IoT-based system was successful in simulating a large-scale smart agricultural setting. Because of the price and scale of the farms, we anticipate using fewer sensors.</p>