

**Project Design Phase-I**  
**Proposed Solution Template**

Date	19 September 2022
Team ID	PNT2022TMID04713
Project Name	IoT BASED SMART CROP PROTECTION FOR AGRICULTURE
Maximum Marks	2 Marks

**Proposed Solution Template:**

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	<ul style="list-style-type: none"><li>• Crops are rapidly destroyed by predators like birds, animals and also due to the change in the weather.</li><li>• Lack of knowledge among farmers in usage of fertilizers and hence crops are affected due to high ammonia, urea, potassium and high pH level fertilizers.</li><li>• Requires protecting crops from Wild animals attacks, birds and pests.</li></ul>
2.	Idea / Solution description	<ul style="list-style-type: none"><li>• A Moisture sensor is interfaced with a Microcontroller to measure the moisture level in the soil and a relay is used to turn ON and OFF the motor pump for directing the excess water level. It will be updated to authorities through IoT.</li><li>• Temperature sensor connected to microcontroller is used to monitor the temperature in the field. The optimum temperature required for crop cultivation is maintained using sprinklers.</li><li>• The result will be generated and notifications will be sent to the person's mobile to take the necessary actions.</li></ul>
3.	Novelty / Uniqueness	Automatic crop maintenance and protection using IoT technology.
4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"><li>• Water saving: weather forecasts and sensors that measure soil moisture mean watering only when necessary and for the correct space of time.</li><li>• Out of agriculture, cities and civilizations grew, in view of the fact that crops and animals could now be farmed to meet demand.</li></ul>

5.	Business Model (Revenue Model)	Farmers need not stay on land for 24 hours to protect the crop.
6.	Scalability of the Solution	This technology can be expanded based on the area of the field that is used for protection.