

Project Design Phase-I
Proposed Solution Template

Date	25 September 2022
Team ID	PNT2022TMID30241
Project Name	IoT Based Smart Crop Protection System for Agriculture
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	To prevent the crop damage from birds and animals vandalization and to enhance the crop production. To monitor the soil moisture and humidity & temperature of the environment for better maintenance of crops.
2.	Idea / Solution description	Our ultimate aim is to protect the crops from birds and animals. Our system will have a constant sound producing audio system with the pre-recorded audio as input in order to scare the birds. We can use the PIR sensor along with Camera and GPS system. In case of movement in the field, PIR sensor will be activated which will trigger the buzzer to scare the animals. The camera will capture the images and GPS will send it to the registered mobile number. Also, it can be controlled manually and the source of power is solar energy.
3.	Novelty / Uniqueness	Our system consists of camera which is very useful to identify whether it is human or animal. By which we can identify the authorized and unauthorized entry in the field. The speaker will have a different sound so that the animals or birds can't get used to it. As it is manually controllable, we can switch of the buzzer, speaker and camera when it is not needed.
4.	Social Impact / Customer Satisfaction	It is power saving system due to the usage of solar panel. This system supports mobility and ensures portability and can be safeguarded when there is no requirement for the maintenance of the crops. The speaker that is used to scare birds can also

		switched off in the night time or field work time in order to avoid nuisance, when it is not needed.
5.	Business Model (Revenue Model)	Maximum number of farmers are being affected from this crop damage due to birds and animals. So, it will help them to keep monitoring their fields using IoT devices effectively. This model consists of PIR sensor, GPS, Buzzer, Camera, Speaker, Soil moisture and also humidity and temperature sensor for the effective monitoring of the crops.
6.	Scalability of the Solution	Agriculture plays an ultimate role in our livelihood. It is not only suitable for particular area, people, community or age. In order to protect that we are proposing this solution, which can be extended and implemented all over the world. Any updated version of this system will have a direct effect in the resultant crop production rate.