Project Design Phase-I
Proposed Solution Template

Date	01 October 2022
Team ID	PNT2022TMID20174
Project Name	Project – Smart Farmer - IoT Enabled Smart Farming Application
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)	An important factor in a nation's economic development is agriculture. Some agricultural-related concerns have consistently slowed down the nation's progress. Farmers must satisfy the demands of a changing environment, as well as those of regulators, consumers, food processors, and retailers. Climate change, soil erosion, biodiversity loss, changing food preferences among consumers, and concerns over how food is produced all contribute to mounting pressures. Additionally, the plants, pests, and diseases that are a part of the natural world that farming depends on continue to provide difficulties. Farmers face a variety of issues, such as how to: • Handle soil erosion, climate change, and biodiversity loss • Meet shifting consumer preferences and expectations • Satisfy growing consumer demand for more nutritious food
2.	Idea / Solution description	• We're about to suggest a method for tracking several field-related variables, such as soil moisture, temperature, and humidity, using sensors like soil moisture sensors, temperature sensors, and a humidity sensor. Capacitive sensors for soil moisture estimate or measure the amount of water in the soil. These sensors may be portable or stationary, such as handheld probes.

		• Portable soil moisture probes may monitor soil moisture at various locations, in contrast to stationary sensors, which are installed in the field at specific depths and locations. • A temperature sensor turns inputs into an electrical signal by monitoring and sensing the environment's heat and coolness. • A humidity sensor is used to find and quantify water vapour or water droplets in the atmosphere.
3.	Novelty / Uniqueness	• Renovating current agricultural practises that are still used in the past. • The Internet of Things (IoT) provides a few applications, such as automatic irrigation decision support and crop growth monitoring and selection.
4.	Social Impact / Customer Satisfaction	• The capacity to conserve water is one of this smart irrigation system's main benefits. • Generally speaking, typical watering techniques can waste up to 50% of the water they utilise owing to irrigation, evaporation, and overwatering inefficiencies. • To optimise efficiency, our system modifies watering schedules based on real-time or historical data from sensors. These systems can be configured by users to control irrigation as needed.
5.	Business Model (Revenue Model)	• As a result, smart agriculture, which modernises the industry's current traditional techniques of agriculture, is the answer to the issue raised in our problem statement. • ESP8266 Internet of Things Automatic irrigation system to update and increase crop output.
6.	Scalability of the Solution	The quantity of sensors allowed these IoT-based systems to successfully simulate a large-scale smart agricultural setting, but the network's influence was a crucial and unexpected component. • We estimate that there will be fewer sensors due to the cost and size of the farms.