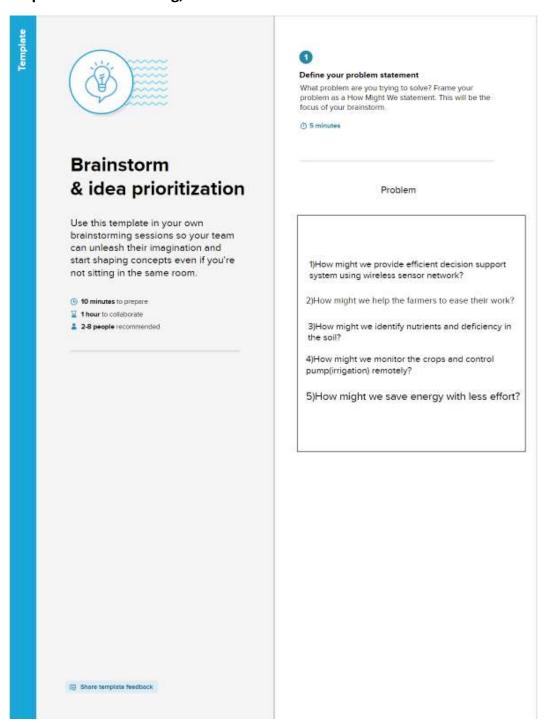
# Ideation Phase Brainstorm & Idea Prioritization Template

Date	18 September 2022
Team ID	PNT2022TMID52856
Project Name	SmartFarmer - IoT Enabled Smart Farming Application
Maximum Marks	4 Marks

Step-1: Team Gathering, Collaboration and Select the Problem Statement



#### Step-2: Brainstorm, Idea Listing and Grouping



#### Brainstorm

Write down any ideas that come to mind that address your problem statement.

(†) 10 minutes

## Ranga Krishna Prasadh H

#### Team Lead

Can identify nutrient levels and deficiency in the soll using sensors and intimate the farmer about the counter action required.

Can use GSM module for transferring the data from the edge device to the cloud database. Controlling water pump remotely through mobile app using relay, microcontroller and api key.

Machince learning can be used to analyse crop growth and predict the harvest time.

## Sathish P

Adding an artificial intelligent system to predict the production of goods.

The Real time data analyzer could be connected to the clatabases to obtain the results. Using the App, the farmer can control the water pump through various options based on the requirement.

The CCTV cameras, infrared cameras, weather monitoring systems can be used to monitor the farm.

## Priya Dharshini C

Monitering animal movements using sensors/camera and preventing them from entering the field Notification could be sent to farmer's phone about environmental conditions and water levels of the crop field with the help of an App.

The LoRa technology can be used to transmit sensor readings from the device and update the data in the cloud. Prediction of water scarcity/drought situations and forewarning the farmer with the aid of Al

## Vishalini A J

Control irrigation, saves water using GreenIQ smart sprinklers controllers Monitor the water tank level in real time to avoid scarcity and make the irrigation process more efficient

Data can be collected from environment using sensors and sent to cloud database to monitor the climatic condition Soil sensors measure soil moisture, temperature ,pH and electric conductivity enabling farmers to approach each crop's unique needs individually



#### Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

① 20 minutes

#### Awareness

Should intimate the recommended chemical levels in the soil for crop growth.

Notify the farmer of any changes in weather conditions.

Should inform the farmer about the soil's suboptimal moisture

## level

## Report

Alert messages in case of abnormality in the parameters and suggestion of ideal counter actions

Display details analysis of the sensor data in the form of graphs/ charts and the implication of current readings

Notify the farmer about the weather conditions, fertilizer requirements, how much water the crops will need to be provided with.

## **Data Analysis**

Based on scientific data, determining the minimal water/moisture level in the soll needed by the specific type of crop sowed

Determination of chemicals level in the soil required by the particular variety of crop sown based on scientific data

Recommedation of suitable crop variety to be sown based on environmental conditions determined with the help of sensor data

#### Sensor

NPK sensor Soil moisture Temperature sensor pH sensor Rain sensor Humidity LDR

#### **Actuations**

Climatic condition can be monitored with the help of rain sensor,LDR,temperature sensor and notify the farmer incase of emergency

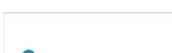
and rain sensor readings appropriate amount of water can be supplied to the field using relaywith water pump

Based on NPK,pH chemical nutrients and acidity of the soil can be Based on soil moisture level determined and suitable action can be taken

#### Alert

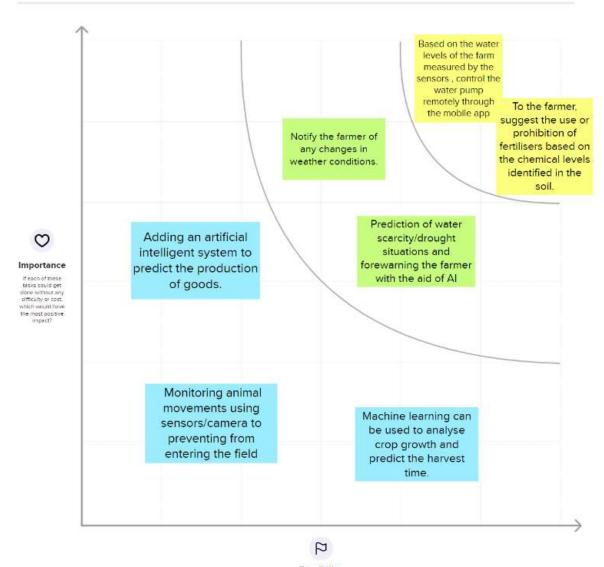
Notification is shown in farmer's phone using Wi-Fi about environmental condition, health and water levels of the crop field

### **Step-3: Idea Prioritization**



Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

@ 20 minutes



Feasibility

Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)