


## Ideation Phase

### Brainstorm & Idea Prioritization Template

Date	27 October 2022
Team ID	PNT2022TMID52180
Project Name	IoT based Smart Crop Protection system for Agriculture
Maximum Marks	4 Marks




Brainstorming **Brainstorm & Idea Prioritization Template:**

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




## Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

 10 minutes to prepare  
 1 hour to collaborate  
 3-8 people recommended

**Before you collaborate**

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

 10 minutes

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**1 Team gathering**

Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

**2 Set the goal**

Think about the problem you'll be focusing on solving in the brainstorming session.


**3 Learn how to use the facilitation tools**

Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#) →

**3 Define your problem statement**

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

 5 minutes







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**How to**

How might we [your problem statement]?

**Key rules of brainstorming**

To run an smooth and productive session

-  Stay on topic.
-  Encourage wild ideas.
-  Defer judgement.
-  Listen to others.
-  Go for volume.
-  If possible, be visual.

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

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### Brainstorm

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

🕒 10 minutes

#### TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

Sharmini.S

Monitoring environmental factors is the major factor to improve the yield of the efficient crops

lot are applicable in various methodologies of agriculture

Estimates crop water requirements

Detecting animal entry in the farm

Aiswarya.A

Internet of things is used with IoT frameworks to handle and interact with every data and information

The level of water is maintained by the sensor in the tank

Water level is managed by farmers both manually and automatic using mobile application

Monitoring humidity and temperature

Nanthini. N

Monitoring water level in the tank

Facilitates even distribution of labour

Maintaining physical and chemical properties of soil

Encouraging microbial activity

Thasleema. J

Crop protection combines strategies, tools and products that protect against various pests

The components required is Arduino UNO, NodeMcu,LCD Display, Flame sensor, PIR Sensor

decrease farm input requirements

crops in farms are ravaged by goats, cows,birds

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## Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

🕒 20 minutes

### TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

## PROTECTION OF CROPS

Crop protection by using modern technologies allow farmers to keep plants healthy and achieve stable and high fields.

The role of crop protection is to efficiently control the residual harmful species, with minimal use of selected pesticides.

The importance of crop protection in agriculture lies in conserving bio diversity and nutrients in the earth by optimizing the resource used

Avoid mechanical soil disturbance and maintain or improve organic matter during rotations until reaching an equilibrium level.

## SENSORS

The air temperature and humidity sensor can monitor the air temperature and humidity changes in agriculture area.

Electro-chemical sensors are used to monitor and analyze the soil quantity and measures the pH level of the soil.

Location based sensors like GPS sensors and GIS sensors can help farmers to get greater insights on cultivable lands.

Smart cameras which helps to maintain the overall productivity of the crop and reduce the occurrence of pesticides.

## MERITS

Crop protection helps to keep plants healthy and maintain sustainable crop yields.

An ideal crop rotation helps in controlling insects, pests and diseases and also controls weeds in the field.

## IMPORTANCE OF CROP PROTECTION

Reducing pests and creating the most adverse conditions for their adaptation.

Reduction in market value

Crop protection combines strategies, tools and products that protect against various pests.

The advantage in crop protection involves decrease farm input requirements

Increased production costs.

Source of transmission of other crop disease.

### Step-3: Idea Prioritization

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#### Prioritize

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

