PROJECT DESIGN PHASE- 1 PROBLEM SOLUTION FIT

TEAM ID : PNT2022TMID26689

PROJECT DOMAIN : INTERNET OF THINGS

PROJECT TITLE : IoT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE

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Problem-Solution fit canvas 2.0

Purpose / Vision

1. CUSTOMER SEGMENT(S)

CS

- Crop Management
- Precision Farming.
- Data Analytics
- Remote monitoring.
- Robotic System.

6. CUSTOMER CONSTRAINTS

CC

- Low availability of improved hybrid seed.
- Lack of water constraints.
- Automatic process reduces the time and labour cost.
- Low profitability and efficiency of fertilizer
- Weeds can cause significant reduction in crop field if not controlled.

5. AVAILABLE SOLUTIONS

AS

- The soil quality can be continuously monitored by the farmers to manage long term crops.
- Sensors provides location of crop mapping helps the farmers to identify the crops easily
- Effective weed dessication and seeding must be done to increase the yield of crop.

2. JOBS-TO-BE-DONE / PROBLEMS

J&P

- To manage and track the location of GPS by using IOT.
- Automatics sprinklers systems must be implemented.
- To monitor soil,pest,insect attacks in the fields.
- By using sensors we can gather real-time data about the health of the crops and herds, which is helpful in making better decisions for the farmers..

9.PROBLEM ROOT CAUSE

RC

- The crops are being ravaged by animals leads to huge loss for farmer.
- Another problem is small land fragmented land-holdings.
- By using,checimals the soil quality is diminished and leads to annual loss.
- The crops are seriously affected due to the climatic changes.

7. BEHAVIOUR

BE

- To predict the soil ,Humidity ,Temperature ,ph,Cattle ,Fertilization Monitoring so many things are Benefical here.
- Easier Recording and Reporting,Providing data to Farmers continuously.
- Everything is digitalized soo it is faster and easy to use without human intervention
- In addition to agricultural use, they can also be used for pollution and global warming

3. TRIGGERS

TR

- Farmers are able to recognise the issues and work without anyone help.
- They are equipped with wireless chip so that they can be remotely controlled.

4. EMOTIONS: BEFORE / AFTER

EM

BEFORE : Fear of smart farming, High Cost

AFTER : Cost Effective , Accuracy

10.YOUR SOLUTION

SL

- Smart farming can make agriculture more profitable for the farmer.
- Decreasing resource inputs will save the farmer money and labor, and increased reliability of spatially explicit data will reduce risks.
- Weed dessication and growth control must be concentrated effectively..

8.CHANNELS of BEHAVIOUR

CH

8.1 ONLINE : Data Analytics helps to give data to farmers systematically. By using IoT the data can be stored safe and secure.

8.2 OFFLINE : The proposed system contains different types off sensors to test and guarantee the Crop quality based on the factors such as pH level, temperature,humidity,pest,soil fertility.