

IoT based SMART CROP PROTECTION

PROJECT PHASE 1

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- IDEA
- Novelty
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- Business Model
- Scalability of solution

PROBLEM STATEMENT

In India, Agriculture sector is shrinking day by day which disturbs the eco system' production capacity. There is a burning requirement to resolve this problem in the area to reestablish vitality and place it back on higher progression. farmers are facing issues in detecting disease in crop and protecting the farm from the animals. The unavailability of manual labors and high cost involved cause fewer margins to the farmers. Sometimes manual maintenance leads to errors and it take a large amount of errors.

IDEA

When farming is changed to smart farming, it can be good for yield in many ways like protecting from animals and birds and monitoring the crop by analyses the temperature, humidity, soil moisture and the machines like sprinkles can be controlled through application.

Priority 1:

Protecting:

Crops on farms are many times ravaged by local animals like buffaloes, cows, goats, birds etc. This leads to huge losses for the farmer. Elephants and other animals coming into contact with humans, impact negatively in various means such as by depredation of crops, damaging grain stores, water supplies, houses and other assets, injuring and death of humans.

A Smart Electric Fence is a simple user-friendly idea to provide more security to the farmlands and the farmers by detecting the unwanted activities around their farms, in particular by wildlife and also from theft. It consists of a micro-controller based system for detecting the activities around the fenced area with GSM modem for acknowledging those activities around the farmland. The GSM modem sends text message to the farmer indicating the location on which the impact has been occurred. Also detects the kind of wildlife which is giving an impact on the fence by detecting the height of the animal.

Priority 2:

Monitoring:

Farmers cannot be physically present on the field 24 hours a day. Also, the farmers may not have the knowledge to use different tools to measure the ideal environmental conditions for their crops.

IoT provides them with an automated system which can function without any human supervision and can notify them to make proper decisions to deal with kinds of problems they may face during farming.

It has the capability to reach and notify the farmer even if the farmer is not on the field, which can allow farmer to manage more farmland, thus improving their production. Now, IOT technology helps to monitor and analyze the basic parameters of the soil based on the sensing like temperature, humidity, soil moisture.

Priority 3:

Controlling:

In particular, the agricultural machinery service can be installed a remote monitoring terminal on large-scale intelligent agricultural machinery and developing the related mobile application software and server software.

IoT technology was applied to conventional agricultural production to provide useful information such as on the management of agricultural machinery operations, real time equipment management of agricultural machinery, and agricultural machinery operation and control needs. With these systems, agricultural productivity can be improved as field conditions, and operating conditions of agricultural machinery are monitored remotely.

n o v e l t y

IOT Based Crop Protection System against Birds and Wild Animal Attacks
Smart crop protection system from wild animals using ArduinoSmart Crop Protection System from Animals and Fire using Arduino uno sensors using some IOT techniques to increase crop's growth

(Example : soil moisture checking sensors, Drones for fertilizer supply, Weather predicting etc..)

S o c i a l i m p a c t

The main aim of this project is Protect the crops from animals , birds & insects , then improve the growth of agriculture in next level and increase the wealth of farmers.

B u s i n e s s M o d e l

Sole proprietorship & All type of farmers get high profit by implementing IOT system in their farming place.

Increase the rate of production & make good profit.

Avoiding many problems by implementing IOT system in their farming

(Example : Fire accident, animals , birds & insects attack maintaining soil condition in good manner etc..)

Needs less manpower to maintain Crop's field

It is single time investment.

Scalability of solution

In existing system ,the smart farming can be achieved by support vector machine, crop prediction, machine learning.

Challenges related to scalability in smart farming fall into two categories:

capacity & performance.

Scaling capacity refers to the ability to add new nodes or resources to the system .

Scaling performance is the ability to improve performance or to keep the performance identical while expanding capacity.