KISAN MITHRA

- AN AUTOMATED FARMING BOT

PROBLEM STATEMENT

We have a labour problem in agriculture and also cultivation takes much time and manpower.

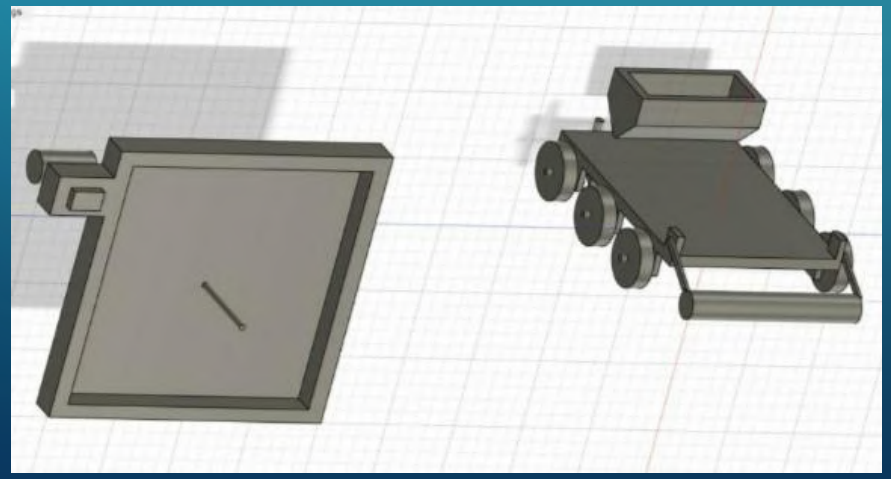
SOLUTION

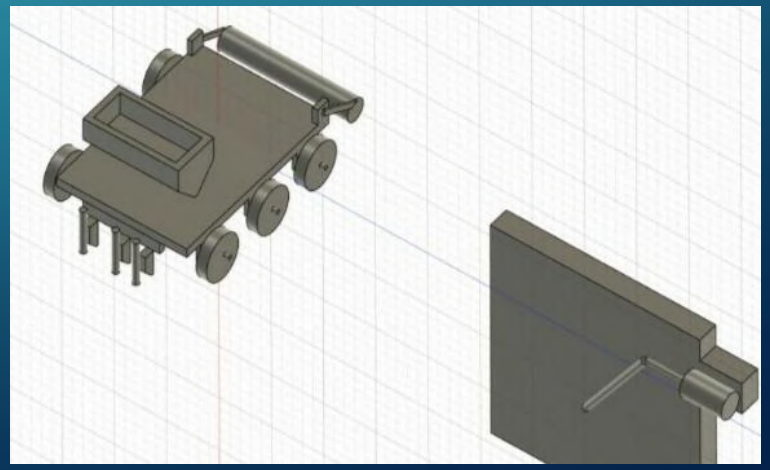
The solution of our problem is Automated Farming Robot which is capable of performing key activities of farming such as:

- Ploughing
- Seeding
- Wireless communication
- Irrigation system
- Weather forecast

WORKING

- The main mechanism in our bot is Ploughing in land , Seeding and watering in land according to the moisture levels .
- Bot consists of Rover and Land .
- Our robot uses speed sensor to calculate the distance and sets the perimeter of the land and move in the form of lanes to cover the whole land area.



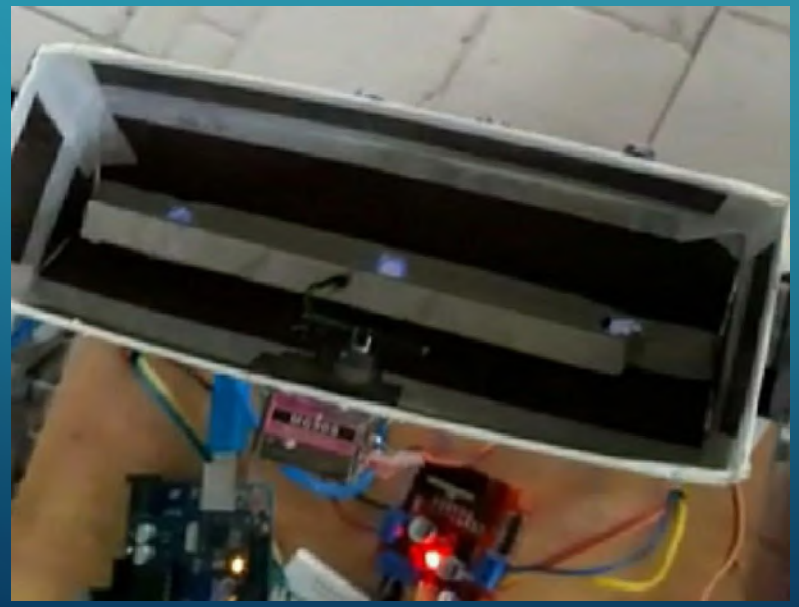


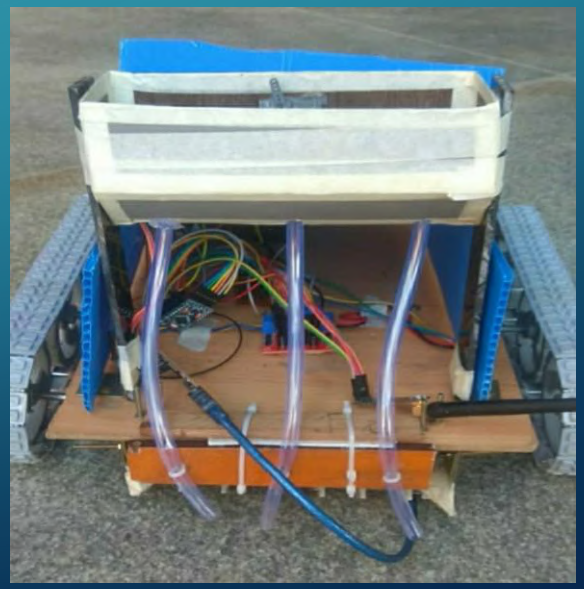
WORKING

- *For ploughing mechanism, rover consists of ploughs on front and back side*
- *On front side, we used rolling plough with spikes to break the land*
- *On back side, we can use actual ploughs to smoothen the land*

WORKING

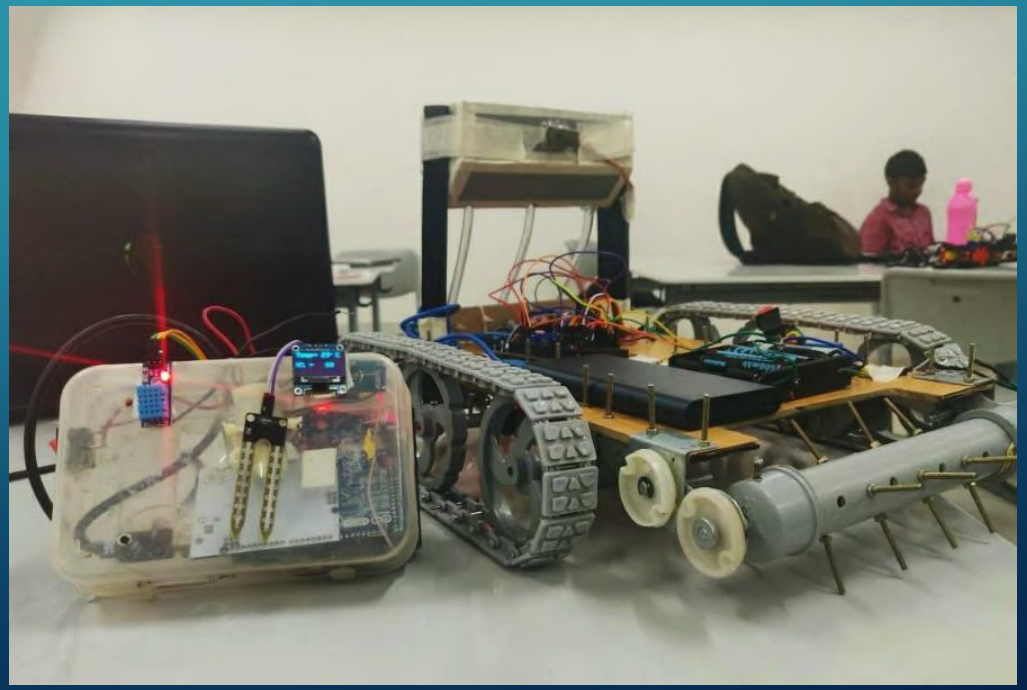
- For Seeding, seed drill mechanism shall be used.
- We used a servo motor for opening and closing of valves to allow the passage of seeds behind the plough



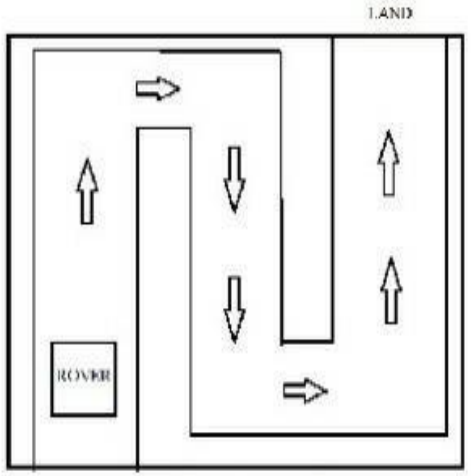


WORKING

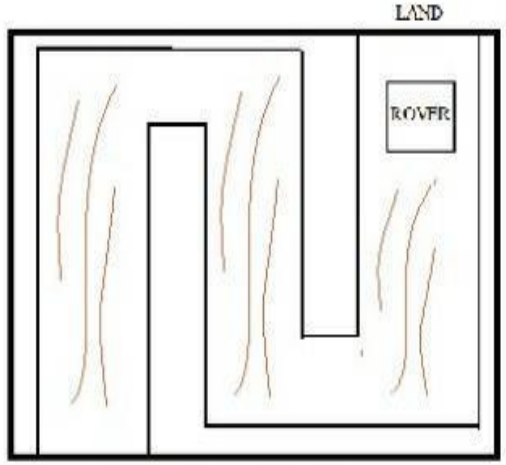
- *There shall be a weather monitoring system to monitor temperature and humidity at the land area*
- *Water will be supplied according to moisture levels in land by Watering motor*



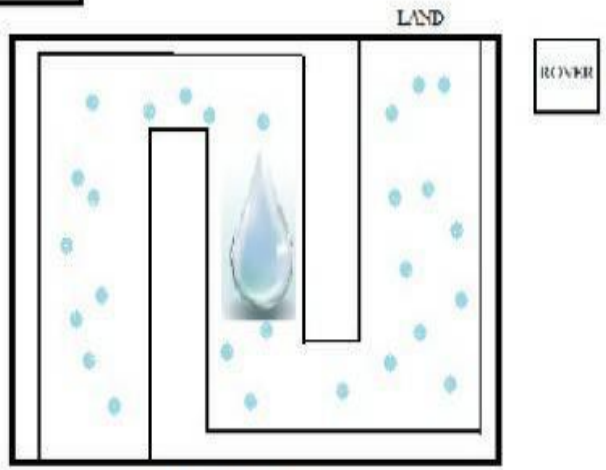
OVERVIEW OF KISAN MITHRA



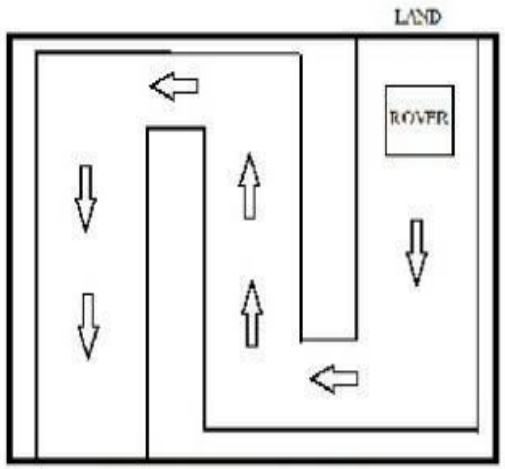
STAGE1 : Initial positions



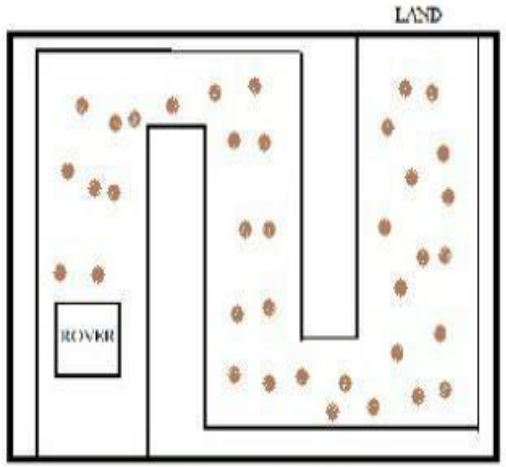
STAGE2 : After Plough



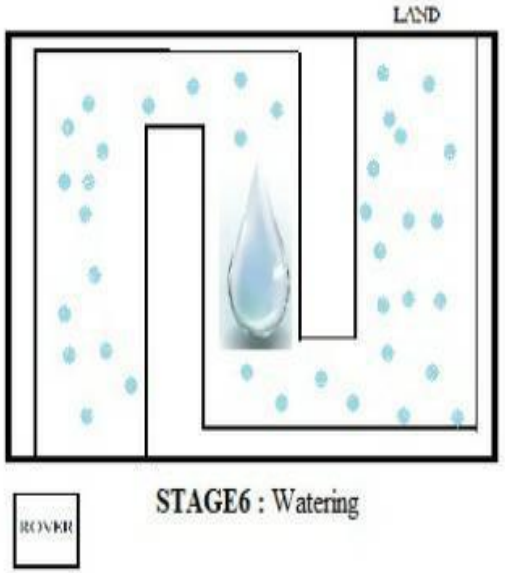
STAGE3 : Watering



STAGE4 : Seeding path

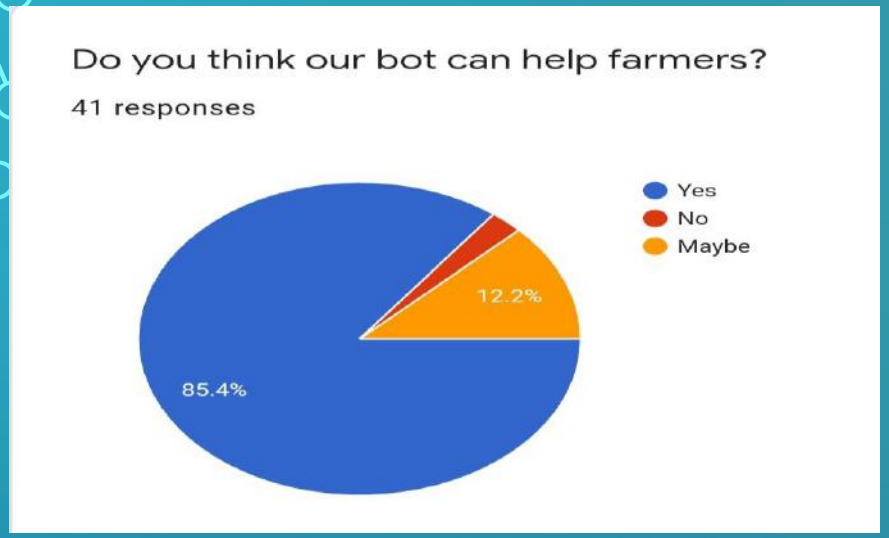


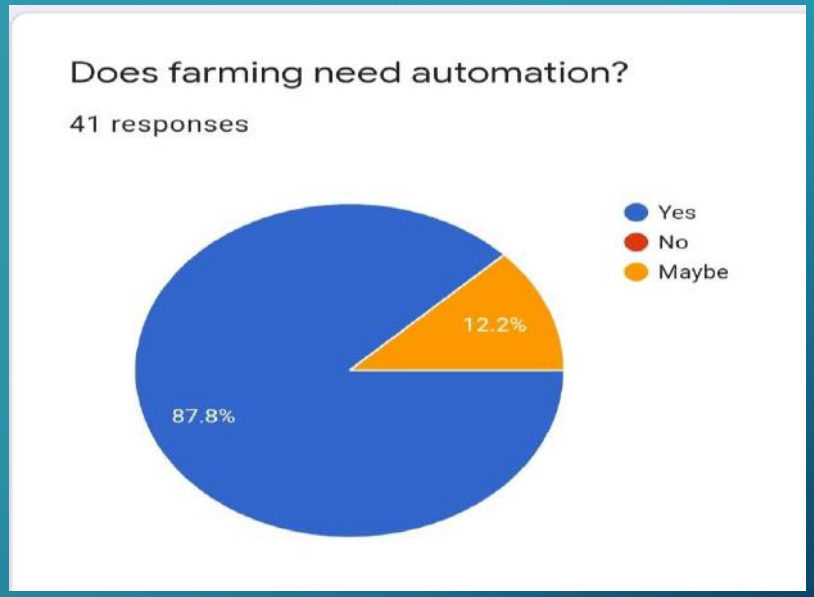
STAGE5 : After seeding

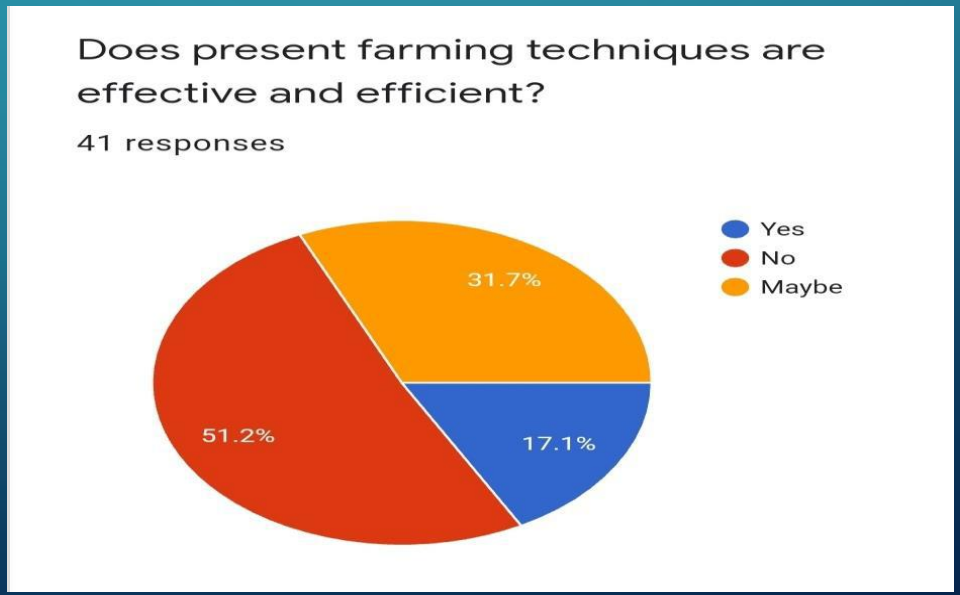


STAGE6 : Watering

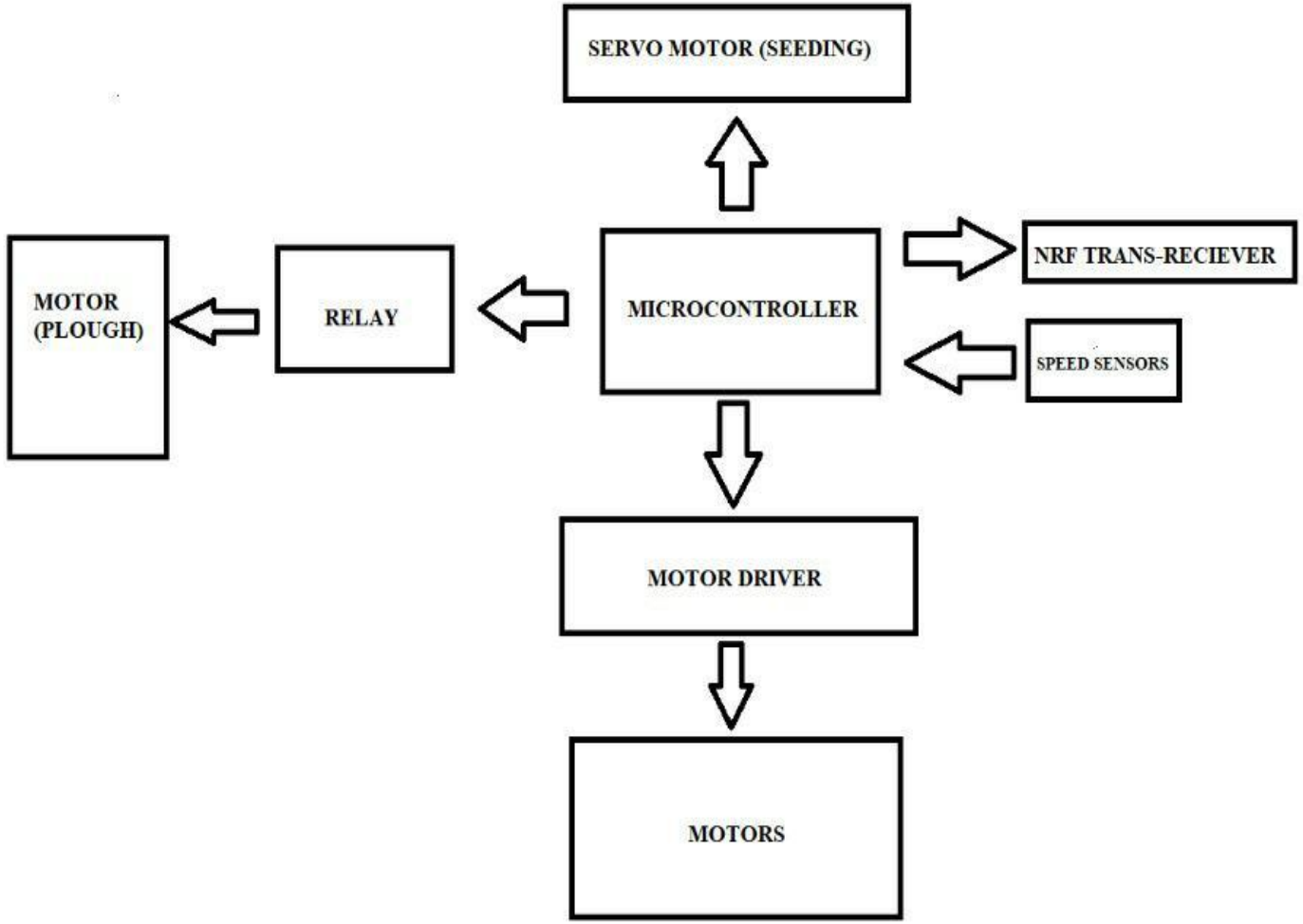
SURVEY


Do you think our bot can help farmers?
41 responses
Yes
No
Maybe
12.2%
85.4%

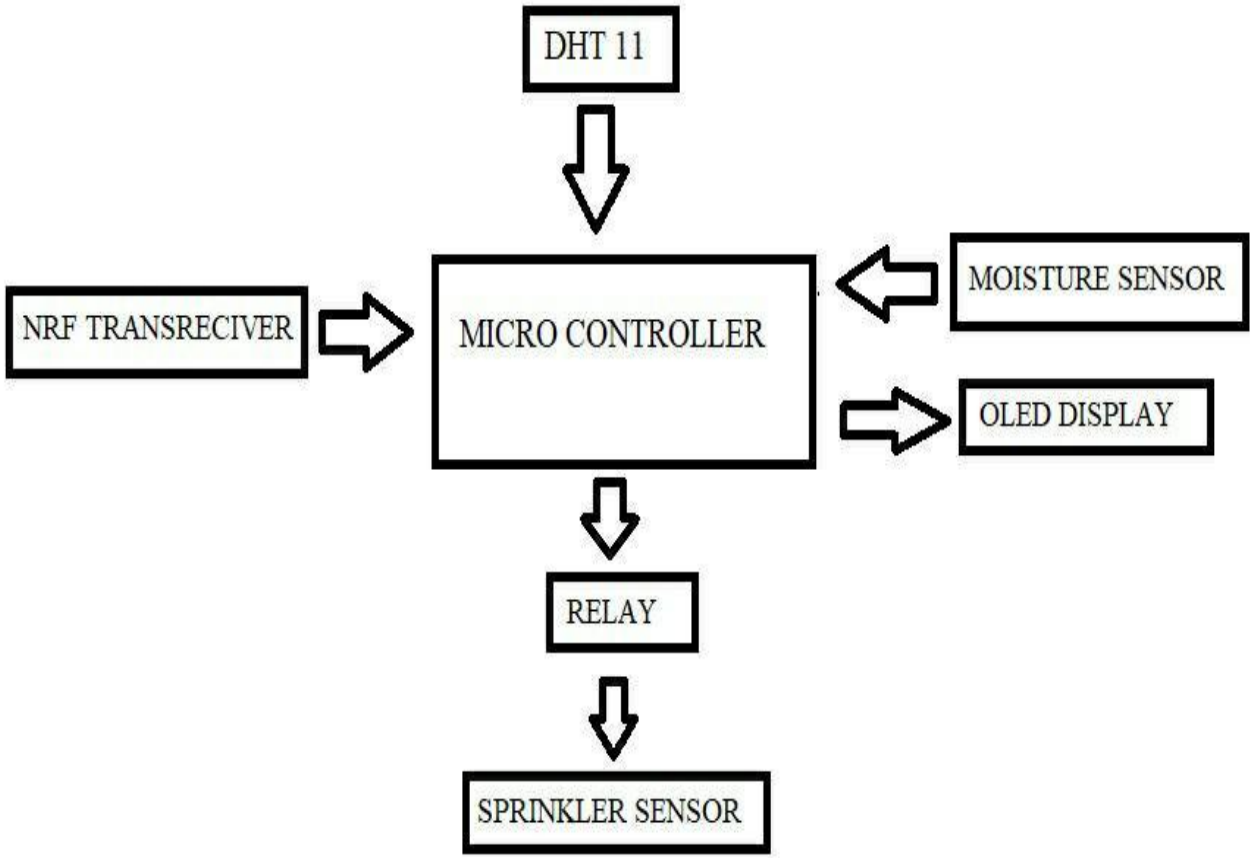

Does farming need automation?
41 responses
Yes
No
Maybe
12.2%
87.8%


Does present farming techniques are effective and efficient?
41 responses
Yes
No
Maybe
31.7%
51.2%
17.1%

ROVER


SERVO MOTOR (SEEDING)
MOTOR (PLOUGH)
RELAY
MICROCONTROLLER
NRF TRANS-RECIEVER
SPEED SENSORS
MOTOR DRIVER
MOTORS

LAND


DHT 11
NRF TRANSRECIVER
MICRO CONTROLLER
MOISTURE SENSOR
OLED DISPLAY
RELAY
SPRINKLER SENSOR

BUSINESS MODEL CANVAS

Problem

The whole agriculture process takes much time and manpower

Labour scarcity in agriculture

Solution

Developing an Automated Farming system that can perform and coordinate all the operations effectively

Unique Value Proposition

- All terrain Robot
- Minimal manual Intervention
- Coordination of all funtions

Unfair Advantage

- Cost Effective
- Integration of multiple Farming activities

Customer Segments

- Farmers
- Landlords
- Agricultural Engineers

Existing Alternatives

- Driverless Tracters
- Semi Autonomous Tracters
- Automated Irrigation systems

Key Metrics

Number of products sold
Number of Rentals
Revenue generated

High Level Concept

Smart path creation technique for ploughing and seeding

Channels

- Affiliates
- Online platforms

B2B

- Agricultural Automation Industries

Early Adopters

- Medium scale farmers

Cost Structure

Product cost = Rs. 40000/-
Salaries, Promotional Expenses
Transport Expenses

Revenue Streams

10% Revenue from the sale of the product
Rentals,
Maintainance Contracts

COMPETITIVE ADVANTAGE

- Kisan Mitra is an innovative product there are many products like kisan Mitra but not total same.
- In our product we are Embedded all the tasks like ploughing, seeding, watering, and few weather monitoring system.
- There are some other products which does some of this functions but works individually.
- The main features of kisan Mitra is that it's works Autonomously which is not present in any other system.
- It can move freeely in any terrain.

FUTURE ENHANCEMENTS

- *By adding solar rechargeable system.*
- *Planning to protect farms from animals by adding infrared sensor at the boundaries of the farm*
- *By adding harvester to the rover*

CONCLUSION

- *It reduces the work burden of farmers and easy to yield crops with low expenditure and Also time consuming for cultivation decreases by our bot .*
- *It can also be used in hilly areas where farmer cant reach.*