Design Doc Template

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# Introduction

## Summary

This idea is completely useful for farmers .It mainly deals with the weather conditions i.e. like when there are floods and droughts ,due to this there will be wastage of water and it leads to loss of the crop .In order to overcome this we came up with an idea…  
A sensor is to be placed in soil by fixing a normal level of water range required for a crop .

If the water content is more or less a buzzer sound will come .  
If  water content is more ,then water should be collected from fields through a rope way holding a bucket and water should be poured into turbines so that water can be used for generating electricity .  
If water content is less then by using automatic sprinklers water need to be sprinkled over the fields so that there should be no wastage of water.

## Background

The main intension behind this idea is to help farmers.

When floods occurred in Kerala, farmers are majorly affected.

This model is very helpful for the farmers. When floods occur, it collects the excess water and sends it to turbines through ropeways.

# Design Overview

## Requirements

Moisture sensors

Kettle

Ropes

Relay modules

Turbines

Cables

UNO

Buzzer

Sprinklers

Water

Future work

We want to upgrade it by generating electricity through water present in the turbine greater than the minimum level. We also want to connect the working of these sensors to a mobile application to monitor them and to provide employment to the people.

We provide rooms to people to work with the sensors this can be done through wireless communication

Architectural Diagrams

System Diagrams

Moisture Sensors

Maximum

Minimum

Automatic sprinklers

# 

Rope wave

Turbines

# Application Programming Interface

An application is connected to the sensors so that the moisture content can be changed according to the crop and the interface helps us to use which mode of it either the maximum mode or minimum mode .so that the work can be done accordingly.Service Operability

## Key Performance Indicators

In our project the Key Performance Indicators (KPI) are the persons who are operating the sensors.

The performances are calculated village to village based on the type of crop they have cultivated.

## Service Level Objectives

The service level objectives of our project are

Helping the farmers to cultivate more crops

Helping them to store water for future use

To save their crops in drought and flood condition

# Project Overview

## Communication and Tracking

In this project the communication takes place among sensors, sprinklers and the buckets so that it takes the required action and the moisture sensor sends a buzzer sound whenever the moisture content of soil is maximum or minimum.

## Risks

In our project the risks might be due to the following

Working of sensors

Turbine overflow or underflow

Working of sprinklers

Fixing of average moisture level in the sensors

The cable connections…etc.

## Milestones

First, we want to generate electricity

To reduce the number of sensors

## Cost

The cost should be efficient that it should be in such a way that everyone can buy it

It should be in a reasonable way

The minimum cost of the product can be in the range of 4000-5000.