KISAN: SMART FARMING

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As an agricultural country in the main, we need to understand the farmer’s problems in detail like China, India, and Australia. We have to provide food, jobs, and chances of advancement to more than 70 percent of our people who live in the villages, to save water and many peoples dying from poverty, especially farmers. [1]

ABSTRACT: *“If we save water which is being wasted due to usage of bygone irrigation system, we will be able to feed ten times more population than current population”.*

INTRODUCTION

This project aims to solve Indian as well as global agriculture problems faced by farmers in an innovative way, that saves Labour cost and extra water which gets wasted in irrigation, an increase in the production of food in an efficient way. And prevents from water logging, and that same app helps the farmers with agricultural marketing connecting them with the larger consumer market to sell their crops directly to the customer removing the middleman to have high profitability, This same app allows big farmers to lend there machinery to small farmers on an hourly bases, So that farmers can have all the machinery without actually buying them

KISAN: SMART FARMING:

Targeted Problem

On average, farmers around the world account for 70% of all water that is consumed annually. Of that 70% used by farmers, 40% is lost to the environment due to poor irrigation systems, evaporation, and overall poor water management systems excessive use of water results in lower yields and adverse environmental effects such as soil salinity and waterlogging. The main reasons for the poor yields are improper irrigation management and waterlogging. [2]

According to the World Resources Institute, an environmental think tank, inside the 1.3 billion tons of food wasted every year worldwide is 45 trillion gallons of water. This represents a staggering 24 percent of all water used for whole agriculture. [3] And farmers are also unable to sell their crops direct to the customers they sell it to the middle Men At very low cost, which causes them to have low profitability and capital expenditure on crops, cause they don't have reached to the actual consumer market. Their problem of not knowing the best techniques and methods of farming and not having the latest machines and equipment. It is because they are uneducated and are not in contact with those well-informed about these, has also been a big huddle for our agriculture industry. [1] Over 20% of our farmers live below the poverty line. [4]

Innovations/Technology Used

We use Geolocation technology to identify the area and the boundaries of the field to our on, using smart sensor Technologies we capture all the physical conditions of the farmland, We use machine learning algorithms to evaluate received information according to the crops need and give commands to the IoT controlled machineries which operate wirelessly and can be controlled through phone.

Working:

Agricultural Marketing

This App removes middle man and connects farmer to consumer directly, That means two things: one, Farmer gets highest profit possible without going out to sell, and two: our consumers get the highest quality crops directly from farms at an affordable cost, Which can increase farmers profit as high as 500% on every trade he does, By doing they can most probably get rid of their poverty, provided that adequate amount of farmers and consumers are using the app.

Irrigation

A whole IoT (Internet of things) based mechanism will be provided to farmer to get all physical measures on “*KISAN APP”*, For Instance sensors like Soil Moisture Senor, Humidity Senor, Smoke detector etc., Will be added to the mechanism, On based of this data collected from the farmers field app will give parameter like time for which we have to irrigate the field, amount of water etc. Through this farmers will be actually able to save water and grow more crops, and this will also prevent their field from waterlogging and salinity.

Modern Techniques

This app has a section by title *“KAM KI BAAT”,* which educates farmers for new farming techniques and tells them about farmers helping schemes imposed by government, So that they can take advantage of these schemes and new farming techniques to grow crops.

Soil

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Many farmers fail to recognize the reasons of the soil not being able to grow crops for example some reasons like erosion, compaction, nutrient imbalance, pollution, acidification, water logging etc. Affect the soil, but this app has a feature which will detect the major soil related issues by clicking a clear photo by phone, a machine learning algorithm will estimate the problem through the texture of the soil in the picture.

Cost/Expenditure

For setting this mechanism in the farming field this will cost somewhere from hundred or max to max a thousand dollar and its maintenance cost will also be very less and it will just be a onetime investment for farmers so it's totally feasible and sustainable cause there will be no aspect of this mechanism affecting climate in a bad way, And as estimations suggests its return on investment will cover the cost in just a year.

Conclusion:

Estimations

If we talk about farmers wage it depends upon many things but referring to an ideal situation where farmers utilizes all features of the app and project then his/her wage will be increase 100%-200% or 2-3 times for cause, Middlemen make an astonishing 100%-200% margins on farmers produce.[5] This profit of farmers after using the app can go as high as 500% or five times and talking about crops they will also be healthier but again it depends up how farmer uses the app.

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6. Link to the prototype of **"KISAN"** app: https://bit.ly/2XuwmKR