AgroAssist

**Business Idea:**

To offer an digital device that screens ecological circumstances and conditions through different sensors and provides the ideal yields that can be developed in that specific circumstance or indicating what must be changed for better development of specific harvest.

The item is associated with a versatile application or site that contains a wide range of readings. It additionally gives automated irrigation system framework relying upon the crop conditions. Through the application they can purchase anything at a less expensive rate like seeds and composts. Tips can be acquired and be instructed about agrarian strategies.

**Purpose of Idea:**

To profit the farmers and help the agriculturist in developing the yields. To enhance the financial status of the agriculturists hence profiting the development of the nation.

**Market Analysis:**

Agriculture plays a vital role in India’s economy. Over 58 per cent of the rural households depend on agriculture as their principal means of livelihood. It is one of the largest contributors to the Gross Domestic Product (GDP) of our country.

Market Size:

With an annual output of 146.31 MT, India is the largest producer of milk, accounting for 18.5 per cent of the total world production. It also has the largest bovine population. India, the second-largest producer of sugar, accounts for 14 per cent of the global output. It is the sixth-largest exporter of sugar, accounting for 2.76 per cent of the global exports. India is a leading country in coconut production and productivity in the world, with annual production of 2,044 crore coconuts and the productivity of 10,345 coconuts per hectare as on 2015-16. Spice exports from India are expected to reach US$ 3 billion by 2016–17 due to creative marketing strategies, innovative packaging, strength in quality and strong distribution networks. The spices market in India is valued at Rs 40,000 crore (US$ 5.87 billion) annually, of which the branded segment accounts for 15 per cent.

Government Initiatives :

Given the importance of the agriculture sector, the Government of India, in its Budget 2016–17, planned several steps for the sustainable development of agriculture.

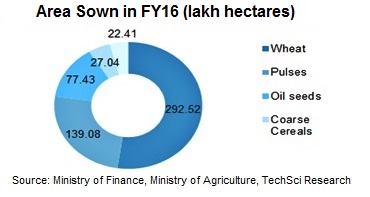
Budget 2016-17 proposed a slew of measures to improve agriculture and increase farmers’ welfare such as 2.85 million hectares to be brought under irrigation, Rs 287,000 crore (US$ 42.11 billion) grant in aid to be given to gram panchayats and municipalities and 100 per cent village electrification targeted by May 01, 2018. The government has set an ambitious target of producing a record 270.1 MT of foodgrains in 2016-17, 7 per cent higher than the 252.23 MT of production estimated for 2015-16.

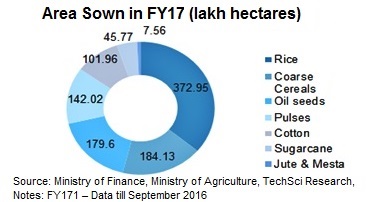
The Government of India has started work on 99 major and medium irrigation projects, slated to be completed by 2019. These projects will bring 7.6 million hectares of land under irrigation in some of the most drought-prone regions of India.

Steps have been taken to improve soil fertility on a sustainable basis through the soil health card scheme and to support the organic farming scheme ‘Paramparagat Krishi Vikas Yojana’. Other steps include improved access to irrigation through ‘Pradhanmantri Gram Sinchai Yojana’; enhanced water efficiency through `Per Drop More Crop’; continued support to Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and the creation of a unified national agriculture market to boost the incomes of farmers.

Prospects:

The agriculture sector in India is expected to generate better momentum in the next few years due to increased investments in agricultural infrastructure such as irrigation facilities, warehousing and cold storage. Factors such as reduced transaction costs and time, improved port gate management and better fiscal incentives would contribute to the sector’s growth. Furthermore, the growing use of genetically modified crops will likely improve the yield for Indian farmers.





(References: <http://www.ibef.org/industry/agriculture-india.aspx>)

Our Product:

The market is currently flooded with products like tractors, ploughing machines and threshers which make manual labour easier. But there is a lack of a digital monitoring system to monitor the conditions which are optimal for crop growth.

Analysing the environmental conditions and having accounts of their crop growth through every stage right from seeding to harvesting, the farmers will be able to increase their yield significantly.

Since the product will be easy to use and can be accessed without difficulty by even illiterate farmers, it will appeal to our target consumers and gain popularity in the agricultural sector.

These techniques of Smart Farming can increase the yield considerably and bring about radical changes in the agriculture industry of our nation, increasing the average yield of kg/hectare of crop grown.

Competition/Threats:

Indian farmers are yet to use technology on a day to day basis, and using devices to monitor the environmental conditions would be a new mountain to scale for them.

But our product promises to be extremely user friendly and efficient, hence eliminating that threat.

The ultimate aim of the product would be to market it to the government as an easy tool which can be used by the farmers. Though the government has been deploying multiple tools for the farmers, it is not efficiently executed or deployed to the farmers. This tool can make monitoring the crops easier and also intrusion detection systems can keep their crops safe from pests.

Summary:

As one of the fastest growing and most prominent factors of the Indian Economy, a new technology that can make the work of farmers more efficient is of great importance today.

The market today demands for technological improvement in the field of agriculture, and with the right marketing, this product can undoubtedly make farming efficient and cost effective.

**Product or Service description:**

The product contains the following various sensors & hardware components to monitor the environmental conditions:

* Humidity Sensor
* Temperature Sensor
* Rain Sensor
* Wind velocity Sensor
* Sunlight Intensity Sensor
* Accelerometer to detect intrusion.
* Buzzer alarm to substitute scarecrows

In addition to this the product also contains an automated irrigation system that can automatically irrigate the crops based on the water requirements.

It contains Machine Learning solutions to provide a statistical analysis of what crops can be grown. And what has to be changed to grow the particular crop.

The product also contains facilities to the farmers to obtain information on efficient agriculture practices and tips.

**Team Description:**

Our team consists of four technically competent members who are well versed in Internet of Things, Web Technologies, Programming languages like Python, NodeJS, AngularJS, Java, Android, C#, JavaScript, Unity, SQL, Web Frameworks like Bootstrap, Polymer etc.

**Technology/resources required for idea execution**:

* Digital aid like Smart Phones/Computer/Tablets
* Machine Learning Model for data analytics
* The following sensors:
  + Humidity Sensor
  + Temperature Sensor
  + Rain Sensor
  + Wind velocity Sensor
  + Sunlight Intensity Sensor
  + Accelerometer to detect intrusion.
  + Buzzer alarm to substitute scarecrows
* Servers for Backend like Node Server
* Database Engine like MongoDB