MULTITASKING ROBOT AND WEB APPLICATION FOR FARMING

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ABSTRACT: Agriculture is the primary source of livelihood for about 58% of India's population, plus it is the backbone of the Indian economy. Accordingtothe survey conducted by the (NSSO) National Sample Survey Office periodic surveys, 34 million workers left the sector between 2004-05 and 2011-12. The shortage of farm labour's and unaffordability of high end equipment's are the major setbacks faced by small-scale farmers, on which the country's traditional crops like wheat and rice got a hard hit. Secondly the high

end equipment's which replaces the farm labour's and some of which is either built only for large scale cultivations or it can't be affordable. So on considering these setbacks, a low cost autonomous robot is designed and built for small scale farmers, which is capable of doing various agricultural tasks. Even though we live in modern world, agriculture is still lagging in the smart sector. So, we have also created a web-application which help farmers in yielding fund for initial investments, it is basically an e-commerce platform for selling the agriculture products based on their profit and loss faced thought the harvesting period. A biowaste collector which collects the domestic wastes from the people and convert it into bio-fertilizer which is a replacement for chemical fertilizer. All these three features are incorporated into a single web application. These features are maintained by a HUB which is created in each locality to maintain stock, farmers assistant, delivering of products. Thusit creates employment opportunity.

Keywords: Agriculture Robot, Agrobot, crowd-funding, bio-fertilizer.

1.INTRODUCTION

We can witness the advancements of science and technology every day in every field. But farming in India is still lagging in technology. Modern equipment's machines and instruments for farming are meant for large scale farmers. For small scale farmers these equipment's are costly and are unaffordable. Hence modernisation for agriculture for small scale farmers can help in upliftment of small-scale farming. An agricultural robot is built, which is of low cost and uses renewable energy as a power source. They are made specially for small scale farmers in order to help them. Along with this, a web application which helps farmers, right from fund to selling products has been developed.

This kind of modernisation is difficult for farmers to adapt. Hence a HUB in each locality to guide farmers and to update their stocks in the website. A crowd funding or investment platform is created for farmers for their initial needs. Once harvesting gets completed, the money along with profit can be handed over to the investors. Also, making modernisation in agriculture improve employment opportunities in India.

2.Multitasking Robot and Web Application for Farming

Hardware: We have built an autonomous vehicle which helps the farmers can do various agricultural task simultaneously which are ploughing, seeding, watering, levelling and it spray pesticides also and finally harvesting, these tasks follow the conventional way of farming. The moist and temperature sensors are used to monitor the moisture content of the soil, measure humidity and monitor temperature on thought of saving water and controlled flow rate. Also, we have designed our own power control that is provided with power supply from solar, battery, electricity and HHO cell. Our robot is a multipurpose robot which is also less time-consuming.

Software: Add on to this we have developed an android based cloud funding application which is named as "UZHAVAN FUNDING". The key objective is to implement funding concept that in a supportive way which as a investment. The most captivating part is that the person who donates or invest through this application and that can be used by the farmers to buy raw materials and fertilizers and once the harvesting is done depending on the profit obtained the investors get their money back and the profit goes to the farmers, so that both people and the farmers can be benefited. Through this application we have also created a commodity platform for farmers to sell their products, hence this produces a direct link the farmers and the consumers. Therefore, as the result farmers can be greatly profited.

Throughout the years, farmers have taken over the advantages on chemical fertilizers to increase the production of crops to meet the demands over the years, continuous usage of these chemical fertilizers have proven to be harmful to all forms of life. On thought on this hazardous exercise, we have ideated to collect the domestics wastages to produce "Biofertilizers".A "HUB" will be created in the vicinities so these hubs will act as a information center, where the people in the hub can guide the farmers regarding the process. From the hub the "Agrobot" can be rented for least amount to the entire period of cultivation.Then depending on the profit and loss obtained throughout the harvesting period the farmers can decide the cost of the cultivated crop

which can be vended through the E –commerce website or via the HUB.All put together which reduce the expenditure for the farmers throughout the time of cultivation.

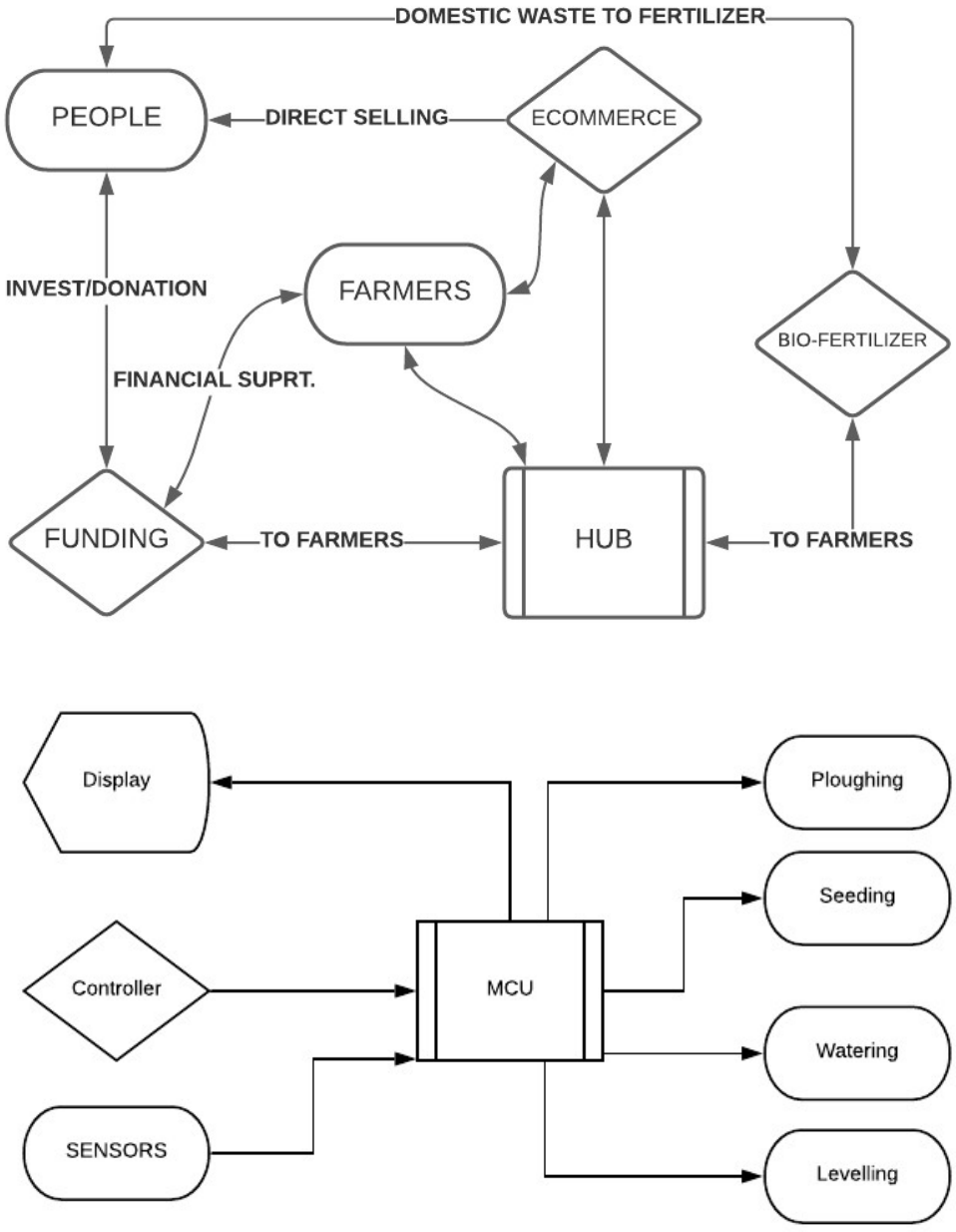

Figure 2. flowchart of the agricultural robot

4. Acknowledgments

The advantage of implementing the proposed system in the market may have various benefits like, Farmers committing suicide due to their financial problem gets reduced. Usage of the web application creates a direct

interaction between farmers and consumers.By collecting the domestic wastes from the household and processing it into a bio fertilizer this process can be encouraged by giving the proportional amount for the weightage of the domestic wastes that has been donated by each individuals.Improvises the usage of bio fertilizer which are economical and are environmental friendly on comparing them with the chemical fertilizer.Water wastage can be controlled by using the moist and soil sensor. On the whole the proposed system encourages on improvising agriculture in our country.

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