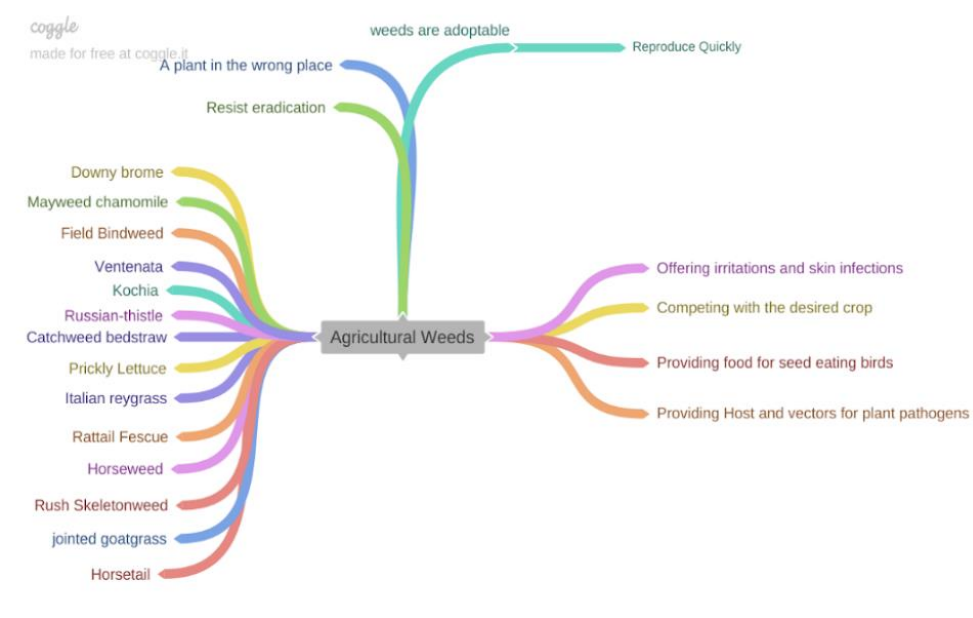# Agricultural Weeder

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Deep

• The landform status, conventional techniques used by the farmers and the issues faced by them by the conventional techniques are analyzed.

• Based on the resource from them, the mind map for the weeds is formed and the first image is the mind map formed

• After understanding the problem and the analysis, the prior art designs are analyzed

- At the end of this survey, the design is framed for the implementation

Objective

•   The problem statement in this project is, there is a need of advancement in the technology of the weeder. By considering this, the design of weeder can be impoverished by making some quality changes to its blade and to the outer structure.

•   Our Indian sub-continent is enriched with various landforms, soil compositions and each landform have its own weed growth. To satisfy each and every landform, the paraments such as strength and mass of both blade and structure of the weeder should be customizable.

•   In the paper, the weeder is automated and the acceleration of the motor can be controlled based on the soil type and nature of the weeds in the agricultural land.

•   The design will be focused to be simple which can used to avoid the unwanted counter parts. The blade is designed in such a way to remove the weeds completely from the agriculture land. Development of Embedded system in the weeder which can collects soil data such as nitrogen, moister, sub nutrients etc. in the pre weeding stage.

•   So that framers will get a clear picture about their land condition which helps them to add exact value of supplements to their lands and the wastage of supplements also will be advantageous in this case.

- The power source for the embedded system and to the rotary system can be provided by the green energy such a solar cell. The development of solar cells for this system can be improved by using DSSC technology.

Design Specializations

- Based on the study and the live resource, the entire weed root is measured to around 8cm

- To reduce the reproducibility of weed, the blades are designed to be in hollow so that it can remove weed with its root.

- Control system can be implemented to take the feedback so that the blades can adapt to the landform and the soil condition

- The control system analyses the impact and the stress given by the land to blade, it will control the speed so that wastage of energy can be saved

- While the blade removing the weeds from the soil, the developed embedded system will gather the information about the landform and give inference to the farmers.
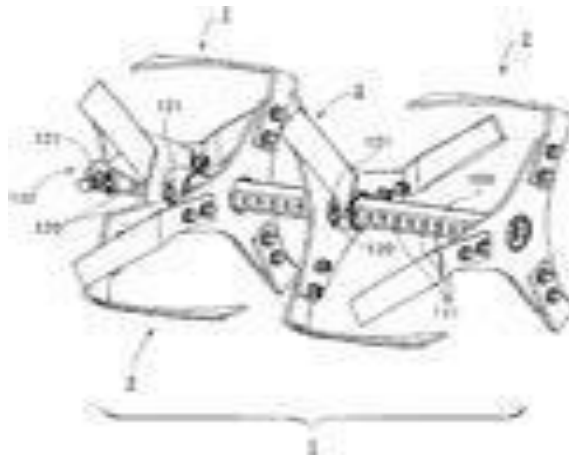
Sample and Real images of the weeds

Conventional tools

Components used

- Stainless Steel Outer Frame

- Specially designed hollow blades

- Motor and the gear box

- Micro controllers

- Various types of Sensors

- Display unit

- DSSC based Solar cell module

Working

- As the working starts, when it placed in the soil and the system is turned on

- The 10cm hollow blades starts dicking the land and removes the weeds with its roots completely

- Simultaneously, the control system get the feedback and calibrate the speed of the motor accordingly

- The Inbuild Embedded system gathers the information like nitrogen level, moisture, temperature etc. which are analyzed and the inference is given to the framers

- The over all energy is contributed by DSSC based solar cells and the dyes used in the solar cells can be anthocyanin which is a natural compound found in various plants and fruits.

Implementation
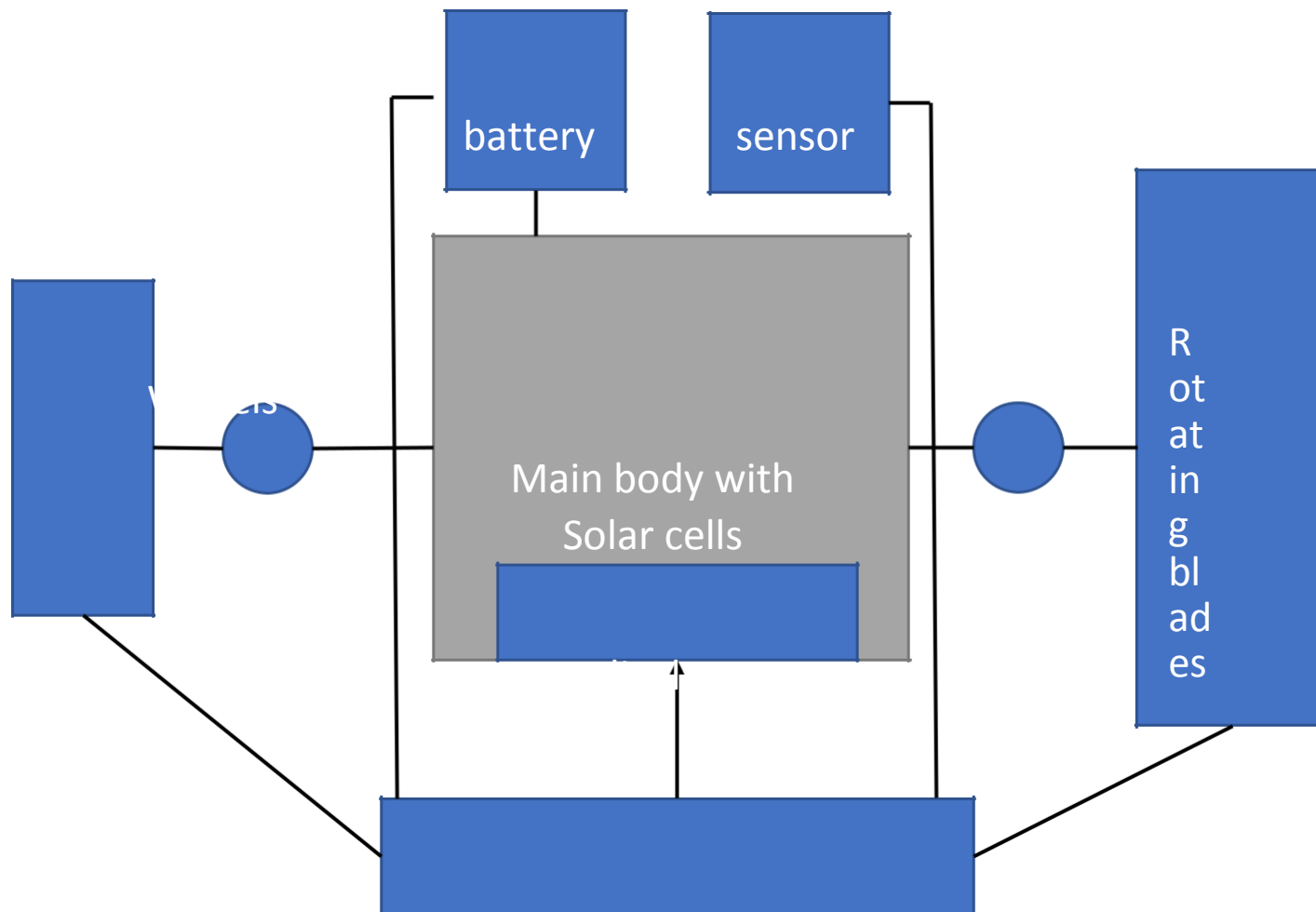
Advantages

- The main advantage is the inflections caused by the weeds to the framers can be avoided

- Cost effective by its design and the power source

- Helps to avoid the wastage resources used to improve the sub nutrients

- Removes the weeds completely with the roots to avoid reproduction

- Reduce the man power and delay caused the convention technique

Challenges

- The greatest challenge in our country's style of agriculture. The random growth of crops become big problem to design a effective blade. In future agricultural technique can be done organized manure so that our machine can work more efficiently.

- The uneven growth of weeds also a problem to remove it

- Changing people's mindset to this new technology

Conclusion

I conclude that this project can be revolution to the mankind. Indian sub continent is given with good agriculture lands by using this machine we can avoid wastage of resource and improve the yield in the land. Its adaptive nature will be a great support to many landform. Let's begin this change in our agricultural lands. "Work with green for green" is the background motive for this project