

IOT Based Rain Roofing for Harvested Crop Protection and Water Management using Solar System

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Abstract: Food deficit and population growth are the most challenges facing sustainable development all over the world. With a growing population, there's a need to increase agrarian products. During heavy rainfalls and showers, the growers face lots of problems as their cultivated crops get washed off or destroyed due to the water recession in the fields. The growers grow crops that are completely dependent on rainfall and natural conditions. Therefore, the focus of this paper is to execute a system that would help the farmers of our country to maximize their yields along with maximized gains. This project represents a visionary approach to modernizing agriculture by integrating renewable energy, cutting-edge technology, and precision farming methods. This project introduces an intelligent rain roofing system designed to safeguard crops from heavy rainfall. Leveraging Internet of Things (IoT) technology, the system continuously monitors soil moisture levels, automatically triggers irrigation when needed. This integrated approach addresses critical challenges faced by modern agriculture: crop protection from environmental hazards and security threats, while optimizing resource utilization. The system will leverage sensor technology, IoT connectivity, and data analytics to enhance farm efficiency, security, and sustainability.

Keywords: Crop Protection, Rain Roofing, Water Harvesting, IOT, SMS alert, Smart Agriculture

