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Integrated Approaches for Smart Agriculture through Innovation

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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. The Smart Agriculture system included those sensors for observing temperature, humidity, water level in the soil, rains and even there is any movement around the fence. This project aims to develop and implement a smart agricultural system integrating laser-based perimeter security and an automated rain-responsive roofing system. 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

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