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# Smart farming—A prototype for field monitoring and automation in agriculture

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**Abstract:**

The agricultural productivity of India is gradually declining due to destruction of crops by various natural calamities and the crop rotation process being affected by irregular climate patterns. Also, the interest and efforts put by farmers lessen as they grow old which forces them to sell their agricultural lands, which automatically affects the production of agricultural crops and dairy products. This paper mainly focuses on the ways by which we can protect the crops during an unavoidable natural disaster and implement technology induced smart agro-environment, which can help the farmer manage large fields with less effort. Three common issues faced during agricultural practice are shearing furrows in case of excess rain or flood, manual watering of plants and security against animal grazing. This paper provides a solution for these problems by helping farmer monitor and control various activities through his mobile via GSM and DTMF technology in which data is transmitted from various sensors placed in the agricultural field to the controller and the status of the agricultural parameters are notified to the farmer using which he can take decisions accordingly. The main advantage of this system is that it is semi-automated i.e. the decision is made by the farmer instead of fully automated decision that results in precision agriculture. It also overcomes the existing traditional practices that require high money investment, energy, labour and time.

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|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Download PDF          | <b>I. Introduction</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |
| Download Citation     | Agriculture plays an important role in Indian economy of about 58% of the rural households depending on the principle means of sustenance [1]. It involves several laborious and time consuming tasks such as manual watering of plants, shearing furrows in case of excess rain or flood and preventing animal grazing. These activities are the most fundamental and essential things that is ought to be carried out with a high degree of accuracy, precision and efficiency. Moreover, inefficient use of available resources results in diminishing the quality and production of the crops thus imbalance the environment. | Full Text        |
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