# Project Design Phase 1 - Proposed solution template

Team ID : PNT2022TMID28861

Team Size : 4

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| S.No. | Parameter | Description |
|---|---|---|
| 1. | Problem Statement (Problem to be solved) | • Crops are not irrigated properly due to insufficient labour forces.<br>• Improper maintenance of crops against various environmental factors such as temperature climate, topography and soil quality which results in crop destruction.<br>• Lack of knowledge among farmers in usage of fertilizers and hence crops are affected due to high ammonia, urea, potassium and high PH level fertilizers.<br>• Requires protecting crops from Wild animals attacks, birds and pests. |
| 2. | Idea / Solution description | • Moisture sensor is interfaced with Arduino Microcontroller to measure the moisture level in soil and relay is used to turn ON and OFF the motor pump for managing the excess water level. It will be updated to authorities through IOT.<br>• Temperature sensor connected to microcontroller is used to monitor the temperature in the field. The optimum temperature required for crop cultivation is maintained using sprinklers.<br>• IOT based fertilizing methods are followed, to minimize the negative effects on growth of crops while using fertilizers.<br>• Image processing techniques with IOT is followed for crop protection against animal attacks. |
| 3. | Novelty / Uniqueness | • Automatic crop maintenance and protection using embedded and IOT technology. |
| 4. | Social Impact / Customer satisfy | • This proposed system provides many facilities which helps the farmers to maintain the crop field without much loss. |
| 5. | Business Model (Revenue Model) | • This prototype can be developed as product with minimum cost with high performance. |
| 6. | Scalability of the Solution | • This can be developed to a scalable product by using sensors and transmitting the data through Wireless Sensor Network and Analysing the data in cloud and operation is performed using robots |