Chapter 16
Emerging Technology Amendment Study in Smart Agro Farming to Diagnose the Agro Product Diseases

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ABSTRACT

Environmental habitation and ecosystem management are some vital issues for agro-farming. Smart monitoring of the agricultural activities is the major issue in recent years due to a range of factors including diseases growing, environmental changes, product promotion and distributions, and the apparent onset of global warming. With the advancement of new computing technologies in agricultural sectors, the smart agro farming has evolved in order to diagnose the agro product diseases, measure the moisture in the soil, measure the soil and environment temperature, measure fertilizers and pesticides, web-based product promotion and distribution, and others. The major problem is to address is the lack of the most appropriate agriculture inputs to continue the smart production activities. These inputs include farm equipment, seeds, planting materials, and livestock. Soil identification and classification are also the major factors in order to select the production of a particular crop for a specific soil type.

INTRODUCTION

The agro farming project development project has involved in large-scale community and farm productions, such as fish, poultry, horticulture crops, tuber, and fruits. The major problem is to address is the lack of the most appropriate agriculture inputs to continue the smart production activities. These inputs include farm equipment, seeds, planting materials, and livestock. Soil identification and classification are also the major factors to select the production of a particular crop for a specific soil type. Environmental habitation and ecosystem management are also some vital issues for agro-farming. Over ally,

DOI: 10.4018/978-1-7998-3499-1.ch016

smart monitoring of the agricultural activities is the major issue in recent years due to a range of factors including diseases growing, environmental changes, product promotion and distributions, and the apparent onset of global warming. With the advancement of new computing technologies in agricultural sectors, the smart agro farming has evolved to diagnose the agro product diseases, measure the moisture in the soil, measure the soil and environment temperature, measure fertilizers and pesticides, web-based product promotion and distribution, and others (Lee et al., 2010; Pinter et al., 2003).

SMART AGRO FARMING

Smart agro farm monitoring has evolved in recent years with the tremendous growth of several computing technologies, such as the internet of things, sensors, RFID, smart dust, web, cellular technology, and other emerging technologies (Mishra et al., 2014; Mishra et al., 2014a). Those technologies assist in many ways in a smart agro farm, such as the measurement of physical parameters such as soil moisture content, nutrient content, and pH of the soil that plays a vital role in farming activities. Based on the essential physical and chemical parameters of the soil measured, the required quantity of green manure, compost, and water is splashed on the crops using a smart irrigator, which is mounted on a movable overhead crane system (Agrifarming, n.d.; Postscapes, n.d.).

SPECIAL OBJECTIVES

1. Automated disease diagnosis and monitoring using a Knowledge Based system
2. web-connected smart agro farm monitoring from the remote agricultural sector
3. web-based product promotion and distribution
4. knowledge base support for soil classification and crop type detection
5. automated soil moisture identification by sensors and function of smart irrigator
6. smart detection of water-contamination events for fish
7. Test the Oxygen Sensor Response in the green housing system

CASE ANALYSIS

A case analysis of web-connected smart agro farm monitoring is given for conceptualizing the technologies practice from the remote agricultural sector. The **figure-1** shows the layout of the user interface, the content, interaction mechanisms, and overall aesthetic, and the operational steps are described as following.

Operational Steps

1. Install the architectural plan as a web-based interface for interactions.
2. Configure the visual sensors in the physical monitoring location as sketched in the picture.
3. Select the surveillance area from an architectural plan.
4. Select the specific visual sensor for view the remote location
5. The system displays a viewing window as given in **fig-1**.