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Agro Land Mapping Vertical Of Geospatial Data Center

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Abstract: This study examines that agriculture became an important improvement Inside the upward thrust of human civilization and increase. As the arena is trending into new technology, it miles an important intention to fashion up with agriculture additionally. As we recognize in India 70% of the population relies upon agriculture and one-third of the country's capital comes from it. Soil reflects each natural and Human activity. It adjustments in its residences which recognize environmental issues that allow you to know more precisely about soil, soil nutrient contents, and moisture stages. Management of agricultural land in each farmer group area. This information is closely related to the needs of agricultural production facilities and infrastructures, such as the need for fertilizers, seeds, and other resources. Agriculture programs rely upon accurate land tracking, for timely meals safety control, and support moves. To achieve this objective, traditional monitoring device calls for field works or surveys finished utilizing professionals, which is very steeply-priced, sluggish, and sparse. Agriculture monitoring structures are looking for sustainable land use tracking answers, starting with geospatial facts for reasonably-priced and well-timed mapping. Accurate and timely land mapping plays a critical role in a variety of sectors in the developing world including food security, land use planning, and natural resource management planning The simplest way to this problem is wise Agriculture by using the modern conventional strategies of agriculture. Subsequently the project pursuits at making Agriculture more economic and get more knowledge about agricultural land. The developed system will store spatial data from farmland members and farmer groups.
Keywords - *Agriculture, IOT, Land Mapping, Sensors, Soil.*

I. INTRODUCTION

In this review paper, we are going to introduce the conceptual basis for measuring nutrient availability and describe the strengths and limit actions of some of the methods for assessing non-agricultural soil. Information is needed for a variety of needs including agricultural quality assurance, preparing the needs of seeds, fertilizer, and other resources supporting the agricultural process. To help farmer groups in overcoming the problem, a system for land mapping and data collection on agricultural activities was developed. We also discuss the method for characterizing soil humidity, pH, moisture, and temperature. Because they often control nutrient cycling and availability. We are going to design a smart system in agriculture monitoring that checks different parameters with digital mapping. The intention for approaching this is to increase its agricultural productivity and its incomes. In the proposed system we are going to collect the parameters of soil and environment through various sensors this model is useful to differentiate between agricultural land and barer land all the data collected will be updated

and will be available on a website. The main objective of analyzing soil is to check the nutrient status of the farmland, so particular measures are taken depending on the deficiency of the field. The data collected from the survey of agro land mapping will be uploaded to a private website which will be secure and further this data cannot be manipulated and can be used as a reference even after years. As the changes in the values of the data will be approximately the same after a year.

II. METHODOLOGY

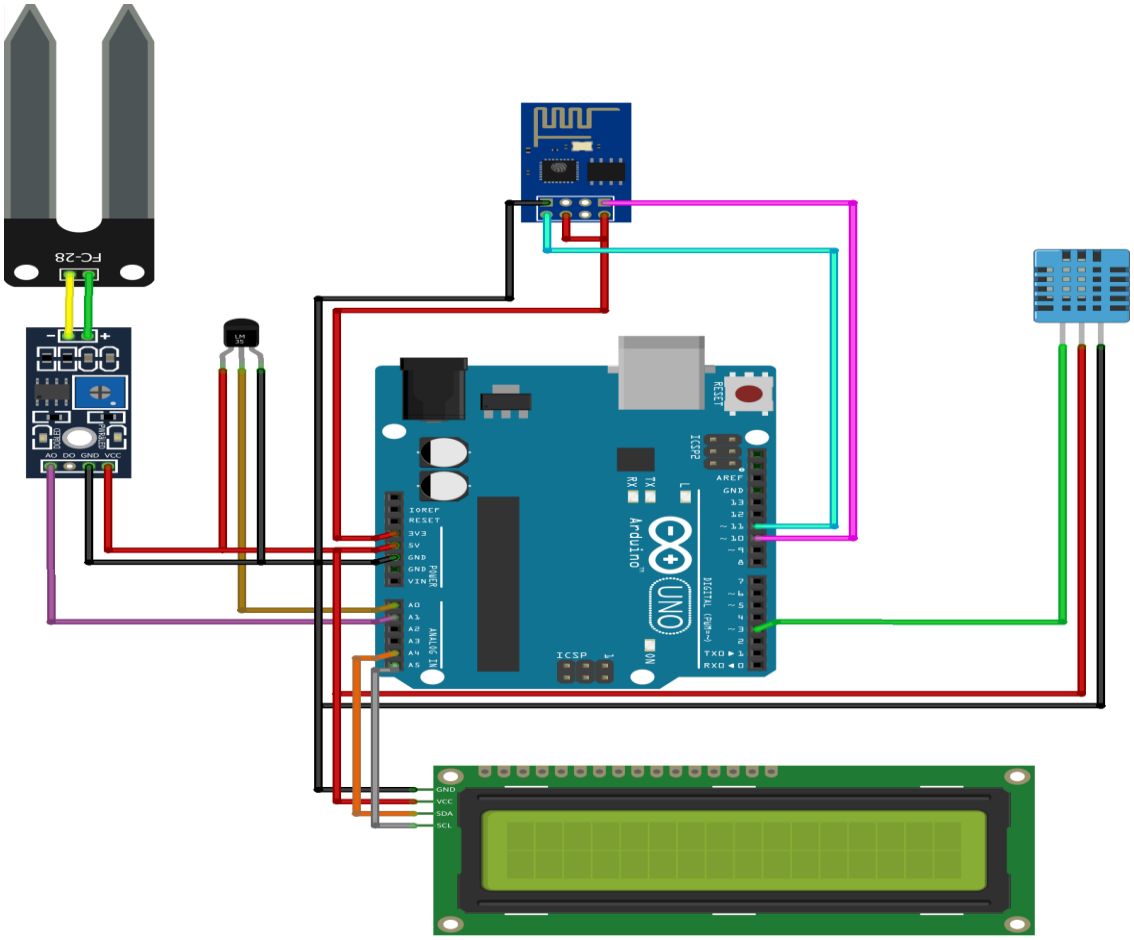

Fig.1 Circuit Diagram of Agro Land Mapping

1) Working:

When the IoT-based smart Agriculture Monitoring system with the Agro land mapping system starts, it collects data such as the Temperature, Humidity, Moisture level, pH value, and soil nutrients All sensors are integrated into the Arduino Uno. These sensors provide information about the ambient conditions for the Arduino Uno. SOIL MOISTURE SENSOR detects soil moisture. The sensor has both analog and digital output input and operates according to the principle of open short-circuit. The LED output indicates more or less the output in this system. When the ground is dry, the electricity stops flowing and acts as an open circuit. If the ground is wet, the current passes and the circuit is short and the output is zero. The temperature sensor detects the temperature of the soil in analog form. The temperature value will be in degree Celsius which measures the accurate temperature levels in different environmental conditions. Humidity sensors are used to provide the actual humidity condition within the air at any given point or place. pH sensor measures the hydrogen-ion activity and gives the values accordingly. This sensor supports both 3.3V and 5V systems.

Examination of soil is very crucial to extract field-specific information, which is useful while making decisions at certain stages. Some factors that help us to analyze soil nutrients include the type of soil, history of crop, fertilizers, irrigation level, etc. Many manufacturers are providing sensors and tools which help in soil testing,

these kits assist farmers to know the quality of the soil. Depending on the data provided, remedies can be taken to increase the growth of the crop. This is all displayed on the 16X2 I2C LCD module. This way we get information about humidity, moisture, water level, and the nutrients in the soil with date and time, based on time. This information will also be uploaded on the IoT website using the Wi-Fi module. Soil mapping using geospatial data is the system that maps the data of soil integrating location data with all types of descriptive information. In, this process we will be surveying a particular geographical area and mapping of soil in which we will get the information that will be updated on the website for future reference

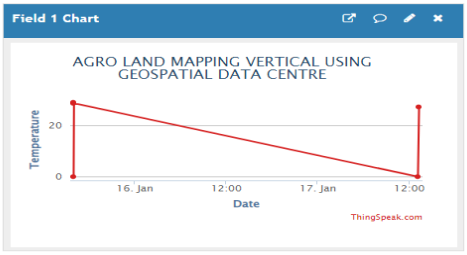

Fig. 2Temperature Of Soil In Agro Land Mapping

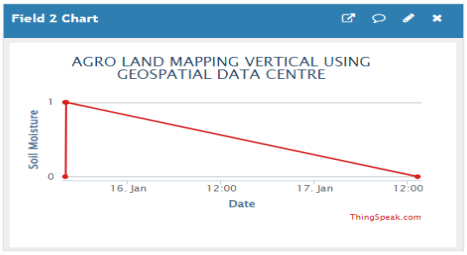

Fig. 3 Soil Moisture Of Soil In Agro Land Mapping

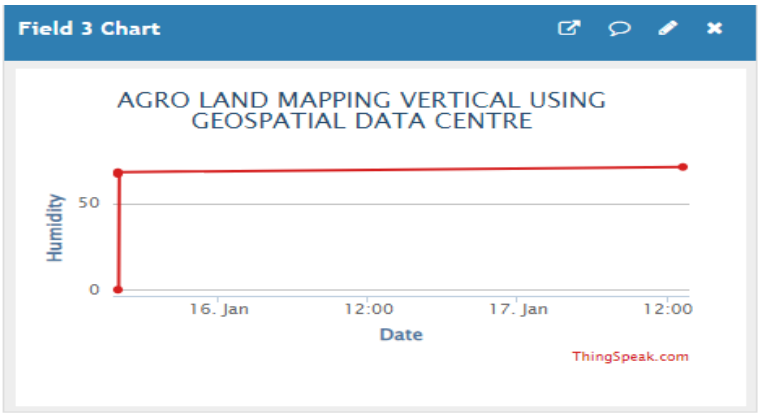

Fig. 4 Humidity Of Soil In Agro Land Mapping

Table 1: lists of equipment

SR NO.	EQUIPMENT
1	Arduino uno
2	lcd
3	Temperature sensor
4	Soil moisture sensor
5	Humidity sensor
6	PH sensor

III. CONCLUSION

Thus, the system is useful to monitor the parameters for agriculture such as temperature, humidity, pH, moisture via the IOT module. This setup was carried out using Arduino UNO, temperature and humidity sensor, pH sensor, soil moisture sensor, and IoT module. IoT sensors are capable of providing information about crop yields which are valuable to production and offer precise data regarding the status of the soil. We get to know about the difference in parameters of soil for agriculture in different areas. mapping of the soil in selective areas will be conducted and the data will be transferred to a private and secure website for future study of land and soil nutrients for farmers so that they can yield crops more easily if they knew about the soil parameters beforehand. This will save them time and money and benefit them.

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