International Journal of Electronics Communication and Computer Engineering
Volume 4, Issue (6) NCRTCST-2013, ISSN 2249–071X

National Conference on Recent Trends in Computer Science and Technology (NCRTCST)-2013

Wire Less Detection of Soil Condition and Sends the Generated Reports to Nearest Agriculture Office Using ICT Technology

Basawaraj Bilamge
Dept of Computer science
Gulbarga University Gulbarga- 585102, Karnataka
Email: bbilamge@yahoo.com

Abstract **– The detection of soil condition is an unique technique that is very help full for formers and they have to increase their yields. By this technique it can be eliminate the condition of the soil where the former going to use. How it is, what type of minerals, it needs it is moisture or wet or dry and how much water it needs depending upon the climate and what are insects are goes to effect it in the field which place has need the more water which will need less, effects of plants and they are under infection condition all these are happens my device is sends the whole data in to nearest agricultural office to take the further action.**

Keywords **– ICT Technology, Wire Less Detection, Soil Condition.**

I. Introduction

By using Information and communication technologies, like geographical information systems (GIS), wireless sensor networks, data mediation software, and short message service (SMS). Through this we will find the what actually going on in the field. Depending on the weather conditions like high temperature, heavy rain, heavy wind, adding pesticides for all these environmental conditions the position of the soil will loss and it become not a good for developing seeds and crop. When all these conditions are seen by former he will becoming the helpless what to and he cannot able to inform the agricultural office. So this can be avoid using wireless automatic controlled and detecting the soil condition and directly informed to the nearest agriculture office.

II. Methodology

To work with the detection of soil condition and insects attacks to plants, and information through a embaddedd systems using ICT technology. The former will only be required to keep a cell phone equipped with Bluetooth and GPS technology. When the implant detects a insects on the soil and plants, it will alert the cell phone which in turn will automatically call for help and provide the former's location. The goal is to provide early detection so that the former will be given attention within the first few hours, thus greatly improving his chances of damaging the plants . Similarly, governments or development partners may know that farmers are using new yield-enhancing technologies but may not have the capacity to understand their impacts. Data-mining technologies, decision-support systems, and modeling software that can clarify the impacts and outputs of yield-enhancing technologies are among the most promising means of linking productivity and ICTs.

II. Objective of Work

By making this work one of the main use is to save the former from the loss of his crop and his soil. To prevent this I have developed a very good technique that can be used and to avoid all those infections and conditions can be controlled within a time and to get the good advise from the agricultural officers. The whole work indicates that the former should get alert from his developing crop and automatically get the information and avoid the damage of plants (crop) as well as soil.

IV. Implementation

When farmers have access to biophysical and other yield-enhancing technologies, frequently they do not know how to use them effectively to address their productivity challenges, such as, they may have fertilizer but not know the optimal amount to apply. ICT can fill this gap in knowledge. Global positioning systems (GPSs), radios, mobile phones, digital soil maps, and other ICTs give farmers information to use biophysical technologies appropriately for example, nitrogen sensors can help to determine the correct fertilizer dose.

ICT can be used to monitor pest thresholds in integrated pest management, provide relevant and timely information and agricultural services, map agrobiodiversity in multiple-cropping systems, forecast disasters, and predict yields. Crop losses diminish as farmers receive relevant and timely information on pests and climate warnings through SMS technology.

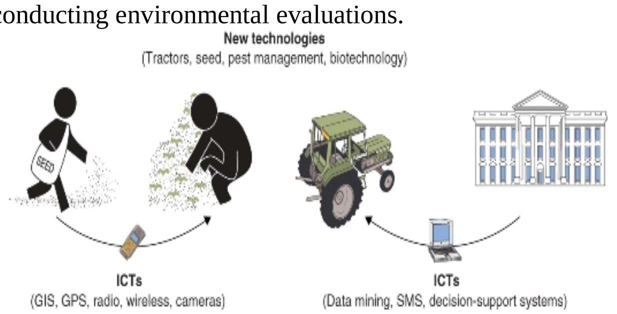
Just as important, information can (and should) go both ways: Farmers can alert local agriculture office or other relevant actors about serious crop developments like disease symptoms. This information makes it possible to avoid disasters more effectively and improves economic management, both of which are crucial for adapting to climate change.

International Journal of Electronics Communication and Computer Engineering
Volume 4, Issue (6) NCRTCST-2013, ISSN 2249–071X

ICT can also lead to more optimal use of inputs. Increasing producers' knowledge of how to use and manage water, equipment, improved seed, fertilizer, and pesticide has improved the intensification of farm practices around the world. In the long run, and after collecting and analyzing multisite, multiyear data, ICT can be used to match cultivars to appropriate environments, increase the understanding of genotype-by-environment interactions, and adapt cropping strategies to the changing climate. Each of these applications increases the profitability of agriculture, reduces transaction costs, facilitates climate change adaptation,

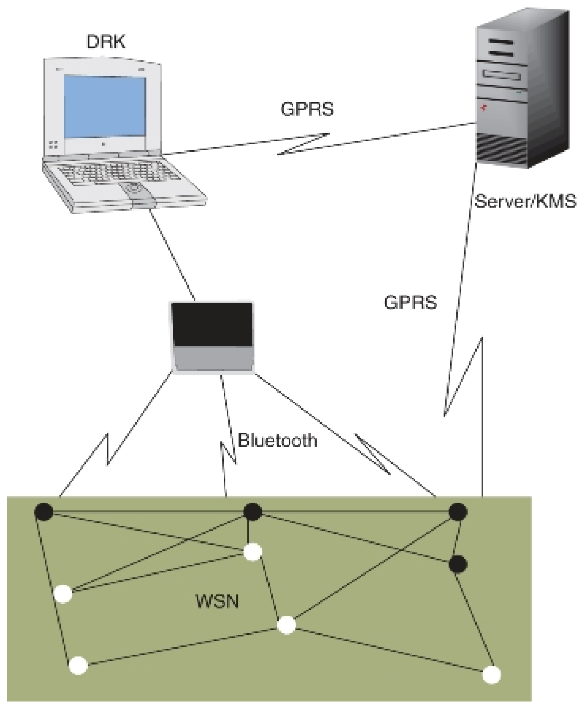
Consistent advances in micro sensing, smaller devices, and wireless communication have resulted in new comprehensive technologies that offer even more consistent and reliable systems for smallholders and policy makers alike. Wireless sensor networks such as WSNs, which combine many kinds of sensory data in one location, are some of the most innovative technologies available for farming and agricultural planning. With the right components, these networks can form knowledge management systems, research databases, and response systems that can guide local communities in agricultural development.

A WSN is a group of small sensing devices, or nodes, that capture data in a given location. These nodes then send the raw data to a base station in the network, which transmits the data to a central computer that performs analysis and extracts meaningful information. The base station acts as a door to the Internet (typically a local area network), providing operators with remote access to the WSN's data . The networks can have multiple sensory devices, the data can contain information on soil, climate, chemicals, and other relevant subjects. The wide application of WSNs allows them to be used not only in managing agriculture but in testing water quality, managing disasters, detecting volcanic activity, and conducting environmental evaluations.



First, WSNs have both active and passive sensors. Active sensors release a signal to detect a physical phenomenon like seismic activity and radar. Passive sensors, which transform a physical phenomenon into electrical energy, can detect a vast array of phenomena, including temperature, humidity, light, oxygen, and chemicals. Once sensors such as temperature and soil moisture are selected.

Wireless Sensor Network Distributed Collection Architecture



Source*: Kabashi et al. 2009. Note: DRK = Distributed Resource Kits GPRS = General packet radio service; KMS = Knowledge Management System*

The design and implementation of WSNs requires a number of important features. The nodes should monitor the field(s) continuously and for a significant period -it is best if maintenance is not required for at least one cropping season or 5–6 months and it tolerate harsh environmental conditions like monsoons and extreme heat. Self-organization is also important: The network should automatically detect removed or newly arrived nodes and adapt the messaging route.

Data organization is vital to the output of WSN as well as other remote technologies. If countries want to use WSN data to construct yield models or predict climate shifts, making sense of the data is pertinent to the design. The data produced can be used to improve crop management strategies and even develop knowledge management systems where best practices, crop disease identification, and planting techniques can be disseminated to smallholders. It is important to note, however, that although battery-operated nodes can function in areas with low power connections, changing batteries in remote areas may prove difficult.

V. Conclusion

This model shows that by using this former will have to use the advance technique and take the benefits from the related officers suggestions and to get more and more profit. The actual thing is that when he developing crop it should not be damage if it shows to becoming damage then how to make prevent that. One of the official use is that he cannot go for the agricultural office and to meet the specialists it will directly message from the officers when his crop is under any infection cause of insects that can be improved effectively. This also shows that the former will not be visit and meet directly he get the information from message as well as call.

REFERENCES

[1] Rumelhart, D. E., Hinton, G. E., and Williams, R. J. "*Learning internal representations by error propagation*". 1986.
[2] http://en.wikipedia.org/wiki/ gsm and ict.
[3] Electronics devises and circuits .Bell Third edition "Prentice Hall of India.1999.
[4] Design of algorithms S. nandagopalan. 2004 sapana Book House.
[5] Modern control engineering. OGATA, 4E, Prentice Hall of India.2001
[6] Discreate event System Bayrose,,Carson, Nelson, Nicol 4th "Prentice Hall of India.2000.
[7] On-the-go soil sensors for precision agriculture V.I. Adamchuka, J.W. Hummelb,. M.T. Morgan c, S.K. Upadhyaya.
[8] Huisman, J.A., Hubbard, S.S., Redman, J.D., Annan, A.P., 2003. Measuring soil water content with ground enetrating radar: a review. Vadose Zone Journal 2, 476–491.
[9] San Francisco: Embedded System Programming.
[10] Heath steve : Embedded System Design ISBN 1997.