

# Computerized Agriculture & Farm Management System

**Dr.G.Rajanbabu**

*Assistant Professor, Department of Environment Science,*

*Pandicherry University, India*

**Abstract**— This paper discusses about the agriculture and farm management system are achieved by the computerized formation, where agriculture is not only the crop production or development process now it is termed to change by the automation process in the way of operating each and every system with the advanced technology, so that there should be a proper and managed process for the increment in act of every progress, in the addition of fertilization, machinery as well as production of raw materials. Global Information System, Farm Software and Networking are combined to manage farm efficiently.

**Keywords:** Farm Management, GIS, Farm Software and Networking.

## **I.INTRODUCTION:**

Computers and its applications play the important role in the field of agriculture and farm management system where the every activity is done by the computer advanced system in the various methods, such as application can control the water which pass to the agriculture at the certain time, robotics and sensors which could prevent and analysis the land by the following sequence of system. The

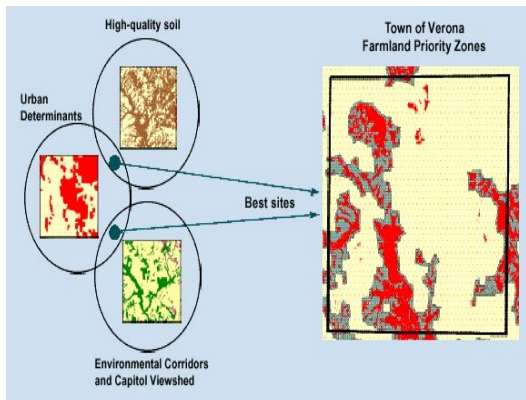
main act of farm management is to manage with the equipments. Some of the new technologies are used in agriculture and farm maintenance which may reduce the human work load and also main purpose of taking this advance technology is to minimize the labour involved in the agriculture converting into fully automation & computerized process.

Well this equipments are managed and created by using the sensors and other technologies such as crop sensing, soil sensing temperature sensing, animals health sensing are categorized in different ways for the increment of production. Some of the services are also can be done by submitting forums, creating social networks to create awareness among the farmers and make to produce their production economically. The main aim of this paper is to managing farm and increasing of production in the fully automated process to produce economically.

## **II.FARMLAND COMPUTATION:**

Geographical Information System which is also known as GIS which used to evaluate land and assigning rank system according to the soli type and climatic conditions of the land where this data can be

much useful to the farmers to develop the land in the category of ranking system so this information will be much useful to the farmers by the viewing of comparison between the two agriculture land, so the farmers can find the drawbacks of the farmland and they can increase the potential observation among the lands.



**1. GIS view of Farmland**

The above figure 1 shows that the GIS technology which explains the farmland difference and also describe what type of soils are available in the GIS system, the picture describes that the analysed part of the land and it divided into three categories such as high quality soil, urban determinant land and finally other environmental are displayed. So thus the farmers can choose the high quality soil land for the agricultural purposes & it would be the better choice for the farmers.

**III.EQUIPMENT & MACHINERIES:**

In the new way of maintaining farmland through the advanced equipments and machineries, that the work will be easily done in the agriculture land, most of the

equipments are designed with the microchips, controllers and processors to do the work artificially. These equipments are made to do maximum work which could seed the crops in the soil automatically in a perfect arrangement, which does not need more manpower for this task, as the work will be completed in the assigned task occasionally.

Some of the other equipments are fully functioned of computerized formation, such as they could be able to automatically feed the animals, computerized milk consumption process and milking machines are the distinctive process of the farm management system, in the field the innovative process is the automatic tractor which could have the quality to operate in the self manner system. This would give the better economy for the farmers by the combination of the machineries and advanced computerized technology in the act of farm management.

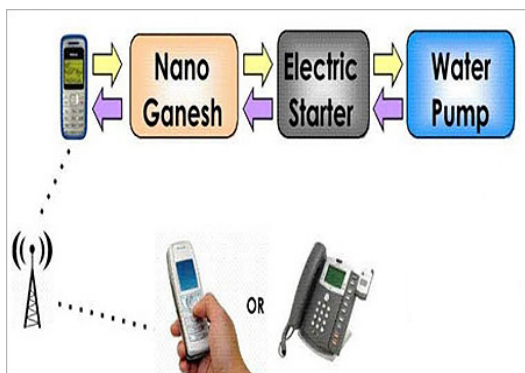


**2. Heavy Planting Machineries**

**IV.FARM SOFTWARE:**

Many computer applications are available for the farm management system where it may be the readymade software or specialized

software; most of the software's are used to track the animals and other activities in the agriculture sector, some of the mobile applications are designed especially for the agricultural process. For example mobile software is available for the passing of water into the field and it can be stopped at the particular period like this many software's are indeed for the farm management system.



### 3. Mobile Software for Water Pumping

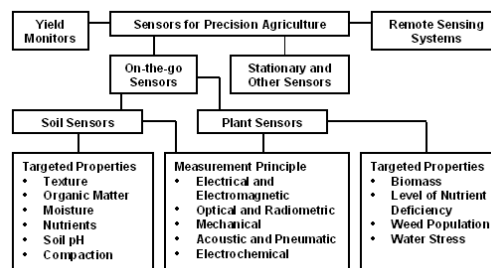
The above figure 3 shows that the mobile oriented technology is used in the agriculture where the user has to make call to the technology based mobile and that mobile will activate the nano ganesh component where it is made up of electronic circuits with the nano technology, further this nano technology will make up the start of electric starter and this starter will activate the pump to the agriculture field, this system will make the farmer not to interact directly to the system by the other way the farmer has to make call.

### V.SENSOR BASED:

The sensors are becoming the important part of the agriculture and farm

management system, where these are used to monitor regularly the crops and other machinery management around the area. There are yielding monitors are installed to check out through the monitor display and some other special type of sensors are designed for the agricultural purposes, some of the sensors are classified into two different types such that it is used for soil sensors and plant sensors & also there is some other available stationery sensors are also installed.

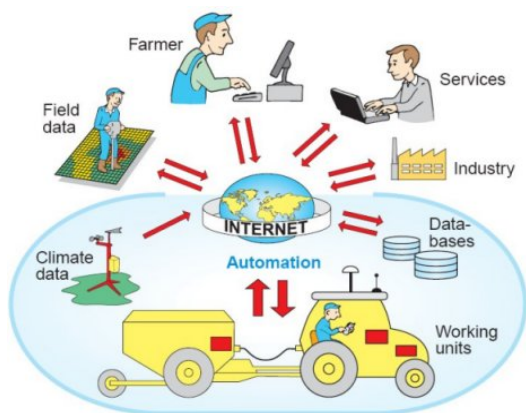
Usually the soil sensors will consists of both targeted properties and measurement principle, where the targeted properties are texture, organic matter, moisture, nutrients, soil pH and compaction as well as the target properties of the plant sensors are the biomass, level of the nutrients deficiency, weed population and water stress. These two targeted properties have the measurement factors they are electrical & electromagnet, optical & radiometric and electrochemical based where messages are passed to remote sensing technology.



### 4. Sensors Based Agriculture

**VI.NETWORK ORIENTED:**

The agriculture aspect also now get connected with the networking systems share the different kinds of technologies at different unit, such that the application can be able to control the sensing technology and the remote based technology will have the power to control the heavy machinery with the small micro-controller system. And many social networks and websites are created for the farmers to clarify their doubts and through submitting requests or through forums.



**5. Agriculture Network**

Initially the farmer has to collect the data and have to forward the those data to the service centre and the service centre will help the farmer and then send the forum answers to the farmer this will help the farmer and all the collection of information are stored in the database, and the working units will be acted successfully by the farmers through the network based technology. Like this network based technology development will make the reach of the increasing of productivity of agriculture cultivation process.

**VIII.E-AGRICULTURE:**

E-Agriculture is one of the most advance technology in the field of farm management or other crop development in the agricultural field; it is mainly designed for the solving the existing problems also are tries to solve the new form of problems. The main aim of e-agriculture system is to make the sustainable development in the agriculture development and business.

Also e-agriculture is used to design for the agriculture informatics system, and there should be the following food production process, also standards particularly in the rural areas. Mobile phones, computers and tablets are the important source of the e-agriculture system, and a real constraints software & hardware are available for agriculture system.

**IX.CONCLUSION:**

Thus the computerized based agriculture and farm management system plays the important role in the latest agriculture system; the system is usually developed with the highly advanced machineries and the sensors technology which is used to increase the crop production system. Some of the GIS, heavy planting machineries, and farmland based software & hardware, multi-network based system are the other growing advantage in the agriculture system and the e-agriculture are also plays the important role in the developing of the efficient and effective agriculture & farmland management system.

## References:

1. Winterbottom, Jo; Jadhav, Rajendra (June 20, 2011). "SPECIAL REPORT - India's food chain in deep change". Reuters. Retrieved 12 July 2011. "The average size of farms in India is a mere 1.33 hectares -- about the size of two soccer pitches"
2. "Anna Creek Station". Wrightsair. Retrieved February 17, 2012. "Anna Creek Station is well known as the largest cattle station in the world, covering an area of 24,000 sq. kms"
3. Larousse Dictionnaire de la Langue Francaise *Lexis*, Paris, 1993
4. Patrick Hanks, ed. (1986). *Collins dictionary of the English language*. London: Collins.
5. James Robert Vernam Marchant, Joseph Fletcher Charles (ed.). *Cassell's Latin dictionary*. Funk & Wagnalls.
6. <http://library.thinkquest.org/TQ0312380/dairy.htm>
7. "A Beginner's Guide to Poultry Farming". The Alabama Poultry and Egg Association. Retrieved February 18, 2012.
8. "RSS Text Size Print Share This Home / news / opinion / editorial / Taxpayers Get a Break From Prison Farms". The News & Advance. August 28, 2008. Retrieved February 18, 2012.
9. "National Agricultural Statistics Service". Retrieved 2007-04-20.
10. Hoppe, Robert A. and Penni Korb. (2013). Characteristics of Women Farm Operators and Their Farms. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service.
11. "Facts about Farmworkers". National Center for Farmworker Health. Retrieved March 29, 2013.
12. "Changing Characteristics of U.S. Farm Workers". U.S. Department of Labor. Retrieved March 29, 2013.
13. "Facts on Farmworkers in the United States". Cornell University. 2001. Archived from the original on December 7, 2006. Retrieved February 17, 2012.
14. "Corn Acres Expected to Soar in 2007, USDA Says". *Newsroom*. Washington: U.S. Department of Agriculture - National Agricultural Statistics Service. March 30, 2007. Retrieved February 18, 2012.
15. Irich G. Mueller, Nicole M. Gerardo, Duur K. Aanen, Diana L. Six, and Ted R. Schultz (December 2005). "The Evolution of Agriculture in Insects". *Annual Review of Ecology, Evolution, and Systematics* **36**: 563–595. doi:10.1146/annurev.ecolsys.36.102003.152626.
16. "Definition of Agriculture". State of Maine. Retrieved 6 May 2013.
17. Committee on Forestry Research, National Research Council (1990). *Forestry Research: A Mandate for Change*. National Academies Press. pp. 15–16. ISBN 0-309-04248-8.
18. Budowski, Gerardo (1982). "Applicability of agro-forestry systems". In MacDonald, L.H. *Agro-forestry in the African Humid Tropics*. United Nations University. ISBN 92-808-0364-6.
19. Jared Diamond (2012). *The World Until Yesterday*. Viking. p. 353. ISBN 978-0-670-02481-0.
20. Douglas John McConnell (2003). *The Forest Farms of Kandy: And Other Gardens of Complete Design*. p. 1. ISBN 978-0-7546-0958-2.
21. Douglas John McConnell (1992). *The forest-garden farms of Kandy, Sri Lanka*. p. 1. ISBN 978-92-5-102898-8.
22. "The Development of Agriculture". National Geographic. Retrieved 22 April 2013.
23. DK Jordan (24 November 2012). "Living the Revolution". *The Neolithic*. University of California – San Diego. Retrieved 22 April 2013.
24. DK Jordan (24 November 2012). "Living the Revolution". *The Neolithic*. University of California – San Diego. Retrieved 22 April 2013.
25. Hancock, James F. (2012). *Plant evolution and the origin of crop species* (3rd ed.). CABI. p. 119. ISBN 1-84593-801-1.
26. UN Industrial Development Organization, International Fertilizer Development Center (1998). *The Fertilizer Manual* (3rd ed.). Springer. p. 46. ISBN 0-7923-5032-4.
27. S. Johannessen and C. A. Hastorf (eds.), ed. (1994). *Corn and Culture in the Prehistoric New World*. Boulder, Colorado: Westview Press. ISBN 0-8133-8375-7.
28. DK Jordan (24 November 2012). "Beyond Wheat". *The Neolithic*. University of California – San Diego. Retrieved 22 April 2013.
29. Vergano, Dan (19 January 2011). "Grapes domesticated 8,000 years ago". *USA Today*. Retrieved 4 May 2013.
30. DK Jordan (24 November 2012). "The "Agricultural Revolution"". *The Neolithic*. University of California – San Diego. Retrieved 22 April 2013.
31. Adams, Kristina. "Horses in History: A Bibliography". USDA National Agricultural Library. Retrieved 24 May 2013.
32. Heiser, Carl B., Jr. (1992). "On Possible Sources of the Tobacco of Prehistoric Eastern North America". *Current Anthropology* **33**: 54–56. doi:10.1086/204032.