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E-technology in the Aid of the Farmers

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Introduction

Agriculture in India is the core sector for food security, nutritional security, and sustainable development and for poverty alleviation. In Indian agriculture 80 % of farmers are the small and marginal. Therefore, the future of agriculture growth and food security in India depends on the performance of small and marginal farmers. Increasing their productivity and incomes can make a major contribution to reducing hunger and poverty. Access to the technological information is one of the most important coordinators for smallholders to improve productivity.

Technology here plays a vital role to enhance productivity sustainably. Innovation mechanisms for technology transfer are required to bring relevant tools, knowledge and knowhow to farmers.

IT supports new methods for infallibility agriculture like computerized farm machinery that applies for fertilizers and pesticides. Farm animals are fed and monitored by electronic sensors and identification systems. Selling or buying online began to become popular in the world. However, it's most important role remains communication, and the Internet has provided us with an ideal opportunity to do so.

Role in agriculture

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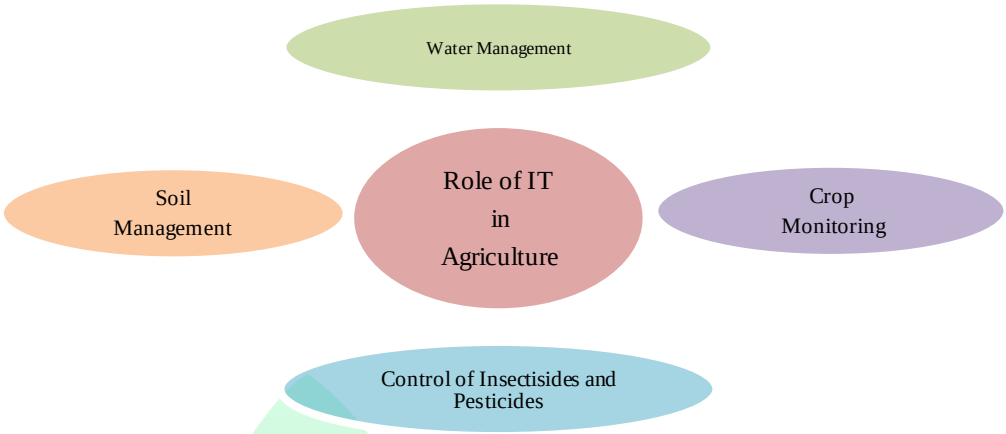
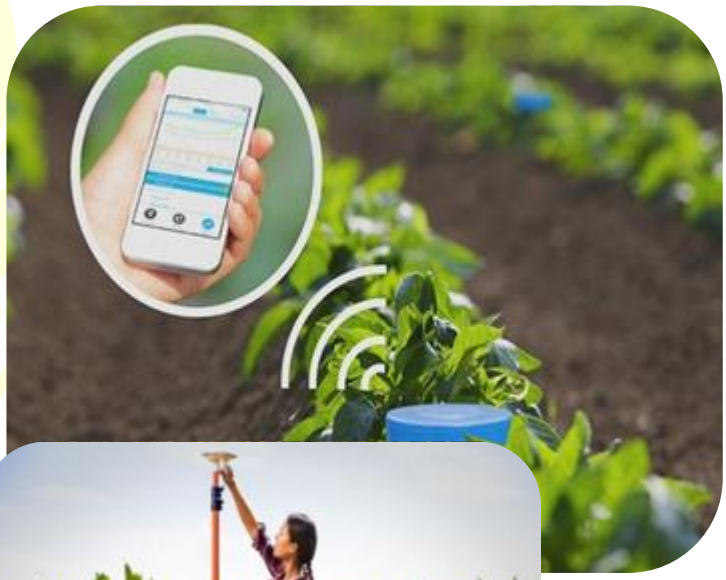
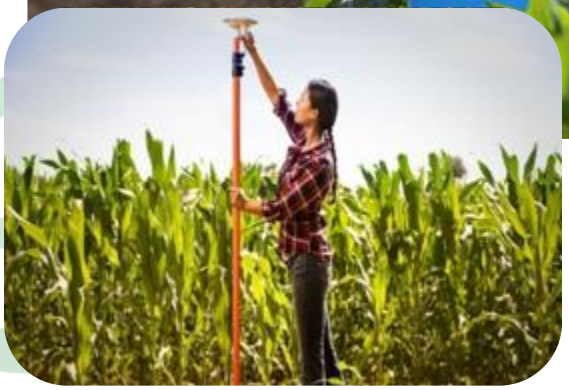


- Water management can be efficiently done using IT with no wastage of water using sensors.





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- IT helps to continuous monitor the land so that precautions can be taken at early stage.
- It increases productivity, reduce manual work, reduce time and makes farming more efficient.
- Crop monitoring can be easily done to observe the growth of crop.
- Soil management such as PH level, Moisture content etc can be identified easily so that farmer can sow seeds according to soil level.
- Sensors and RFID chips aids to recognize the diseases occurred in plants and crops. RFID tags send the EPC (information) to the reader and are shared across the internet. The farmer or scientist can access this information from a remote place and take necessary actions, automatically crops can be protected from coming diseases.
- Crop sales will be increased in global market. Farmer can easily connect to the global market without restriction of any geographical area.

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Transforming rural India with the help of digital technologies

It can help the bridge gaps by providing 'e' and 'm' services. E-tech offering meant for rural sector can be classified into three categories:

- Solutions aimed at empowerment. Ex.- E-chaupal.
- Solutions aimed at enablement. Ex.- E-governance like Aadhar.
- . Solutions aimed at market expansion. Ex.- E-commerce initiatives, Village tourism etc.

Schemes of government to promote e-tech in agriculture

- National Policy for Farmers, 2007- Focuses on ICTs.
- National Telecom policy, 2012- Focuses on broadband connectivity and mobile penetration.
- National mission on agricultural extension and Technology.
- Universal service obligation fund (USOF) already launched wireless broadband Scheme in 2009.Mobile values added services (mVAS) for rural women's Self-help group (SHG) is also part of USOF's Sanchar Shakti programme.
- Agricultural Technology Management Agency (A T M A).

Prominent e-technologies

1. m-Kisan SMS Portal- enables all government organizations in agriculture and allied sectors to give information/services/advisories to farmers by SMS in their language, preference of agricultural practices and location.

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2. Kisan Call Centres- Main aim of the project is to answer farmers' queries on a telephone call in their own dialect. Toll Free number is1800-180-1551.

3. Sandesh Pathak- The application, developed jointly by C-DAC Mumbai, IITMadras, IIIT Hyderabad, IIT Kharagpur, and C-DAC Thiruvananthapuram will enable SMS messages to be read out loud, for the benefit of farmers who may have difficulty in reading.

4. Agro-pedia -It is envisioned to be a one stop shop for all kinds of information related to Indian agriculture.

5. Aqua Mini- This tool developed by Agrocom provides real-time decision- support tools to progressive farmers and organizations supporting progressive farming.

6. e-NAM-It is a pan-India electronic trading portal which networks the existing APMC mandis to create a unified national market for agricultural commodities. •The portal provides a single window service for all APMC related information and services.

More advanced use of IT in farming

1. Irrigate via smart phone

2.GPS mapping for an input to the field using variable rate technology, which helps farmer in accessing the need i.e., where they need to put more fertilizer or less, according to the requirement of the soil and also helping in field documentation about yield, moisture, maps for field drainage, etc.

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Benefits

1. **Improved decision making**

By having the necessary information, farmers big and small can make better and more informed decision concerning their agricultural activities. May it be about who to get their grains from or perhaps who to sell it to, the communication channels that information technology brings makes production up to distribution easier for the farmers. The exchange of knowledge from various countries and organization also helps farmers be more aware of factors to consider before making their decisions.

2. **Better planning**

IT has paved the way to come up with farming software which can keep better track of crops, predict yields, when to best plant and what to plant, to intercrop or focus on just one product, or determine the current need of the crops just about everything needed to improve production and income. By adjusting to the modern farming methodologies, farmers can have better control of their crops. Gaining information from their farm is essential in sustaining its success and fuelling further growth.

3. **Community involvement**

There are several programs which are made possible by IT applications, and community involvement in agriculture can be increased as well. When a community adopts modern methods for agriculture, the production of local goods can be increased. There are some places where people greatly benefit from the land and their resources for agriculture, and with IT, there can be improved union in local farmers which can lead to their community's overall improved production that may lead to better income for everyone involved.

4. **Agricultural breakthroughs**

IT makes the spread of information concerning the latest agricultural breakthroughs more possible. When scientists develop new and improved grains or find techniques to help

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winter crops become stronger against the cold, farmers from all over the world may benefit from the same breakthroughs simply by being connected to the rest of the agricultural world. Sharing information to help everyone progress is made much easier through resources made available and accessible by IT.

5. **Agriculture for everyone**

Farmers have in-depth knowledge when it comes to their trade. However, interested individuals who may be called backyard farmers may also benefit from how modern technology has changed how agriculture is seen. Growing your own sustainable garden of herbs, fruit trees, and other agricultural produce can be possible in a smaller scale. Planting is beneficial in more ways than one, and having your own produce even helps assure the freshness and quality of the food your family eats.

Conclusion

Now days the penetration of market forces in rural India is increasing and is potential market. With the diverse cultures and languages in India, ICT provides a good platform here. Thus, in future there would be substantial upliftment and sustainable development in rural areas.

ITs now may act as an agent for changing agrarian and farmer's life by improving access of information and sharing knowledge. Farmers feel empowered and can adopt appropriate measures at the time of need.

IT had the potential to transform agriculture into a better prospect in the wake of climate change and decrease in the cultivable land.