Application of Digital Technology for Agriculture Development in India

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Abstract

The use of various advance technology tools in agriculture area is the need of the hour. We can depend on various agriculture acitivities and work related to farmng on digital technology strating from basic planning of the crop till it is sold in them market . Various facilcities are now available to the farmers to make use of such advanced facilities for the betterment of the farmers. Both Central Government and State Government are now motivating the faremers to make use of this facilities. Digital agriculture is the use of digital technology to **integrate agricultural production from the paddock to the consumer**. These technologies can provide the agricultural industry with tools and information to make more informed decisions and improve productivity. Direct cash transfer: **Digital India will help the government to reach the needy and poor farmers for the Direct cash transfers system replacing agricultural subsidies**. This would help in increased agricultural productivity as well as reduce farmer's debt burden. The use of maximum digital process at all the levels of the farming will improve the income of the farmer and there is lot of scope to make sycu applications related to the agriculture for the Indian Farmers. This paper is decent contribution in creating the awareness about use of digital technology for the agriculture sector.

Keywords: Framing , Farmer , Digital Technoloogy , Crop, IOT , Yied.

Introduction

Digital agriculture, sometimes known as **smart farming** or **e-agriculture**, is tools that digitally collect, store, analyze, and share electronic data and/or information in agriculture. The Food and Agriculture Organization of the United Nations has described the digitalization process of agriculture as the **digital agricultural revolution**.Other definitions, such as those from the United Nations Project Breakthrough,Cornell University, and Purdue University,also emphasize the role of digital technology in the optimization of food systems.

Digital agriculture includes (but is not limited to) precision agriculture. Unlike precision agriculture, digital agriculture impacts the entire agri-food value chain — before, during, and after on-farm production. Therefore, on-farm technologies, like yield mapping, GPS guidance systems, and variable-rate application, fall under the domain of precision agriculture *and* digital agriculture. On the other

hand, digital technologies involved in e-commerce platforms, e-extension services, warehouse receipt systems, blockchain-enabled food traceability systems, tractor rental apps, etc. fall under the umbrella of digital agriculture but not precision agriculture.

The government is also promoting establishment of specialized agro-processing financial institutions in this sector. Various policy initiatives have been taken by the government of India in order to promote the food processing industry. All the processed food items have been exempted from the purview of licensing under the Industries (Development and Regulation) Act, 1951.

There is automatic approval for foreign equity upto 100% for most of the processed food items except alcohol and beer subject to certain conditions. 100% Foreign Direct Investment is under government approval route for trading, including through e-commerce, in respect of food products manufactured or produced in India.

Excise Duty on food processing and packaging machinery is reduced from 10% to 6%. Over the years, the government has taken other major steps to aid and enhance the agriculture sector with proven farming technologies and supportive policies.

The game changer is the digital technology in farming. The recent evolution of digital technology in farming will further accelerate growth by ensuring higher crop yields and enhancing sustainability by reducing water consumption and the use of agrochemicals.

Source :- https://www.google.com/search?q=future+of+digital+t

Digital technologies, such as artificial intelligence (AI) and machine learning (ML), remote sensing, big data, block chain and IoT, are transforming agricultural value chains and modernizing operations. In September 2021, the Union Minister of Agriculture & Farmers Welfare, Narendra Singh Tomar, announced the initiation of the Digital Agriculture Mission 2021–2025.

Various Appliocation Areas of Digital Technology in Farming .

Direct applications of digital technology include **remote sensing (via satellites), geographic informa- tion systems, crop and soil health**

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monitoring, and livestock and farm management, among other applications include mobile applications providing price information to farmers can reduce market distortions and improve earnings; precision agriculture technologies can improve efficiency of production; and, artificial intelligence can support timely decision making. Disparities in access to technologies and services will need to be addressed. Work on this will require more systematic data on digital technologies and digitalisation at the regional and population level. Different models will need to be identified for the inclusion of small-scale farmers in the digitalization process. Creation of a Digital Agriculture Readiness Index to evaluate the status of digital agriculture in different countries could help identify critical next steps in the digital agriculture transformation process.

Source :- https://www.google.com/search?q=future+of+dig
Major benefits of using Difgital Technology in Agriculture: –
- ✓ Increases agriculture productivity and lowers production cost
- ✓ Inhibits soil degradation
- ✓ Lessens chemical application in crop production
- ✓ Promotes effective and efficient use of water resources
- ✓ Uplifts socio-economic statuses of farmers
- ✓ Reduces environmental and ecological impacts
- ✓ Augments worker safety
- ✓ Future Scope in advancement of tools and Techniques

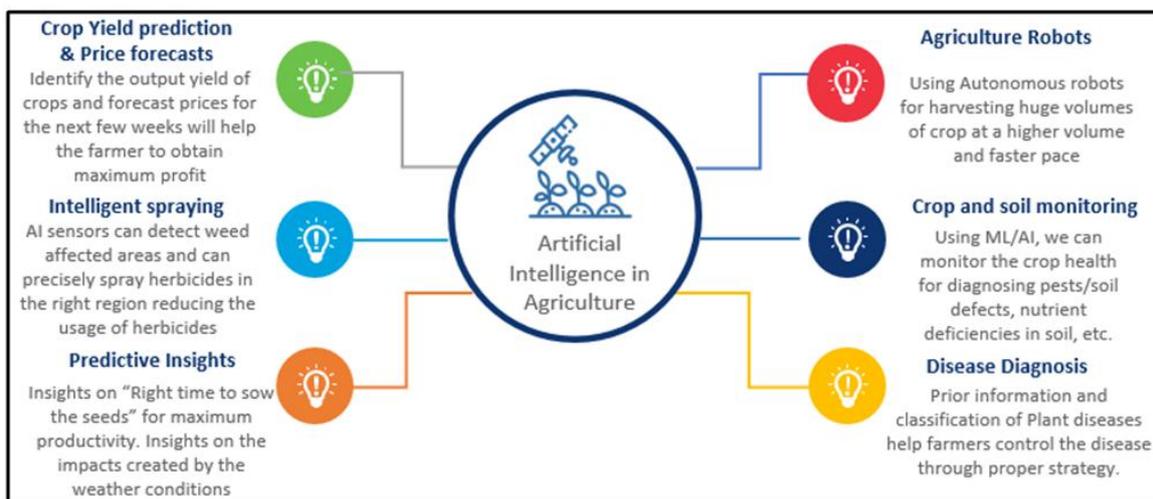**Indian Agriculture Sector and Digital Technology**
More generally, the impact of digital innovation on Indian agriculture will take time. Although we talk about mobile penetration rates on average across the country, the penetration of smart phones into rural areas is actually still quite low. It is increasing rapidly, but we may be several years away from scaling the types of services we talk about in these areas. And there are other challenges. Consider our discussion about giving farmers better information for decision making. There are challenges in the transformation of content into local

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languages, and making it meaningful, not to a state, not to a district, but to that local area—for a particular microclimate or crop. Are we using digital platforms to give 30,000-foot knowledge or 100-foot knowledge? I think that's a major challenge. Also, there is the question of monetization. It is an expensive business to reach all of this to the farmer. Who's going to pay for it? This has to ride on other paid services. Go back to the cell-phone era: voice you were paying for, but some apps came free with it. So there has to be a monetizability. To me, this is a crucial question, Who's paying the bill? It costs a huge amount of money to get the apps going and to get the information going, put it into local content, make it into the vernacular, and then getting people used to delivering it. But there's a ray of hope, and that is as follows: even if penetration is low, you will find every village with at least two or three smartphones. Now, the smartphone connects to the information, and then the word of mouth gets it out further.

Future of Digital Technology in Agricultutre

Future agriculture will use sophisticated technologies such as robots, temperature and moisture sensors, aerial images, and GPS technology. These advanced devices and precision agriculture and robotic systems will allow farms to be more profitable, efficient, safe, and environmentally friendly.

Artificial intelligence, analytics, connected sensors, and other emerging technologies could further increase yields, improve the efficiency of water and other inputs, and build sustainability and resilience across crop cultivation and animal husbandry.

Source:- https://www.google.com/search?q=future+of

Conclusion

The agriculture is one of the impornant area for any country. The Indian Agriculture sector is very vast and wide in nature various factors make the difference in the yield of the agriculture produce. The advance technology will make the drastic difference in the agriculture area by using maximum advanced tehnology we can make the farmers happy by providing them great support by

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using digital technology. This paper is decent effforet in creating the awareness about use of digital technology for the agriculture sector. To meet these challenges will require a concerted effort by governments, investors, and innovative agricultural technologies. Agriculture 4.0 will no longer depend on applying water, fertilizers, and pesticides uniformly across entire fields. Instead, farmers will use the minimum quantities required and target very specific areas. The report further states that, farms and agricultural operations will have to be run very differently, primarily due to advancements in technology such as sensors, devices, machines, and information technology. Future agriculture will use sophisticated technologies such as robots, temperature and moisture sensors, aerial images, and GPS technology. These advanced devices and precision agriculture and robotic systems will allow farms to be more profitable, efficient, safe, and environmentally friendly.

Acknowledgement

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