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Review Article

Digitalization and Horticulture: New Era of Global Flow

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Abstract

Among the 53 Asia pacific countries, India stand at 39th positions in terms of fixed broadband adoption (UNESCAP, 2016). The greater needs of remote areas to connect to the broadband and internet to avail technology for its greater use has pushed India towards digitalization. With the Government of India's intent to provide various public services to the masses at greater speed and with lesser leakage, digitalization was forwarded. The popular principle of government of minimum government and maximum governance has the sought need of digitalization. Digital India is an initiative to integrate all the government departments and connecting people of India directly with all the departments to address the issues in a better way. Digitalization aims at ensuring a reduced paperwork and time and in simple terms Minimum Government and a Maximum Governance. It was launched on 1st July 2015 with the vision of transform India's economy. Developing digital infrastructure for providing digital services and make the people digitally literate are the core components of Digital India.The user friendly interface will connect more people to technology and the platform will act as a thought-pool. The agriculture youth/farm youth connect themselves with the digital mode in getting information like from kiosks or selling their products and getting different price information and market intelligence. With the coming of start-up venture supports, the youngsters will get a chance to demonstrate their enterprising skills with the help of venture capital provided to them. Research and development along with training also needs various knowledge from across the country and only digital tools can bring in various thoughts on single issue together.If used properly the digitalization can not only be used to contribute but also can benefit million of its users. It will also be helpful in increasing the digital literacy of the Indian masses. Simultaneously a public grievance mechanism can help its users to reach to the service providers in no times. Usability of the digital system can only unfold the use and misuse of the innovation.

Keywords: Digitalization; Horticulture; Digital India

Introduction

Digital India is an initiative to integrate all the government departments and connecting people of India directly with all the departments to address the issues in a better way. Digitalization aims at ensuring a reduced paperwork and time and in simple terms Minimum Government and a Maximum Governance. Digital India aims to connect remote rural areas and its inhabitants with a workable speed network so that multiple government services could be availed by rural people in general and rural youth in particular. Since most of the schemes of government are mounted on internet and can be used by a mere combination of clicks, these digital web has become important. Digital India will connect more youth to the government and its services as now-a-days citizen friendly schemes in electronic form is more preferred. The user friendly interface will connect more people to technology and the platform will act as a thought-pool. The agriculture youth/farm youth connect themselves with the digital mode in getting information like from kiosks or selling their products and getting different price information and market intelligence. With the coming of start-up venture supports, the youngsters will get a chance to demonstrate their enterprising skills with the help of venture capital provided to them. Research and development

along with training also needs various knowledge from across the country and only digital tools can bring in various thoughts on single issue together. Digital India can also help increase online education as more and more students can get registered and given quality of lectures on similar topic. Last but not the least, E-commerce is better understood and utilized by the youth. At commercial aspect many e-commercial sites for fast moving consumer goods and agriculture goods are providing services. This has not only added towards the prosperity of Indian economy but helped people to be self-reliant and ultimately providing a solution towards increasing unemployment. But this digital tool can be helpful only if it could be handled at best, which calls for a change agent to propagate the handling of ICT tools. It was launched on 1st July 2015 with the vision of transform India's economy. Developing digital infrastructure for providing digital services and make the people digitally literate are the core components of Digital India.

Transfer of improved production technologies to the reach of farmers is inevitable for enhancing horticultural crop productivity. As Jain Irrigation set an example with dramatic yield increase from 50% to 300% by providing micro irrigation systems to the local growers as its "More crop per drop" slogan promised. Digitization can be a great initiative to bridge the gap between research organizations to horticultural farmers and stakeholders. Smart initiatives of scientists are taken from SAUs and ICAR institutes to organize farmers in several Whatsapp groups that provides need based agro-advisory. Examples like 'Horticultural Solutions' from University of Horticultural Sciences, Bagalkot and 'e-Horticulture' by ICAR-IIHR. Similarly, e-learning modules on carnation cultivation and good agricultural practices for grapes opened new vistas by providing quality information to enthusiast farmers of anywhere around the country. Mobile service providers like IKSL, RML and TCS etc. offers weather, crop and price advisory services through SMS and Voice mail to subscribers for their farm services. Now some KVKs also provide SMS services to the farmers. In this context a HORTNET portal is developed under National Horticulture Mission that allows farmers to get information on all departmental schemes that offer transparency by eliminating duplicity. A Uniform and hassle free online transfer of subsidy to Farmer's Bank Account through EFT is also possible in this approach. Some state directorates readily welcomed the approach like VFPCK of Kerala and HOPCOMS of Karnataka who support farmers through supplying quality inputs and technical advice. Other advanced techniques like satellite remote sensing, Geographic Information System (GIS) and Global Positioning System (GPS) are scientific approach for better management of crop productions.

Initiatives of digitalization scheme

Scheme	Year	Aim
Broadband Highways	2016	Connects 250000 Gram Panchayats through high speed internet by December 2016 with the investment of Rs 32,000 crore, and developed Nationwide internet infrastructure through National Optic Fibre Network (NOFK)
Universal Access to Mobile Connectivity	2018	Villages were not connected through mobile telephone services need to connected by 2018
National Rural Internet Mission	2016	Ensuring government services to each gram panchayats latest by 2017 through Common Service Centres (CSCs), and prepared 150000 Post-Offices as Multi-service Centres by 2016
Early Harvest Programme	December, 2015	To efficient execution, universities were connected by Wi-Fi and make e-mail is the primary source of communication
e- Governance	-	To reduce paper work and smooth functioning of government work
e-Kranti	-	To provide electronic mode delivery service in the field of education, agriculture, health, justice and financial services
Information for All		To provide open access of information and data to the citizens through various portals like Mygov.in etc and link people through social media like Twitter, Face Book etc.
Electronic Manufacturing		Aim is to reduced or zero imports and increase level of local manufacturing of electronic items
Training and Job Creation	-	Train the local youth and students to make them self sufficient

Table a

Govt initiatives of Digitalization

Scheme	Objective
Digi Locker	To store crucial documents
MyGov.in	Online platform to involve citizens through discuss, do and disseminate
eSign Framework	Digitally sign a document for online authentication
Swach Bharat Mission mobile app	To provide information regarding cleanliness
National Scholarship Portal	To easy access to scholarship process
eHospital	To provide online services relating to health
Digital India Platform	To store data in digital form for deliver it when required
Bharat Net	To connect 250,000 gram panchayats
Electronics Development Fund	To support and manufacturing the level of electronic products for providing more job opportunities and reduce the import
Centre of Excellence on Internet of Things (IoT)	To provide transport facility, parking , waste management, water management, smart health services, smart manufacturing and smart agricultural services

Table b

Implication in Horticultural crops for enhancing production

When information and communication technology (ICT) influencing different economic sectors and youths toward agriculture how does it unaffect horticulture sector? After all, the very encouraging scenario of horticultural crops with a voluminous increase in production over the last few years draws attention towards it. Different e-learning modules, web applications and mobile apps are ready to start a new dawn of smart horticulture. Web app named 'Fruits and Vegetables- Crop management and Diagnostic solutions' and mobile app named 'Mobile app for mango cultivation' are developed at Indian Institute of Horticulture (IIHR). Web app includes crop production and management aspects of mango, papaya, pomegranate, brinjal and onion. Photographs of different disease-pest infestation symptoms and their control measures are recommended that will help farmers and stakeholders associated with fruit and vegetable production. Similarly, e-learning modules on carnation cultivation and good agricultural practices for grapes opened new vistas by providing quality information to enthusiast farmers of anywhere around the country. A smart initiation of scientists from SAUs and ICAR institutes to organise farmers in several Whatsapp groups that provides need based agro-advisory. Examples like 'Horticultural Solutions' from University of Horticultural Sciences, Bagalkot and 'e-Horticulture' by ICAR-IIHR. Mobile service providers like IKSL, RML and TCS etc. offers weather, crop and price advisory services through SMS and Voice mail to subscribers for their farm services. Now some KVKs also provide SMS services to the farmers.

HORTNET portal is developed by Agriculture Informatics Division National Informatics Centre under National Horticulture Mission. In HORTNET farmers can directly get information on all departmental schemes, personal counselling is possible, their grievances and redressal can be recorded even it provide transparency by eliminating duplicacy. A Uniform and hassle free online transfer of subsidy to Farmer's Bank Account through EFT is possible in this approach.

In Kerala the vegetable and fruit promotion Council, Keralam (VFPCK) provides farmers facility to access to technology, credit and markets by forming selfhelp groups. The Horticultural producers Co-operative marketing and Processing Society (HOPCOMS) support farmers of Karnataka in scientific fruit crop production by supplying quality inputs and technical advice. Even farmers can obtain prices of horticultural produce through SMS services of HOPCOMS.

For systematic planning of horticulture sector, updated and accurate database is pre-requisite for area expansion, productivity enhancement or creating post harvest handling facilities. Advanced techniques like satellite remote sensing, Geographic Information System (GIS) and Global Positioning System (GPS) are scientific approach for better management of existing situations. Apple orchards of Shimla district of Himachal Pradesh were mapped using high resolution remote sensing data from most advance Indian Remote Sensing (IRS) satellite P6 to develop a systematic management plan for orchards. Geospatial technology also determine horticultural crop yield, quantify and schedule precise and proper fertilizer, irrigation needs, estimate amount of fruits on individual trees, fruit quality, leaf area index or crown cover and application of pesticides for pest and disease management as well. Based on crop modelling and management scenario through remote sensing, demand-supply chain can be established, and government or agriculture insurance agencies can allocate their financial budget [1].

Conclusion

The Digitalization has been no doubt the best initiatives of the modern era as it covers most of the government and private sectors work that could be availed by any person at any time with the less or no cost. Right from linking one's identity to getting information on several public subjects, digitalization has been a boon for the masses. It not only has saved time and efforts of the masses but has put forth the new idea of progress. It simultaneously has opened the idea of safety of data and privacy. If used properly the digitalization can not only be used to contribute but also can benefit million of its users. It will also be helpful in increasing the digital literacy of the Indian masses. Simultaneously a public grievance mechanism can help its users to reach to the service providers in no times. Usability of the digital system can only unfold the use and misuse of the innovation.

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