


Chapter 38

Sustainable Development in Agriculture Through Information and Communication Technology (ICT) for Smarter India: Sustainable Agricultural Development Through ICT in India

Siva Shankar Ramasamy

 <https://orcid.org/0000-0002-6160-5949>

International College of Digital Innovation, Chiang Mai University, Chiang Mai, Thailand

ABSTRACT

This research work deals with the potential evidence to influence ICT towards the agricultural sector. Indian agriculture is gradually languishing due to the lack of technological inputs and advancement. Information with use of ICT for farmers should be gathered and processed properly by networking and ICT. The optimum utilization of ICT will be utilized for the farmers which paved the way for upheavals in agriculture development and our farmers too. E-governance is one of the ways to reach all farmers to promote availability of resources through information and communication technology, and it is a tool to promote sustainable agriculture as well. In India, lots of e-governance schemes and programmes are available for agricultural sustainability.

DOI: 10.4018/978-1-6684-5352-0.ch038

INTRODUCTION

Any Innovative idea in agriculture required requires proper technology such as ICT helps to apply the known knowledge, collect required information, avail experts suggestions, try new predictions and achieve pinnacle in agricultural practices. The information and knowledge sharing from different agriculturally-involved areas, different individuals, agricultural groups through technology improves the traditional techniques which results tremendous changes in production and yielding (Agri Mech, 2018).

In India, Agriculture is the core sector for food security, nutritional security, sustainable development and for poverty alleviation. It contributes approximately 16% of GDP (Agri Mech, 2018). The revolution in agricultural sector includes Green revolution, Evergreen revolution, Blue revolution, White revolution, Yellow revolution, Bio technology revolution and the most recent one is Information and Communication Technology (ICT) revolution.

ICT distributes information among the farmers. It enables them to decide on the cropping pattern, use of high-yielding seeds, fertilizer application, pest management, marketing, etc. So far, Indian farmers rely on their relatives, fellow farmers and input dealers to get information about agriculture. They have been following indigenous production methods on their agricultural lands. With development of science and technology in agricultural sector, a number of alternative option to access modern technologies have become available. It is evident from the replacement of indigenous varieties of seeds by high-yielding varieties with traditional equipment, practices by power tillers, tractors and others machines (Das, 2014).

ICT integrated the mediums like electronic devices, service providers, networks, mobile phones and make them used for agricultural applications. Farmers have been empowered by exchanging their opinions, knowledge and ideas through ICT (WSIS report). In the recent years, benefit of ICT changes the life of small land holders, marginalized and poor farmers in marketing, precision farming to improve their profits. In a previous work (Siva Shankar, 2017) demand on various agricultural subsets were discussed. The demand on loss of the crop, loss on money and loss on human energy is the evident for the use of every resource through Information and technology.

The globalisation affects adversely to Indian farmers, they have to compete with the farmers of developed countries. For that, the farmers must have knowledge about the state of art farming technologies in agriculture. To cope with these challenges posed by the globalisation of agribusiness, the farmers have to produce the quality product at competitive prices. E-agriculture is addressing these challenges and supports to uplift the livelihood of Indian farmers.

E-Agriculture is identified as an important parameter in the declaration and plan of action of the World Summit on the Information Society (WSIS+10, 2014). It has the potential to put India on the higher pedestal of 'Second Green Revolution' by making Indian agricultural sector self-sufficient. Even though, the ICT influenced several criteria in sustainable agricultural development, the study focuses on the impact of the Information and Communication technologies in agriculture such as rural business, digitalisation of land records, dairying and disaster management and preparedness.

IMPACT OF ICT IN RURAL BUSINESS

Socio economic policies are made through the observation of cumulative data which acquired from distributed data base. ICT takes the holistic approach of combining all main aspects of rural business into account to store, share, process, analyze and retrieve the data. The major advantage of Information

8 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/sustainable-development-in-agriculture-through-information-and-communication-technology-ict-for-smarter-india/299281

Related Content

Academy and Company Needs: The Past and Future of NLP

Tiago Martins da Cunha (2022). *Research Anthology on Business Continuity and Navigating Times of Crisis* (pp. 1070-1085).

www.irma-international.org/chapter/academy-and-company-needs/297350

Sustainability and Business Scalability of an Indian Social Enterprise: A Qualitative Analysis

Neena Sinha, Deepti Prakashand Parul Manchanda (2022). *International Journal of Social Ecology and Sustainable Development* (pp. 1-13).

www.irma-international.org/article/sustainability-and-business-scalability-of-an-indian-social-enterprise/293243

Framework Oriented Approach to Eco-Tourism

Sanjay Mohapatraand Tripti Naswa (2013). *International Journal of Green Computing* (pp. 71-82).

www.irma-international.org/article/framework-oriented-approach-eco-tourism/80240

Slow Tourism in the Sustainability of Local Culture

Zeynep Çokaland Nilgün Demirel (2022). *Challenges and New Opportunities for Tourism in Inland Territories: Ecocultural Resources and Sustainable Initiatives* (pp. 131-149).

www.irma-international.org/chapter/slow-tourism-in-the-sustainability-of-local-culture/286851

Security and Privacy in IoT, Fog, and Blockchain Networks

Nikhil Kumar Goyal (2025). *Energy-Efficient Deep Learning Approaches in IoT, Fog, and Green Blockchain Revolution* (pp. 371-398).

www.irma-international.org/chapter/security-and-privacy-in-iot-fog-and-blockchain-networks/376289