

## Chapter 22

# ICTs for Agricultural Development and Food Security in Developing Nations

**Bhattacharjee Suchiradipta**  
Independent Researcher, India

**Raj Saravanan**  
National Institute of Agricultural Extension Management (MANAGE), India

### ABSTRACT

*Development has many faces and complete wellbeing of human population is the most important one of them which in more than one ways involves agriculture and the farming population. Providing needed information at the right time to the rural population is the first step in their empowerment and ICTs can play an immensely important role in providing that information by increasing the dialogue between development professionals and rural people at every stage of development process. According to recent statistics released by ITU, over the last 15 years, ICTs have grown in unprecedented ways providing huge opportunities for social and economic development and this growth can be an advantage to rural advisory services. Providing correct and personalized information needs expert opinions and so multi-stakeholder engagement makes the process more efficient and ICTs provide a very unique and important platform for such collaboration, thus bringing together different stakeholders for efficient partnership. The various tools and technologies can also be tailored according to the needs of end users. But in spite of the advantages, ICTs can only be universally accepted and used when the challenges of accessibility, acceptability, funding, and sustainability are overcome. There are no formula for sure success with ICTs and situation is the best determinant of the strategy to be used and so, a balanced and strategic use of ICTs depending on the clients' needs can best utilize its potential for agricultural development and food security in developing nations.*

DOI: 10.4018/978-1-5225-9621-9.ch022

## **INTRODUCTION**

Global development has many faces and all of them concern human development – taking people out of poverty, assuring food security for everyone, and ensuring a fairly comfortable life. This is a difficult task considering one in nine people in the world suffer from hunger. The problem becomes complicated with the uneven distribution of the famished population with higher concentration in countries of Sub-Saharan Africa where one in four people suffer from chronic hunger, as well as Southeast Asia which has the largest number of undernourished persons (FAO, 2015). One of the largest missions taken worldwide in recent times to ensure human development was the Millennium Development Goals (MDGs) adopted at the Millennium Summit of 2000 of the United Nations, where the member countries promised global partnership and set time bound quantified targets with a deadline of 2015. These MDGs were formulated with the goal of all round human development by eradicating hunger and poverty, providing universal primary education, promoting gender equality and women empowerment, reducing child mortality, improving maternal health, combating major life threatening diseases across the world, ensuring environmental sustainability, and developing a global partnership for development (Millennium Project, 2006). The MDGs targeted world poverty in its many dimensions and by 2015, though the target of halving extreme poverty has been met, it was far from being well distributed across the continents. While a few Asian countries accounted for most of the decline, the absolute number of poor has risen in Sub Saharan Africa.

Poverty and food insecurity in the world right now is predominantly rural with 78 per cent of the world's extreme poor living in rural areas with the majority dependent on agriculture. In addition, almost 60 per cent of child labour worldwide is found in agriculture. The world has the capacity to produce enough food to feed everyone equally, even with the estimated 60 per cent increase in production to meet the projected demands of 2050, yet still, the rural poor - mostly consisted of subsistence producers, family farmers, and landless labourers – live on less than \$1.25 USD per day. After 2015, the development agenda shifted from goals and targets to measurements and means. As a result, discussions on building on innovative ways to address the world's most pressing challenges began and Sustainable Development Goals (SDGs) were implemented. One of the five agents of change identified for transforming development economies is family farmers and small scale producers. Agricultural growth is up to five times more effective than any other sectoral growth in resource poor low income countries in reducing poverty (FAO, 2015) but the problem is more than sustainable agricultural production; it is of connecting the farmers and making them informed, and helping them to organize themselves to get the most out of their investment in their agricultural fields. In so doing, Information and Communication Technologies (ICTs) can be a very important aid to rural advisory services.

## **INFORMATION EMPOWERMENT**

Information is a critical input in agriculture and given at the right time, it can prove to be the most important one (Saravanan and Suchiradipta, 2015b). Providing needed information at the right time to the rural population is the first step in their empowerment and ICTs can play an immensely important role in providing that information by increasing the dialogue between development professionals and rural people at every stage of the development process. Information empowerment of rural people helps them to be active partners in development efforts and not mere beneficiaries. ICTs make the job easier

21 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/icts-for-agricultural-development-and-food-security-in-developing-nations/232976](http://www.igi-global.com/chapter/icts-for-agricultural-development-and-food-security-in-developing-nations/232976)

## Related Content

---

### Could NoSQL Replace Relational Databases in FMIS?

Giancarlo Rodrigues and Alaine Margarete Guimarães (2018). *Innovations and Trends in Environmental and Agricultural Informatics* (pp. 38-57).

[www.irma-international.org/chapter/could-nosql-replace-relational-databases-in-fmis/207270](http://www.irma-international.org/chapter/could-nosql-replace-relational-databases-in-fmis/207270)

### Is There a Future for Cattle Farming?

Clive J. C. Phillips and Matti Wilks (2019). *Environmental, Health, and Business Opportunities in the New Meat Alternatives Market* (pp. 239-259).

[www.irma-international.org/chapter/is-there-a-future-for-cattle-farming/218978](http://www.irma-international.org/chapter/is-there-a-future-for-cattle-farming/218978)

### Microbial Protein: An Essential Component for Future Food Security

Akash Saklani and Navneet (2019). *Environmental, Health, and Business Opportunities in the New Meat Alternatives Market* (pp. 98-123).

[www.irma-international.org/chapter/microbial-protein/218969](http://www.irma-international.org/chapter/microbial-protein/218969)

### Discriminating Biomass and Nitrogen Status in Wheat Crop by Spectral Reflectance Using ANN Algorithms

Claudio Kapp Jr., Eduardo Fávero Caires and Alaine Margarete Guimarães (2018). *Innovations and Trends in Environmental and Agricultural Informatics* (pp. 156-172).

[www.irma-international.org/chapter/discriminating-biomass-and-nitrogen-status-in-wheat-crop-by-spectral-reflectance-using-ann-algorithms/207275](http://www.irma-international.org/chapter/discriminating-biomass-and-nitrogen-status-in-wheat-crop-by-spectral-reflectance-using-ann-algorithms/207275)

### Innovative Technologies for E-Learning of Safety of Agro-Industrial Production

Evgeny Vasilevich Khalin and Elena Evgenievna Mikhaylova (2019). *Advanced Agro-Engineering Technologies for Rural Business Development* (pp. 346-367).

[www.irma-international.org/chapter/innovative-technologies-for-e-learning-of-safety-of-agro-industrial-production/225691](http://www.irma-international.org/chapter/innovative-technologies-for-e-learning-of-safety-of-agro-industrial-production/225691)