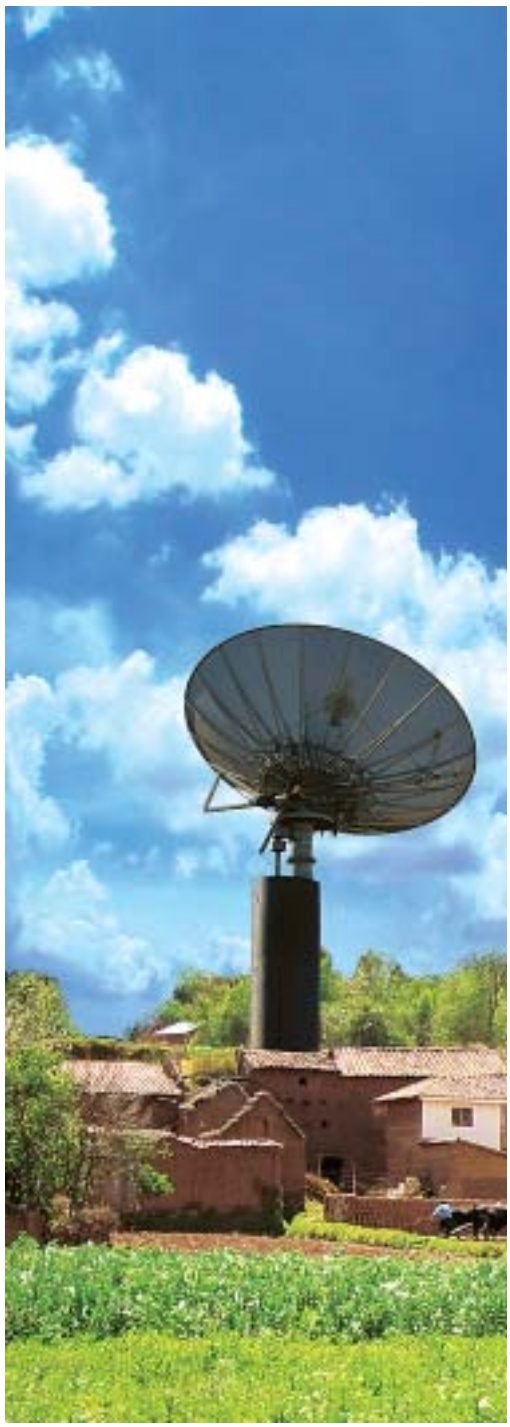
Information and Communication Technology (ICT) in Indian Agriculture

Disseminating Information to Farmers

The Indian agricultural sector is leveraging the Information and Communication Technologies (ICT) to disseminate the right information at the right time. The cost factor in face-to-face information dissemination and the difficulties in reaching the target audiences have necessitated the introduction of ICT in agriculture. This article discusses the different models related to ICT in Indian agriculture like, Kisan call centers, The Gyandoot project, Bhoomi project, Village knowledge centers, and AGMARKNET. In the end, the article discusses the barriers and the outlook of ICT in Indian agriculture.



Introduction

Indian Agriculture contributes 22% of our GDP, and approximately 60% Indians derive their livelihood from the agricultural sector. Today's farmers want not only the two-time bread for their families from their hard sweat, but also surplus food production, which can be sold in the market to get sufficient money to fulfill their other daily needs. Also, private sector initiatives like contract farming have commercialized the Indian agricultural sector. It has also seen many new concepts and theories substituting the traditional methods. Introduction of Information and Communication Technology (ICT) is one of them, which enables the dissemination of requisite information at the right time. This revolution in information technology has made access to the information easy and cost-effective.

ICT –Definition

ICT is an integration of the technologies and the processes to distribute and communicate the desired information to the target audience and making the target audience more participative in nature.

Need of ICT in Indian Agriculture

At present, the ratio of the farmers to the extension worker is 1000:1, which is really very less. Although the appointed Village Local Workers (VLWs) disseminate the information, they hardly accept any accountability. These two issues have created the urgency to help and guide the poor farmers properly. The cost factor in face-to-face information dissemination at the right time, and the difficulties in reaching the target audiences, has also created the urgency to introduce ICT. It is only by the introduction of ICT that information can also be upgraded at the least cost. There are several models of ICTs in Indian agriculture, which have made a significant difference

in the delivery of services in Indian agriculture like, the establishments of Kisan call centers, Gyandoot project, *Bhoomi* project, Village knowledge centers, and AGMARKNET. These are discussed here as below.

Kisan Call Centers (KCCs)

KCCs were launched on January 21, 2004 by the Department of Agricultural and Cooperation. The main technologies involved in Kisan call centers are:

- Desktop computer system with Internet connectivity.
- High bandwidth telephone line (preferably 128 kbps ISDN line).
- Telephones with headphones and teleconferencing facility (if required).

The main aim is to deliver the extension services to the farming community in the local languages. The farmer dials the help line, a toll free number, 1551, and the agricultural graduates provide the initial enquiry. If the queries handled by the agriculture graduates are not satisfactory to the farmers or the farmers want more information, the call is forwarded to level II and level III executives. (See Figure I)

Thus, KCCs are the important information gateway for farmers. The cost to the farmers is almost zero, and they get the response in their local languages. If needed, the agricultural scientists also visit the field to resolve any further queries.

The Gyandoot Project

The Gyandoot project was started in the Dhar district of Madhya Pradesh, which covers five lakh people of 311 gram Pancha yats, 600 villages and 26 *soochnalayas*. *Soochnalayas* are nothing but *information centers* at the village level set up by the Government of India in collaboration with local bodies. This center is operated by unemployed rural youth (*soochaks*), who is thereafter trained. A committee called Gyandoot samiti manages it. The district collector is the president of this *soochnalayas*, and the *sarpanch* of district panchayat acts as the secretary of the committee.

The service covers to provide information about the agricultural produce, auction center rates, copies of land records, *on-line registration of applications, village auction sites* and more. The Village Auction Site project was started in June 2002, which allows farmers and villagers to advertise and sell land, agricultural machinery, equipment, and other durable commodities. Minimum user fees are charged by the information centers to provide information. Like, information about a commodity on sale is provided for a charge of Rs. 25 for three months, and Rs. 10 is taken for finding the list of salable commodities.

Bhoomi Project in Karnataka

This project includes the computerized land records throughout the state. For the same, a farmer can now walk into any of the *taluk* offices and ask for a printout of his computerized land record for a mere Rs. 15 from the land records booth. This computerized land record facilitates the farmers in obtaining, so-called technically, the Rights, Tenancy and Cultivation (RTCs) certificates. RTCs are important as they ensure land ownership, and help farmers in getting bank loans, for which most banks seek some security. Moreover, the *Bhoomi* project also provides online connectivity to various courts to make use of the land records database to settle civil disputes on land ownership and cultivation.

Village Knowledge Centers (VKCs)

Village knowledge centers of MS Swaminathan research foundation were launched in 1998 in Pondichery. The main aim behind the establishment of VKCs was to provide sustainable food security in rural areas of Pondichery. To fulfill this aim, it provides technical information related to agricultural inputs. It helps in procuring quality seeds, in providing information about the daily marked priced from the government as well as private bodies, and advices farmers on rotation of crops as well as about the use of fertilizers and pesticides. VKCs receive information by voice mail, and disseminate it through any public address system. It has also identified 13 districts in Pondichery, where there is a huge potential for agriculture business, and where the government will invest Rs. 170 cr.

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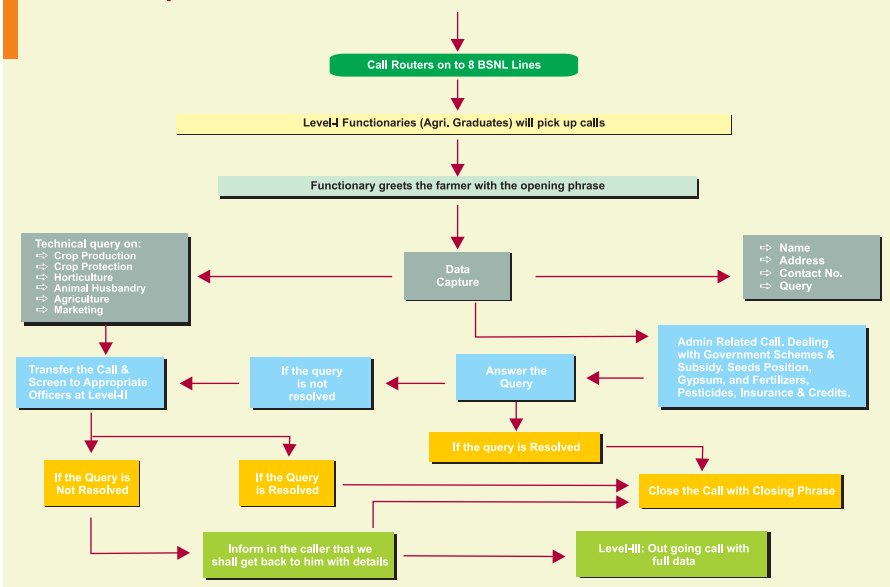
AGMARKNET

AGMARKNET, (Agricultural Marketing Information Network), is a joint venture of the Directorate of Marketing and Inspection (DMI) and the National Informatics Center (NIC). DMI and NIC are the sponsoring agency of AGMARKNET. It has increased the efficiency in marketing activities by establishing a nation-wide information network, which provides details about market functionaries, sold and unsold stocks, as well as the sources of supply and

Figure 1

Operational Mechanism of the Kisan Call Center



Source: http://www.kisancallcenter.net/schematic.htm

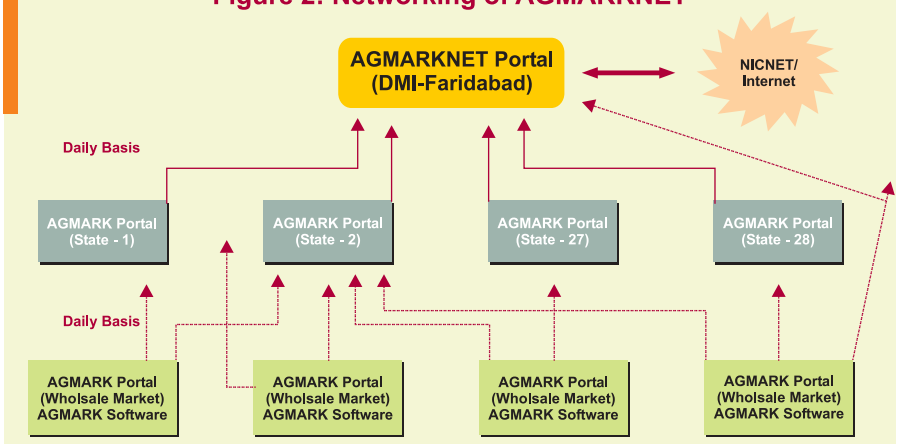
destination. These timely information data are helpful to producers, traders and consumers.

How does AGMARKNET get the Information?

AGMARKNET has been connected to 670 agricultural produce markets and 40 State Agricultural Marketing Boards & Directorates. Each AGMARK portal of wholesale market provides daily information to AGMARK portals of its respective states, and then each state's AGMARK portal sends the information to the AGMARKNET portal. All of these softwares are maintained by the National Information System (See Figure 2).

APEDA (Agricultural and Processed Food Products Export Development Authority), NAFED (National Agricultural Co-operative Marketing Federation of India Ltd), Food Corporation of India, Central Warehousing, SFAC (Small Farmers Agri-Business Consortium) are the main users of the AGMARKNET portal. The food processing units, traders and different village kiosks, to help the farmers in taking the right decisions, mainly use these portals.

Figure 2: Networking of AGMARKNET



Source: Seminar on AGMARKNET by Er. Olga Nongrum, NIC- Jowai

Barriers in ICT Implementation

The path of success is not always sweet. There are indeed more thorns. A few barriers are noted below:

- It indeed sounds unrealistic when someone tries to cater information to farmers and educate them in nearly seven lakh villages throughout India, because it needs sound financial support. One-time major investment in establishing the communication technologies in required places restricts the government's objective of covering more and more people regularly. Therefore, the cost in establishing such communication technology centers can be shared between private and public participation.
- Moreover, farmers sometimes also become averse, as they think that they might lose their traditional methods of cropping practices. In some cases, they simply do not want to utilize the system, even if the cost incurred by the farmers is negligible. Thus, it is the attitude and mindsets of the farmers, which needs to be changed. There is the need to win the confidence of the poor farmers, and make them aware of the benefits of ICT in agriculture.

Future Outlook

Despite the above barriers, the Indian agriculture is bound to adopt and implement ICT, as the Government of India aims to double the agricultural production by 2010, and to increase India's share of the global export to 1.9% by 2007. This aim can be achieved only when there is proper utilization of ICT and more investment in it. As ICT helps in information dissemination in less time with effective ways of communication, its implications cannot be ignored. There is a great scope to implement ICT in order to communicate and integrate the complete agri-food supply chain, as the *e-choupals* are doing in Madhya Pradesh to procure *soyabean*. The other beneficiaries of ICT can be food-processing companies, and suppliers within the agri-food sector. On the other hand, the need to market the agricultural produce at reasonable prices will also change the farmers' attitude, and they will be more dependent on ICT. ICT will, thus, definitely help to sustain the Indian agriculture.

Reference # 03M-2005-02-10-01