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## ICT FOR SUSTAINABLE AGRICULTURE IN KARNATAKA - A STUDY IN MYSURU DISTRICT

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### Abstract

Information is one of the key inputs in agriculture. Providing agricultural information to farmers is primarily vested with the government agencies and is also carried out by private agri-business companies and NGOs. Among the different types of communications/medias accessible for transfer of agricultural information mobile, TV, radio, newspaper, fixed phone and internet are prime ones. In the study, ownership pattern of media reveals that 91.9 per cent of the farmers owned TV connection followed by mobile phone (77.9%) and seems to have decisively edged out radio (26.7%). Though, radio was owned by 26.7 per cent of farmers, but was rarely used. Ownership of newspapers was limited to 7 per cent of farmers, but most of the farmers opined that reading newspapers at the village grocery store or tea shop. Fixed line phones were confined to 3.5 per cent of farm holds. Farmers received agricultural information from a wide range of sources such as District/block level agriculture/horticulture offices, Krishi Vigyan Kendra's, daily local language newspapers, agro portals, television, friends and relatives, helpline, farmers' cooperatives, radio, private input agencies and dealers and mobile phones. Among these, most farmers (61.6%) approached private input dealers followed by Friends, neighbours and relatives (50%) and were also important and reliable sources of information.

**Keywords:** Extension Activities, Mobile Phones, Agricultural Information & ICT tools.

### Introduction

As is true for most sectors, information is one of the key inputs in agriculture. In India, the task of providing agricultural information to farmers is primarily vested with the Public Extension System. A network of the Indian Council of Agricultural Research (ICAR) Institutes, State Agricultural Universities (SAU) and Krishi Vigyan Kendras (KVKs) spread across the country, is responsible for developing, refining and disseminating the latest technologies to farmers. In addition,

extension activities are also carried out by state agriculture departments, private agri-business companies and NGOs. Mass mediated broadcasts and telecast supported by trained agricultural extension personnel at the field level form the backbone of the agricultural extension system in India. For example, All India Radio (AIR) in the late 1950s and Doordarshan in 1966. The National Commission on Farmers has noted that knowledge deficits constrain agricultural productivity in India. It also added that the use

of Information and Communication Technologies (ICTs) for agricultural extension is one way of addressing the information needs of farmers. With the help of ICTs, agricultural extension is expected to become more diversified, knowledge-intensive and demand-driven and thus more effective meeting farmers' information needs (Zijp, 1994). At present scenario, Mobile, TV, radio, newspaper, fixed phone and internet are chief communicating Medias accessible for transfer of agricultural information to farmers. Against this backdrop, this study conducted to know the agricultural information seeking behaviour and the reasons for seeking agricultural information through certain sources/media by the farming community. This present chapter deals with the Karnataka's agriculture profile and performance of ICT tools in Karnataka with respect to agriculture sector. This chapter also reviews on successful ICT programmes in agriculture and allied activities

1. To achieve this, the strategy adopted includes:
2. Encouraging investments in the supply chain infrastructure to reduce postharvest loss.
3. Strengthening linkage between processing enterprises and Research & Development institutes.
4. Fiscal incentives for setting up focused industrial clusters and food processing parks in potential food clusters.
5. Encourage adoption of quality certifications, green and clean practices, energy efficient measures.
6. Declaring the entire State as single zone for availing incentives and concessions.
7. Information & Knowledge Support Centers

Under 2015 policy ICT has been given much importance to enrich the activities in agribusiness. This support shall include website management containing information relevant for agribusiness & food processing sector in Karnataka. The information center shall maintained at abases on agribusiness and food processing enterprises, infrastructure providers, key export destinations from Karnataka, and other such knowledge on agribusiness and food processing in the State. Raitha Samparka Kendras (RSK) / District Industries Centers in Karnataka will be utilised as information centers. Karnataka Agribusiness Development Corporation (KABDC) shall be empowered to

empanel consultants who can prepare bankable project reports. The supporting institutions like University of Agriculture Sciences, Horticulture Sciences University, Veterinary Sciences University, National Bank for Agriculture and Rural Development, Central Food Technological Research Institute, Defence Food Research Laboratory and other accredited institutions, etc. shall be pooled to the fold of knowledge center.

#### **Objectives of the Study**

1. To study the implementation of ICT functions in MYSURU APMC
2. To study the farmers satisfaction towards service provided by APMC.
3. To know the awareness on ICT among farmers in the study area
4. To find out the perception of the farmers about performance of APMC with the usage of ICT.
5. To find out the problems faced by farmers and to suggest solutions for better working.

#### **Methodology of the study.**

Methodology is the very strong and important foundation for any systematic research or investigation or discovery. Methodology is imperative to give the details of the investigation and method adopted by the researcher or investigator in finding out of exact facts and problems of the work. This paper is a personal practical research one All information and data has been gathered from meeting many kinds of farmers and traders (i.e. interview method) coming to APMC Mysuru to sell their produce and trade. I went through secondary sources like reports, web search, journals, news magazine, articles etc. The data collected from basic on performance of various classes of farmers and traders who visited APMC Mysuru in the analysis of data statistical tools have been used to present the data.

The study is based on secondary data taken from published annual reports of APMCs. The published annual reports of APMCs of Mysuru region are collected from the offices of APMCs APMC (Agricultural Produce Marketing Committee). Various publications of the APMCs act as the primary source for the collection of relevant information in this regard. The period considered for study has been for twelve years say from 2001-02 to 2012-2013. Various reports and publication so issued by relevant authorities are used for this purpose. Other information related to the APMCs has

been collected from newspapers, journals and from various relevant concerned Websites.

**Research Methodology**

The sample size of 30 Farmers and 30 Traders choosen randomly. The statistical techniques of as SPSS have been utilized for primary information and table are generated by frequency analysis.

**Data Collection Method**

Regarding to analysing the Primary data which I got it from questionnaire and some secondary data from web sites these following features can be discussed about the working of APMC Mysuru and opinion of the farmers. Statistical Tool for Analysis the SPSS, Frequency Analysis, and will be adapted to analysis of farmers and traders response towards functioning Mysuru APMC. The primary data is gathered through the open – ended and closed ended structured questionnaires to interviewing Traders and Farmers. Secondary data has been collected from APMC Market Mysuru, Karnataka India. And some more required data will be collected through Journals, Reports Government web sites, Books. The data on the implementation of technology its uses and feedback given by farmers and traders in Mysuru APMC is considered.

**CAGR (Compound Growth Rate Analysis)**

The Compound Growth Rate Analysis was carried out to ascertain the data on the implementation of technology and its uses and feedback given by farmers and traders in Mysuru APMC is considered and is analysed using.

**Farmers opinion towards ICT in Mysore APMC**

Distance from Native to APMC	F	%
20-40 kms	6	20
40-60 kms	9	30
60-80 kms	7	23.3
80-100 kms	7	23.3
More than 100 kms	1	3.3
<b>Education Status</b>		
Illiterate	1	3.3
Primary	5	16.7
High School	5	16.7
Secondary	15	44
Graduate	1	3.3
Post-Graduate	3	10

<b>Family Income</b>		
400000-600000	1	3.3
200000-400000	7	23.3
80000-200000	10	33.3
300000-80000	3	10
More than 600000	9	30
<b>Mobile Phone Users</b>		
Yes	22	73.3
No	8	26.7
<b>Internet connction</b>		
Yes	12	40
No	18	60
<b>Commodities Sold in APMC</b>		
Oil seeds	2	6.6
Pulses	5	20
Grains	4	13.3
Vegetables	9	30.3
Forest produce	6	20
Cereals	4	13.3
<b>Frequency of visits to APMC</b>		
Weekly	7	23.3
Monthly	6	20
Seasonal	17	56.7
<b>Preference of cash transactions</b>		
Online	4	13.3
Offline	26	86.7
<b>Constraints in Trading commodities</b>		
Existance of middleman	11	36.7
No proper price fixation	11	36.7
<b>Access to SMS facility</b>		
Yes	21	70
No	9	30
<b>Sources of Market Infomration</b>		
Internet	1	3.3
television	14	46.7
SMS	4	13.3
Newspaper	8	26.7
Radio	1	3.3
Magazine	2	6.7
<b>Sugesstion to improve the APMC</b>		
Drying yard	1	3.3
Cold storage	17	56.7
Elimination of middleman	2	6.7
Reduce tax rate	1	3.3
Monitoring APMC working	7	23.3
Warehouse facility	2	6.7

The study indicates the Farming/Native places of the Farmers. It shows out of 30 farmers, 43 per cent of the farmers are from Nanjangud taluk. 26 per cent of the farmers are from Gundulpet. The distance from native/farming place to APMC. It shows out of 30 farmers, 30 per cent of farmers come from 40-60 kms far and 23 per cent of farmers come from 60-80 and 80-100 kms far. The Age of the Farmers. It shows out of 30 farmers, 30 per cent of farmers age between 25-35 years, 23 per cent of farmers Age between 35-50 years and 50-70 years. It shows out of 30 farmers, 100 per cent of farmers are Male there are no female farmers were available in Mysuru APMC. It shows out of 30 farmers, 44 per cent of farmers have completed their PUC, 16 per cent have completed their primary and secondary education.

The table 1 indicates the income of the farmers. It shows out of 30 farmers, 33 per cent of the farmers earn 80000-200000, 23 per cent of the farmers earn 200000-400000. It shows out of 30 farmers, 53 per cent of the farmers 4-5 members in families depend on agriculture, 26 per cent of the farmers 8-9 members in families depend on agriculture.

It shows out of 30 farmers, 73 per cent of the farmers use mobile phones and 27 per cent of the farmers do not use mobile phones. The table 1 indicates the No. of farmers having internet connection in their mobile phones. It shows out of 30 farmers, 40 per cent of the farmers have internet connection in their mobile phones and 60 per cent of the farmers do not have internet connection in their mobile phones. The table 1 indicates the No. of farmers selling in APMC. It shows out of 30 farmers, 97 per cent of the farmers sell in APMC and only 3 per cent of farmers do not sell in APMC Mysuru. It shows out of 30 farmers, 30 per cent of the farmers sell vegetables in APMC and 20 per cent of farmers sell pulses and forest produce like tamrind in APMC Mysuru. out of 30 farmers, 57 per cent of the farmers visit and sell according to seasonal in APMC and 23 per cent of farmers visit and sell weekly in APMC Mysuru. out of 30 farmers, 53 per cent of the farmers are convenient with the market location and 23 per cent of farmers are not convenient with the location of the APMC Mysuru. 63 per cent of the farmers are convenient with the market hours of operation and 37 per cent of farmers are not convenient or satisfied with the

hours of operation of the APMC Mysuru.

### Conclusion

The Indian farmer and those who are working for their welfare need to be e-powered to face the emerging scenario of complete or partial deregulation & reduction in government protection, opening up of agricultural markets, fluctuations in agricultural environment and to exploit possible opportunities for exports. The quality of rural life can also be improved by quality information inputs which provide better decision making abilities. IT can play a major role in facilitating the process of transformation of rural India to meet these challenges and to remove the fast growing digital divide. The rapid changes in the field of information technology makes it possible to develop and disseminate required electronic services to rural India. The existing bottlenecks in undertaking the tasks need to be addressed immediately. A national strategy needs to be drawn for spearheading IT penetration to rural India. A national coordinating agency with an advisory role can act as a catalyst in the process. No single institution or organisation alone can succeed in the task of e-powering farmers and rural India. At the same time, scattered and half hearted attempts can not be successful in meeting the objective. Industries with major stake in villages, such as fertiliser sector, should come together to provide the initial impetus.

The success of any IT based service to rural India hinges on evolving a proper revenue model for the dissemination points. The 'clicks & mortar' rural kiosks should be integrated with the 'bricks & mortar' industry to make them sustainable ventures by making them a business gateway to rural India. The information kiosks can draw revenue from the industry by providing and disseminating required services. Once these dissemination points prove to be economically viable, the IT revolution in rural India will require no crusaders.

This chapter reviewed some of the agricultural extension approaches currently in operation in Karnataka and also revealed policy interventions that promotes ICT for agricultural extension in Karnataka. In the contest of providing information system, an innovation can emerge from many sources and through complex interactions and knowledge flows, with the farmer being at the centre of the process. Some of them are Kissan Call Centre,

Karnataka Government Websites of Agriculture and allied sector, innovative mobile applications like e-mandi, Krishi Vigyan Kendras, All India Radio, television, agricultural magazines, newspaper and so on. There is no scarcity of information sources, but the receivers are very less because of lack of awareness on ICT programmes and their utilization. Hence, public sector should provide information at grass root level for accessing innovative technologies and innovative knowledge to create smart farming community. The agricultural produce market committee provides complete control of legal marketing of agricultural produce of farmers. After independence it is a best progressive factor in the field of agriculture. This marketing system is best origination with longer vision which can provide cost savings, increasing fair price and better decision making farmers and the trained staff of APMC should make a thorough study of agricultural environment before deciding the marketing strategies. Then everybody can

expect. The lessons learnt from the Karnataka's experience can provide useful information for implementation of the same service in improved formats in other states and also introduction of similar type of services at the AGMARKNET (Agricultural Marketing Information Network, which is act wise nationwide information network for speedy collection and dissemination of market information in the country) and further, Govt. should take a special interest in establishing a separate agency for dissemination of all the agricultural information in the local language to all the states stakeholders at free of cost in order to reach large proportion of beneficiaries throughout India.

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