

Chapter 28

ICT application in fisheries

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Introduction

The world is undergoing an Information Communication Technology (ICT) revolution, a revolution that has enormous socio-economic implications for the developed and developing countries. The 'fisheries and aquaculture sector' is recognized as the sunshine sector in Indian agriculture as it provides employment opportunities, nutritional security and foreign exchange earnings through fish export. The ICT has completely changed format of the dissemination of information into digital with worldwide approach and ICT has become first and foremost need of Fisheries academician, researchers and extension workers. Fisheries researchers bring innovation and the extension worker has to transmit the scientific information to the fish farmers.

Importance of ICTs in Fisheries

New information and communication technologies (ICTs) are being used across the fisheries sector, from resource assessment, capture or culture to processing and commercialization.

- Global Positioning Systems (GPS) used for navigation and location finding, mobile phones for trading, information exchange and emergencies, radio programming with fishing communities and web-based information and networking resources. (FAO, 2007).
- Mobile phones in India have brought about a tremendous change in fisheries sector. One result was a dramatic improvement in the efficiency and profitability of the fishing industry. As mobile phone service spread, it allowed fishermen to land their catches where there were wholesalers ready to purchase them. This reduced waste from between 5-8 per cent of total catch to close to zero and increased average profitability by around 8 per cent. At the same time, consumer prices fell by 4 per cent.
- The internet is emerging as a tool with potential to contribute to rural development. Internet enables rural communities to receive information and assistance from other development organizations. It also offers opportunities for two-way and horizontal communication and for opening up communication channels for rural communities and development organizations. It can facilitate dialogue among communities and with government planners, development agencies, researchers, and technical experts: encourage community participation in decision-making; coordinating local, regional and national development efforts for increased effectiveness. Help agricultural researchers, technicians, farmers and others in sharing information. Internet can also give a vast global information resource. The Internet has proven valuable for the development of Fisheries in developing countries like India.

ICT Initiatives in Fisheries Sector

Agricultural Technology Information Centers (ATIC)

- The establishment of agricultural technology information centers (ATIC) can forge a better interaction between researchers and technology users. ATIC acts as a single window system with an objective to help farmers and other stakeholders to provide solutions to their agriculture related problems. This also helps in providing technological information along with technology inputs and products. Such information is useful for farmers, entrepreneurs, extension workers, NGOs and private sector organizations.

Agricultural Knowledge Management Unit (AKMU)

- Agricultural Knowledge Management Units (AKMU) in ICAR caters to meet the ITC needs of the institutes by providing and maintaining the Internet, Email, Video Conferencing and other computer related facilities. AKMU also periodically updates Institute Website and Personnel Management Information System Network (PERMISnet) of the employees of the institute. AKMU also supposed to maintain the database of scientific research data generated as output of each research project for knowledge sharing and policy formulation.

KisanCallCentre

- The Department of Agriculture & Cooperation (DAC), Ministry of Agriculture and Farmers Welfare, Govt. of India launched Kisan Call Centers across the country to deliver extension services to the farming community. A Kisan Call Centers consists of a complex of telecommunication infrastructure, computer support and human resources organized to respond the queries raised by farmers in their local languages. Subject Matter Specialists (SMS) using telephone and computers, interact with farmers directly to understand the problems and answer the queries at the call centers. There are call centers for every state that are expected to handle traffic from any part of the country.

Helpline

- The helplines address queries related at specific hours. The helpline number is advertised through mass media viz., radio and press.

Aqua service centers

- These centers offer services like soil and water testing, feed analysis, seed quality testing (PCR test), disease diagnosis and market intelligence. They also sell inputs such as feed, fertilizers, pesticides, other therapeutics etc.

One Stop Aqua Shop (OAS)

- It is intended that OAS would provide better access to farmers regarding appropriate aquaculture technology as well as information on government schemes and rural banking and micro finance. It was also envisaged that OAS would sell fish seed and other inputs. The shop is a single outlet for all inputs that a farmer may require in the cultivation of fish. The inputs include fish seed, fertilizers, chemicals etc. The OAS is also helping farmers in providing information on fish farming through information brochures

Aqua Choupal

- Aqua choupal, the unique web based initiative of ITC Ltd. offers the farmers of the state of Andhra Pradesh all the information, products and services they need to enhance

productivity improve farm gate prize realization and cut transaction cost. Farmers can access information on weather, scientific farming practices and market prices through a web portal. Aqua choupal also facilitate the supply of high quality farm inputs as well as purchase of shrimps at their doorstep.

Rural Knowledge Centre

- Its primary aim is to set up multipurpose resource centers at the villages of the country. Each Knowledge center is run by local self-help groups, and cater to knowledge based livelihoods and create income avenues for rural people, farming communities and disadvantaged people.

Cyber extension

- The internet is emerging as a tool with potential to contribute to rural development. Internet enables rural communities to receive information and assistance from other development organisations: offer opportunities for two-way and horizontal communication and for opening up communication channels for rural communities and development organisations.

Information Systems

- An information system (IS) is the [information and communication technology](#) (ICT) that an organization uses, and also the way in which people interact with this technology in support of business processes. An information system is an organized system for the collection, organization, storage and communication / dissemination of [information](#). More specifically, technicians or extension workers either develop or use information systems to collect, filter, process, create and distribute informations. Some of the information systems developed by Indian Council of Agricultural Research (ICAR) are listed below

1. KRISHI - <https://krishi.icar.gov.in/>
2. CaneInfo- <http://caneinfo.icar.gov.in/>
3. Expert system on Wheat - <http://www.iasri.res.in/wheat/>
4. CeRA- <https://icar.org.in/content/consortium-e-resources-agriculture-cera>
5. KVK Portal - <https://kvk.icar.gov.in/>

- A complete list of knowledge initiative in ICAR is give in the ICAR website (<https://icar.org.in/>) and other knowledge initiatives are available in the URL <https://icar.org.in/content/technologies-and-knowledge-resources>

Mobile Applications

- A mobile app or mobile application is a [computer program](#) designed to run on a [mobile device](#) such as a [phone/tablet](#). Mobile apps provide the information on different technologies to the end user in their fingertips. Interactive mobile apps provide a two way communication between the technologists/ extension workers and end users. Indian Council of Agricultural Research (ICAR) has developed almost 111 mobile applications for the end user to disseminate the knowledge in the agriculture and allied sectors. The list of mobile applications are available in the link <https://icar.org.in/mobileapp>

E-Databases

- The networked information sources- locally informed databases, regional or statewide consortia licensed databases, aggregated databases, publishers databases, public available

(web) resources etc. E - databases can be exploited to acquire the information which could facilitate the extension activities.

E- Journals

- The e-journal is an electronic form of a journal, serial magazine, newspaper, newsletter, continuing directory, annual report and some monographic series if classed together. A journal-like electronic publication with no print counter part made available via the web is an electronic journal.

E-Books

- An e-book is an electronic version of a traditional print book that can be read by using a personal computer or by using an e-book reader. E-books can be useful to acquire rapid information which would be helpful to address the various issues in the culture, harvest and post-harvest fisheries.

General uses and advantages of e-resources

There is greater need to transform the agricultural, specifically fisheries sector by taking into account its achievements and capabilities. The strong and sustaining ecological resource base, rational and pre-emptive policy, public and private investments, good governance, etc holds the key for sustainable growth of the sector. The fuller utilization of its potential can be achieved through infrastructure, investments, technology intensification, diversification and value addition. In a nutshell, various issues related to fishing activities in India need to be addressed in a time bound manner with mutual understanding and cooperation between public and private sectors.

References

1. <https://icar.org.in/>