Formulation of Forms

The forms intend the users to add, modify and view records. User panel form has been designed and customized to generate various reports to different queries. The designed user panel is given in Figure 3. Form Controls are provided that directs the user to generate various customized report like general report, commodity wise report, year wise report, period wise report etc.

Fig. 3 *User panel Form of customized database*

Generation of Reports

Reports enable the user to format, view and print the information from the database. The database facilitates making various reports through customized query such as general report, commodity wise report, year wise report, period wise report, commodity – year wise report and commodity – period wise reports. A sample of commodity wise report is given in Figure 4. Different buttons are provided to export the contents of report to external documents in the forms such as PDF/ MS Excel/ MS Word. The user can print or save the report to desired destination of the local computer.

Fig. 4 *The sample of commodity wise report*

References

https://docs.microsoft.com/en-us/office/client-developer/access/desktop-database-reference/microsoft-access-sql-reference

https://www.tutorialspoint.com/ms_access/ms_access_tutorial.pdf

ICT mobile applications for laboratory testing and training facilities provided by ICAR-CIFT

Chandrasekar V.*, Zynudheen A., Mohanty A. K. and Ravishankar C.N.

ICAR - Central Institute of Fisheries Technology, Cochin - 682 029

*Email: vcsecon@gmail.com

ICT application in fisheries

Potential stakeholders in fisheries sectors remain underprivileged due to lack of their access to critical information which limits them from availing the benefit of government incentives, support service, markets and credit facilities to improve their productivity and quality that support their livelihood. Presently, the advancement of ICT technologies has brought a radical transformation in the existing extension information system and envisaged ICT enabled innovative fisheries information system to meet the emerging challenges in the sector by making

it easy accessible by all section of the society with a variety of advantages like timeliness, 24 hours X 7 days connectivity, time saving and cost effective. As a global initiative towards digital agriculture, the Interactive Information Dissemination System (IIDS 2.0) platform has gained momentum in fisheries to create a major breakthrough in information diffusion process as a means of providing knowledge based inputs regarding improved technologies on various aspects, capacity building programmes, weather forecasts, best fishing zones, market prices, quality of water, soil etc. The android based smart phone application is considered as the most effective tool allowing access to a broad spectrum of stakeholders both to ensure effective sharing of information and proper use of services rendered by extension agencies, to improve their productivity and family income.

Today, India is one of the fastest growing digital market in the world with a record of 1.2 billion mobile phone users next to China and 560 million internet subscribers, which is increasing day by day (*GOI,2019*). As per the *Newzoo's (2019)* Global Mobile Market Report, in India about 36.69 per cent of total population (502.2 million) are actively using smart phone. With this immense strength, digital India has rightly ventured into fisheries sector to empower the relevant stakeholders to innovate and expand the network so as to realize the full potential of transforming Indian fishery ushering into knowledge based blue economy.

Now-a days, ICT is used effectively for the growth of fisheries sector, particularly on seafood export both at domestic and international market which significantly reduce its operational cost. In addition, HTML based Webpage & expert systems have been developed by different fisheries organization, research institutions and industries for easy and convenient information flow to fishery stakeholders on various technologies, schemes, facilities and services.

ICAR-CIFT promotes ICT based information system

ICAR-CIFT, being a premier research institute in harvest and post-harvest realm of Indian fisheries, has a prominent role in strengthening the sector with cutting-edge technologies, capacity building of human capitals, quality inputs and services. Further, the institute has a significant contribution towards modernization of seafood industries in India, thus establishing its strong hold to make India as one among the major exporter of seafood products in the world. With the unique recognition by FSSAI as the only Referral and Reference Laboratory in the country for fish and fish-based products, ICAR-CIFT acts as one-point solution for testing of all fishery products of commercial importance mainly for its export purpose as well as gear materials, packaging materials microbiological aspects, quality of ice and water etc. ICAR-CIFT, Kochi has rightly utilized the digital platform to bring new generation of information diffusion system with more sustainability, scalability and replicability beyond certain boundaries. **"CIFT Lab Test"** and **"CIFTraining"** are two interactive mobile applications developed by ICAR-CIFT to widen its reach to all stakeholders.

Block based android mobile applications

1. *CIFT Lab Test* Mobile App

ICAR-CIFT developed *CIFT Lab Test* is an android based Mobile Application envisages to provide the real time information related to different types of sample testing and analysis as mentioned above covering more than 221 parameters (**Fig.1**). Each sample information contain quantity of sample required for the analysis, as mentioned above in the different laboratories of the institute approximate duration required for completion of sample analysis days, acceptable limits etc. (**Fig.2**). This real time android based mobile application is working in online mode efficiently in a good network coverage area. The changes if any in the analytical protocol
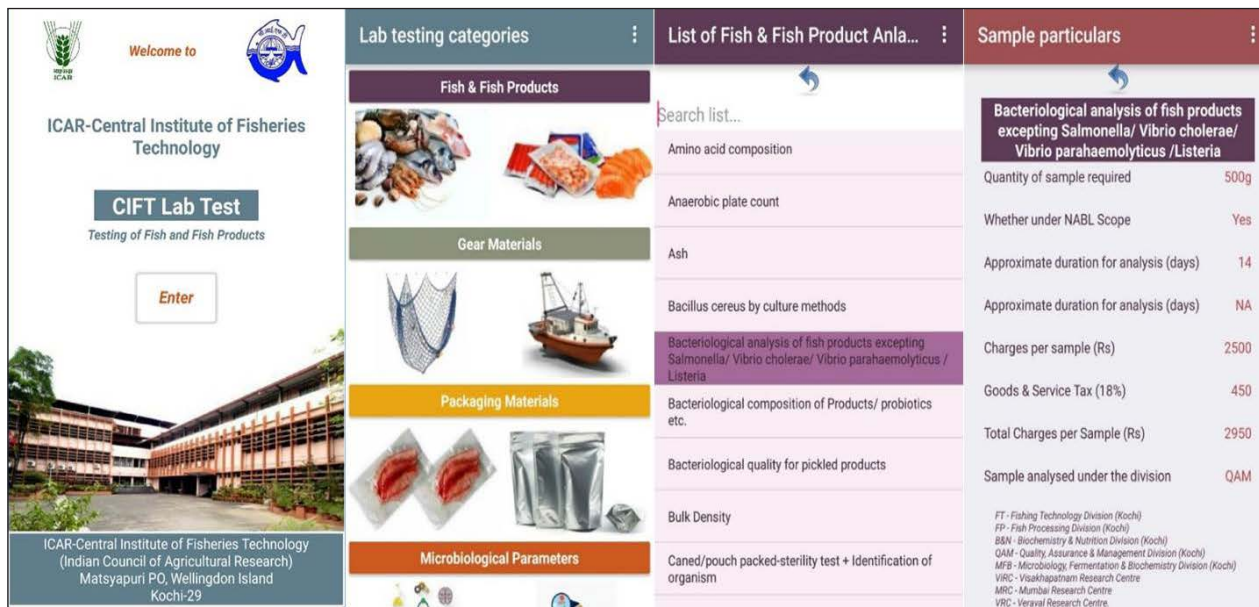
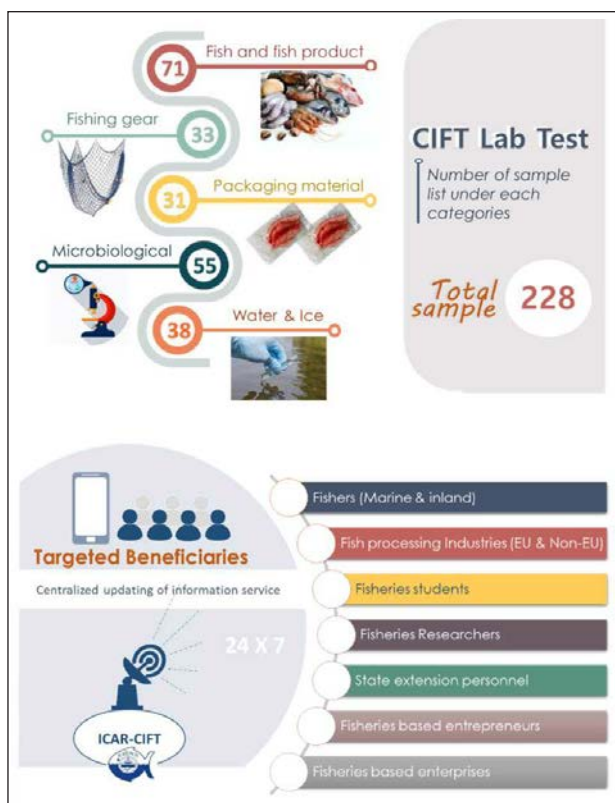Fig. 1 *Screen shot of "CIFT Lab Test" Mobile Application*

Fig. 2 *IIDS platform of "CIFT Lab Test" Mob App*

would be updated automatically in the software. Finally, the user can click the payment link which directly connect to the payment gateway. They can select the category of sample, test fee and payment can be made. The link for brochure has been provided in the reference section. The Mobile

App can be directly downloaded from the Google Play Store for use.

This Mobile App may be useful for the aquaculture farmers, processing industries and other stakeholders in the sector to access the desired information round the clock for test report and cost particulars etc. available at 24 Hours X 7 Days.

2. *CIFTraining* Mobile App

ICAR-CIFT developed, innovative Mobile Application "*CIFTraining*" provides a complete package of information on ICAR-CIFT Training programmes. This App is highly useful for the fisheries students, researchers, industry personnel of training programmes in the field of Fishing Technology, Fish Processing, Biochemistry & Nutrition, Microbiology, Quality control, Engineering and Extension & Economics. The "*CIFTraining*" Mobile App has embedded with a total list of 68 types of clientele based trainings programmes available in ICAR-CIFT (Fig. 3), which contain 60 regular training courses along with 2 comprehensives, specialized and certified courses.

The "*CIFTraining*" mobile app will help the stakeholders to search the training of their interest and see the training programme details like course
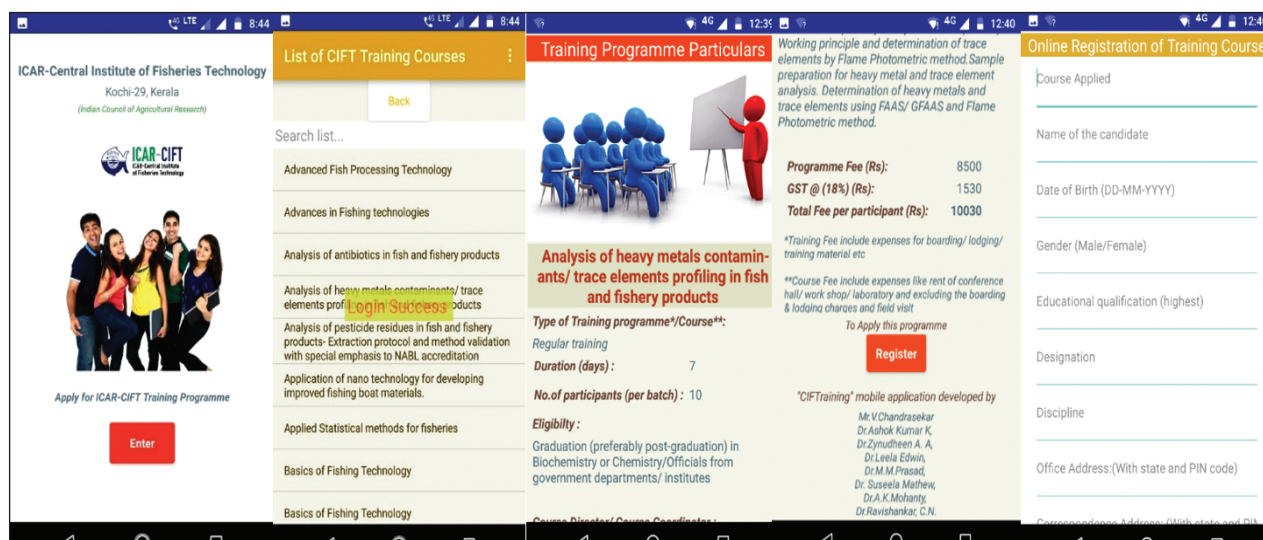
Fig. 3 *Screen shot of CIFTraining Mobile Application*

contents, course fee, duration, eligibility course content, place (Kochi, Visakhapatnam, Mumbai & Veraval) and other facilities at fingertips. Apart from that the online registration form is provided for the interested candidate filling their information details and facilities for online payment.

Google play store link to access the CIFT Lab Test & *CIFTraining* Mobile Applications and leaflets were given below:

Google play store link

1. https://play.google.com/store/apps/details?id=com.vcsecon.CIFT_Lab_Test

2. https://play.google.com/store/apps/details?id=com.vcsecon.CIFT_Training_new

Leaflet link:

1. https://krishi.icar.gov.in/Technology/downloadpatent?action=download&fileName=mediaResourceUpload1575358598_CIFT%20Lab%20Test%20final.pdf

2. https://krishi.icar.gov.in/Technology/downloadpatent?action=download&fileName=mediaResourceUpload1575358554_CIFTraining.pdf

Reference:

GOI (2019), Report on "India's trillion-dollar digital opportunity", Ministry of electronics & information technology, government of India

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Immediate impact of COVID-19 pandemic on seafood processing and exports

Nikita Gopal, Mohan C.O., Ashok Kumar, Narasimha Murthy L., Madhusudana Rao and Ravishankar C.N.

ICAR - Central Institute of Fisheries Technology, Cochin - 682 029

*Email: nikiajith@gmail.com

As part of regulatory measures to contain the COVID-19 pandemic lock down was enforced in the country on 25 March 2020. The lock down was extended twice with the phase 3 being upto