

**Table 3. Monthly family expenditure on dry fish (n=399)**

Expenditure	Ernakulam (Rs)	Kozhikkode (Rs)	Palakkad (Rs)	Kottayam (Rs)	All districts (Rs)
Avg. Exp.	92	170	227	197	160
Lowest Exp. recorded	20	10	50	20	10
Highest Exp. recorded	750	500	700	600	750

Survey indicated that the average monthly family expenditure towards dry fish purchase as Rs. 160 for the districts with highest average expenditure of Rs. 227 for Palakkad and lowest of Rs. 92 for Ernakulam (Table 3). Limited purchase of dry fish in reduced quantities was recorded in all the districts studied contributing to low average monthly family expenditure towards dry fish purchase.

Dry fish consumption pattern was found to be declining with majority of the fish consumers reporting no consumption in Kottayam and reduced frequency of consumption in three other districts studied. It is reported to be attributed to the belief among consumers that dried fish contribute to lifestyle diseases and fear of the use of harmful chemicals in fish drying were the major reasons attributed for decline in consumption of dry fish by respondents.

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## Design and Development of Customized Database on Fish Import to India

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A customized database on fish import to India in terms of quantity and price under different harmonized system (HS) code has been designed and developed in Microsoft Office Access (MS

Access). The aim of the database is to provide customized fish import data to the user. The database design comprises of creating various database objects such as tables,

queries, forms and reports; these objects are intended to store data, write, search queries for retrieving data, add, edit or delete data records from the table and to generate compiled and formatted data outputs from the database. Although, the objects are designed as independent elements, they interact with each other to perform the process of storing, compiling and fetching data to the user. The advantage of this database over the existing database is that the user can fetch either summarized or customized data on fish import to India on a single click. The developed database will be useful to students, researchers, academicians and policy makers and is available with ICAR-CIFT, Cochin.

### Formulation of Tables

A database stores data as rows and columns called tables. In Microsoft Access, each row in a table is considered as a unit of information, here the table holds particulars such as commodity code, commodity name, quantity of item imported in the unit of kilogram, price of the commodity in United States (US) \$ and the year of import. Likewise, each column categorizes information on the basis of their data type. The data fields

such as HS code, year, quantity (kg) and price (US \$) were declared as number and name of commodity as text, respectively. The tables defined for storing input data are given in Figure 1.

### Formulation of Queries

Queries are specific search conditions defined to search, compile and retrieve data from the database. The sample screen shot of queries to retrieve all the data records is given in Figure 2. Similarly, different queries were designed to retrieve commodity wise data, year wise data, period wise data, commodity - year wise data and commodity - period wise data.

```
SELECT * FROM [Table Fish Live]
UNION
SELECT * FROM [Table Fresh Chilled Whole Fish]
UNION
SELECT * FROM [Table Frozen Fish Excluding Fillets]
UNION
SELECT * FROM [Table Fillets Meat Mince Except Liver Roe]
UNION
SELECT * FROM [Table Cured Smoked Fish Meat]
UNION
SELECT * FROM [Table Crustaceans]
UNION
SELECT * FROM [Table Molluscus]
UNION
SELECT * FROM [Table Aquatic Invertebrates]
ORDER BY [HS Code];
```

Fig. 2 Sample Query to retrieve the data



Fig. 1 Tables created for the database

## 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.

Year	HS Code	Commodity Name	Quantity (Kg)	Price (US \$)
2013	308	Aquatic invertebrates, other than crustaceans and moll	40	754
2014	308	Aquatic invertebrates, other than crustaceans and moll	107	1750
2018	308	Aquatic invertebrates, other than crustaceans and moll	986	7920
2019	308	Aquatic invertebrates, other than crustaceans and moll	598	2708

Fig. 4 The sample of commodity wise report

## References

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

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## 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