Fish consumption pattern in India, exports - Overview

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INDIA'S economy is the seventh-largest in the world and since the last quarter of 2014 it became the world's-fastest growing major economy, replacing the People's Republic of China.

The Indian economy is on a robust growth trajectory of around 8 per cent with a GDP of $2.38 trillion. The long-term development perspective of the Indian economy unlike the Western world is sustained due to the continued contribution of the different sectors in the growth and development viz., agriculture (17%), industry (26%) and services (57%). The country with its thriving young population, rising foreign exchange reserves, booming capital markets, spiralling savings and investment rates, increasing terms of trade and increasing integration into the global economy has found added impetus in emerging as a global leader.

Paradigm shift

India has made a paradigm shift in the food availability transforming from a begging bowl to bread basket during the course of around seven decades. The fisheries sector registered a sustainable growth rate of over 10 per cent and contributed over one per cent of India's annual gross domestic product during the last decade. The vibrancy of the sector can be visualised by the 12–fold increase that India achieved in fish production in just six decades, i.e. from 0.75 million tonne in 1950-51 to 10.16 million tonne during 2014–15. The sector offers an attractive and promising future for employment, livelihood, and food security. The fisheries contribution to GDP is around Rs 118,000 crore contributing to around 0.83 per cent of the total GDP. The sector contributes around 4.75 per cent of the agriculture GDP.

Fish has become an integral constituent in the food basket of the Indians as it is considered to be a healthy food with high level of edible protein. One of the major advantage of including fish in the consumption basket is its availability of wide range of products across a huge price range and geographical spread across the different states.

Both for poor & rich

On one side, fish could be a poor man's protein (low value fishes) ensuring food security, and on the other, a delicacy offered at huge prices and comparable with other protein sources (high value species like shrimps, pomfrets and seer fishes).

It's been estimated that around 60 per cent of the Indian populace consumes fish and the consumption pattern varies spatio-temporally and across the different social fabric. The annual per capita consumption of fish for the entire population is estimated at 5-6 kg whereas for the fish eating population it is found to be 8-9 kilogram, which is a poor 50 per cent of the global rates.

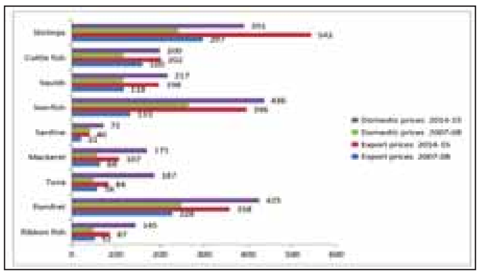

Figure 1- Comparison between average domestic and export prices of important species

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Fish production is 10.16 MT with marine contributing 3.59 MT

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However, the Indian Council of Medical Research recommends this to be 12 kg per annum. The regional tastes and preferences of fish eating population of the country and the frequency of fish consumption also exert substantial influence on the market.

It is estimated that the Indian population by 2020 may cross the 1.4 billion mark. The increasing population necessitates the need to identify and harness cheaper protein sources like fish. The fish produced in the country exhibits competing use / users within domestic and international markets. The export sector grew at around 10 per cent over the years, the export earnings during 2014-15 was Rs 33,411 crore (US$5.51 billion). India's seafood exports surged to new heights and continued unabated amidst global recession. The species diversification in the export basket indicated that almost all the varieties including sardine and mackerel which are often the most consumed fish in the domestic market are exported. However the export earnings while decomposed initiated that the revenue is mostly through "quantity effect" rather than "price effect."

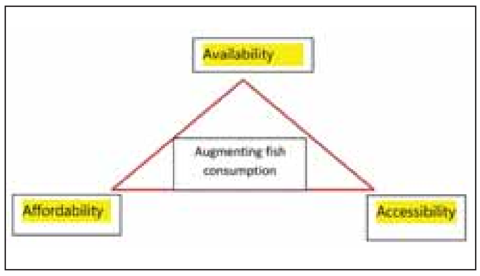

Figure 2. Criteria for augmenting domestic fish consumption

The value of marine fish landings during 2014 at landing centre level was Rs 31,754 crore and at the retail level, the estimated value was Rs 52,363 crore registering an increase of 12.1 per cent over the year 2013. However there appears significant price variation of fish across the states, seasons and species. The domestic fish market is growing significantly with population and income growth rates, changes in food habits, increase in awareness on nutritional qualities of fish, improvements in transportation, storage and processing facilities and access to quality fish.

Fish food security

The fish food security challenges depend upon the performance of the capture and culture sector. The present fish production is 10.16 million tonne with a contribution of 3.59 million tonne from marine sector and 6.57 million tonne from inland sector. The marine fisheries sector is facing various limitations arising due to overexploitation, targeted fishing, juvenile fish capturing, property rights regime, degradation of habitats and open access to fishery. Improvements shown in inland sector are also sporadic due to various issues in the sector. The problems in inland sector include less area developed under aqua farming, provision of low level of supplementary feed, non-availability of fingerlings of desired size and species, lack of diversification of aquaculture practices, lack of standardised technology, non-development of location-specific

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Fish poses considerable future domestic food security challenges

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culture technology, low production levels of different aquaculture systems, lack of availability of credit facilities and aquaculture insurance schemes.

Fish also poses considerable domestic food security challenges for the future on account of its unregulated multiple uses including exports, industrial uses, offal for reductions and wastages, and discards, live fish feeds for capture-based aquaculture, fish meal industry and as baits industry. In addition, the fish productions and consumption centres are geographically separated leading to issues of increasing price spread and quality issues. Of late the fish prices have spiralled up leading to issues of fish availability, accessibility and affordability.

The demand of fish is likely to increase in the coming years. The production has to be nearly doubled by 2030 in order to supply the fish at the present level of consumption. The studies on the fish demand pattern and its determinants studies across the country indicated that there existed a huge willingness to pay for fish consumption for high value fishes. The willingness to pay for fish had positive association with age, education, income, price of substitutes and taste and preferences. The willingness to pay was adversely affected by proximity to the buying source. It was surprising to find that the consumers were willing to pay for high value fishes more, indicating high consumer surplus.

Paradox of export

The non-availability of fish in the domestic fish market will lead to a situation wherein the domestic consumers are devoid of fish in the market at affordable prices. The domestic fish food security is questioned considering the fact that the export prices are lower than the domestic prices coupled with umpteen trade restricting means and measures by the buyer countries.

High value fishes

Thus it is important to ensure that the availability and affordability of high value fishes whose consumption could be augmented by creating awareness campaigns in the country. In addition, governmental regulations are required for enabling a sizeable quantum to be marketed locally.

The study has observed that exports of fish have been done at a price lower than domestic retail price (less than a dollar) across 42 countries. The price comparison of high-value species like cephalopods, pomfrets, seer and ribbon fishes has indicated that the domestic prices were on an average 20-25 per cent more than the export prices (Salim et al., 2012). It is mainly because of the fact that the high-value fishes do not cater to the domestic market on account of low and inconsistent demand. The exporters in order to reap in the export economies of scale tend to export more quantity at a lower price margin. The revenue gains are contributed mostly by quantity effect rather than the price effect. The exporters make their revenue mostly out of selling more quantities rather than at competitive prices (Salim and Geetha, 2011). The paradox of selling a higher quantity at a lower export price coupled with buyer alerts and rejections necessitates the need for harnessing the domestic market so that the fish food is available across the Indian masses.

The consumption studies were conducted across 900 urban households in Chennai, Kochi and Mumbai. The study found that domestic prices were 20-25 per cent more than export price; nevertheless, a sizeable demand did exist with high consumer surplus. The average fish consumption / household has been found to be around 10 kg. The fishes consumed included both low value (sardines, mackerels, anchovies and others) and high-value (shrimps, cephalopods, seer fishes, pomfrets ribbon fishes and others) fishes and were consumed 70 and 30 per cent, respectively. The constraint analysis has indicated that reduced availability, seasonal consumption and exorbitant prices were the major constraints. Most domestic consumers were unaware of low export price.

The comparison of Export Price vis- a-vis Domestic Price for the exportable fish species across export and domestic markets for the years 2007-08 and 2014-15 indicated that the the rise in prices of these fish species were much higher in domestic markets than in the export market. Apart from shrimps and cuttle fish, most of the fishes could fetch a higher domestic price when compared to its export price (*Figure 1*).

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Figure 3 - Indian fish market grid

Figure 4 - Fish markets

Figure 6 - Query

Figure 7 Output

Need for government intervention in regulating fish exports

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In 2014, the value of marine fish landings in India was estimated to be at Rs 31,750 crore at landing centre (LC) level and Rs 52,360 crore at the retail centre (RC) level. The value at the landing centre level registered an increase of 8.10 per cent, while that at the retail centre level, it increased at the rate of 12.1 per cent over the previous year 2013. The domestic fish market is growing significantly with population and income growth rates, changes in food habits, increase in awareness on nutritional qualities of fish, improvements in transportation, storage and processing facilities and access to quality fish. Domestic fish consumption can be augmented by resorting to ensuring fish availability, affordability and accessibility to fish markets *(Figure 2).*

Indian Fish Market Grid

CMFRI has attempted to develop the Indian Fish Market Grid initiated with the development of a spatio-temporal market and price database for Indian fisheries sector with user-driven decision-making based on structured and customised queries providing unique opportunities for the different stakeholders viz., Fishers (Identifying best target market for disposal), Marketers and traders (Determining fish arrivals / disposal), Consumers (Rational buying decision), Exporters (Capacity utilisation), and Policy planners (developing market regulations).

The development of an integrated fish grid incorporating species, markets and prices - elements transmits market information flows across the stakeholders ensuring affordability, availability for national food security. The market grid offers a decision support system which could be run query-based across the states, districts and markets. The queries could be done for species and its availability, arrivals and disposals (*Figure* 4, 5). The query when provided leads to the display of the map layers of the grid portraying the different markets relating to the query provided *(Figure 6).* The output could be viewed with the suggested markets, prices and quantum available *(Figure 7).*

Demand for high-value fish

The consumption behaviour has been found skewed towards protein food with increased fish consumption on account of being healthier and cheaper food amongst animal protein substitutes. The consumption studies have indicated the existence of huge demand for high-value fish even at a higher price. The poor supply of fish to the domestic fish market will lead to a situation wherein the domestic consumers will be devoid of fish in the market at affordable prices. The domestic fish food security is an important issue considering the fact that the export prices are lower than the domestic prices of fish coupled with umpteen trade restrictions and measures. The study has identified significant deleterious effect of fish demand - supply mismatch in the domestic market. There is a need for government intervention in regulating fish exports to ensure domestic fish food security and substituting exports with domestic marketing. It is important to ensure the availability and affordability of high-value fishes whose consumption could be augmented by creating awareness in the country.

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Creating avenues for off-farm income

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We have to learn to stay rooted in the present and not in the past as we assess our progress in the field of agriculture. We must welcome the fact that the agricultural sector's share to India's total GDP is declining even while accelerating and enhancing our food security and global ranking in agricultural production. India has a strong comparative advantage in agriculture as it essentially practices a unique model of mixed farming and multiple cropping to generate diverse output and income leveraging small landholdings and family labour.

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Finally, it is appropriate to posit that there is a lot to feel good about India's achievement in the field of agriculture and practically very little to fret about. Of course, there is still room as well as need for achieving more. For example, we need to reduce on priority the number of people directly dependent on agriculture. Indian agriculture, a sector that has a share of 18% in the GDP, cannot afford to support 50% of our labour force. The attention should shift to creating more avenues for off-farm income within and outside rural areas. The off-farm income enhances farm investment, reduces farm debts, promotes innovation and encourages diversification especially among marginal and small farmers. Agriculture is solely rural. But the rural need not be solely agriculture. Ideally, this transition should occur smoothly, powered more by "pull factor" from the industry and services sector than by "push factor" from the farm sector.

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