# Journal of Entomology and Zoology Studies

Available online at www.entomoljournal.com

**Abdul Aziz**
Ph.D. Research Scholar,
Department of Fishery
Economics & Statistics, Faculty
of Fishery Science, WBUAFS,
Kolkata, West Bengal, India

**Somen Sahu**
Head, Professor, Department of
Fishery Economics & Statistics,
Faculty of Fishery Science,
WBUAFS, Kolkata, West
Bengal, India

**BK Das**
Dean, Faculty of Fishery
Science, WBUAFS. Kolkata,
West Bengal, India

**KC Dora**
Professor, Department of Fish
Processing Technology, Faculty
of Fishery Science, WBUAFS,
Kolkata, West Bengal, India

**Supratim Chowdhury**
Associate Professor, Department
of Fish Processing Technology,
Faculty of Fishery Science,
WBUAFS, Kolkata, West
Bengal, India

**Sugata Hazra**
Professor, University of
Oceanographic Studies, Kolkata,
West Bengal, India

**Saymantaka Sahu**
Department of Zoology, City
College, University of Calcutta,
Kolkata, West Bengal, India

**Corresponding Author**
**Somen Sahu**
Head, Professor, Department of
Fishery Economics & Statistics,
Faculty of Fishery Science,
WBUAFS, Kolkata, West
Bengal, India

# The efficiency comparison of marketing channels at Jagiroad dry fish market, Assam during 2017-2018

**Abdul Aziz, Somen Sahu, BK Das, KC Dora, Supratim Chowdhury, Sugata Hazra and Saymantaka Sahu**

## Abstract
Dry fishes are being produced after adding value, mostly to the captured marine fishes of low economic value for the consumption in future days. In India, this account for about 32% of the total marine landings. Present study was carried out to enlighten the efficiency of marketing channel of dry fish at Jagiroad dry fish market, Assam during 2017-18, as the market is the largest in Asia. Study was carried out by collecting primary data from the wholesalers, retailers as well as the producers and marketing efficiency analysis was done by different statistical tools. The study concluded that the dry fish industries have the potentiality to provide good profits and generate employment. The significant intervention in the suggested area is that of many intermediaries involved in the marketing channel, thus increasing the price of the final goods for consumer, so government should take some measures and put some limitations in the market. For the benefit of this industry some new sort of organization in the marketing may be introduced, to standardize the price fluctuation and minimize the role of middleman in this sector.

**Keywords:** Marketing, dry-fish, efficiency, middleman, final-goods

## Introduction
The fisheries and aquaculture sector is a vital source of livelihood, nutritious food and economic opportunities. Fish and fishery products are among the most important agricultural commodities providing significant contribution to the world's food security and economic development. In India, consumption of dried fishes is about 32% of the total marine landings and about 17% of the total catch, used for the production of dry fishes. In drying, salt is used to destroy the non-halophilic spore forming bacteria and osmophilic fungi (Sivaraman *et. al.,* 2015) [1]. Dry fish is an important source of animal protein supplement, which is preferred as a key dish or used as a flavoring agent in combination with other food items (Soumyadip *et.al,* 2019) [4]. Drying is one of the most commonly practiced methods of fish preservation in Assam and is a traditional and primitive preservation method. It is also one of the world's oldest known preservation methods (Payra *et al.,* 2016 & Balachandan *et al.,* 2013) [2, 3]. Dried fish market is invariably associated with the fresh fish market. Freshwater as well as marine fishes were found in the Jagiroad market. Dried fish market situated at Jagiroad of Nagaon District are the largest dried fish markets in Asia which function as supply centres of dried fish for the entire Northeastern India. It receives the dry fish products from the entire parts of the country. This market acts as the major income generating source for different stakeholders from the neighboring communities. A large number of people are involved in the market at different levels, such as drying of fish, assembling, grading, packaging, storing, transportation of dried fish etc. Considering above factors, it is aimed at studying the different marketing channels. Since sufficient basic data is not available on the above aspects, the present study will bridge this gap and the constraints for economic development of different stakeholders involved in this marketing system can be minimized with further improvement. The findings will support researchers, planners/policy makers etc. to communicate the profitability and livelihood generated by the dry fish marketing system. It will provide information as to how value enhancement is going on in fishery products in terms of money. The study will provide a road map for analyzing the present status and prospects of dry fish production and marketing in Assam.

**Materials and Methods**
The research entitled "The efficiency comparison of marketing channels at Jagiroad dry fish market, Assam during 2017-2018'' was conducted at Jagiroad-Asia's largest Dry Fish Market in Morigaon district, Assam. Jagiroad dry fish market is situated in the second smallest district of Assam, Morigaon, which is 78 km away in the North-East direction from the State's capital Dispur. The study was conducted during the period July, 2017-March, 2018 to evaluate the study appraisal of dry fish marketing in Assam. Both primary and secondary data were collected for this purpose. The following table has shown the sampling frame for the mentioned research programme.

**Table 1**: Sampling frame for the mentioned research.

| Stage | Selected zone | Sampling procedure | Data collection |
|---|---|---|---|
| Stage 1: Main Market | Marigaon Jagiroad Market | Purpose Sampling | Primary and Secondary both. Questionnaire and Interview Data |
| Stage 2: Retail Markets | Nagaon | Random sampling | Questionnaire and Interview Data |
| Stage 3: Retail Markets | Marigaon | Random sampling | Questionnaire and Interview Data |
| Stage 4: Retail Markets | Hojai | Random sampling | Questionnaire and Interview |
| Stage 5: Retail Markets | Tezpur | Random sampling | Questionnaire and Interview |
| Stage 6: Retail Markets | Lakhimpur | Random sampling | Questionnaire and Interview |

Data collected from the respondents during the study period were edited, scored, systematically tabulated and analysed using the following statistical tools and techniques.

**Marketing efficiency**
Marketing efficiency was calculated using both Shepherd Index (1972) and Acharya's modified marketing efficiency (Acharya and Agarwal, 1999) which is as follows.

**Conventional method: Index of marketing efficiency (E) = O/I**
Where, O = value added by the marketing system, I = cost of market intermediaries

**Shepherd's Index (1972): Marketing efficiency (ME) =V/I**
Where, V=value of goods sold or price paid by the consumers

I = total cost + margin of market intermediaries.

**Result and Discussion**
In the study area six major marketing channels were observed for marketing of dry fish. Out of all the six channels, Channel I (Dry fish Producer-Assembler-Commission Agent Wholesaler-Retailer-Consumer) was found to be the most dominant channel through which 53.07 percent of the total dry fish moved. 22.33 percent fish dryers sold dry fish through Channel II (Dry fish Producer-Commission Agent-Wholesaler-Retailer-Consumer) and 10.30 percent used channel IV (Dry fish producer-Wholesaler-Retailer-Consumer) for selling their product in the market. And in channel V and VI, we have seen that local distributor takes the part which comprises 5.15 and 2.10 respectively.

**Table 2**: Marketing channel with different intermediaries involved in market.

| Particulars | Marketing channels | Quantity handled (in percent) |
|---|---|---|
| Channel I | Dry fish producer-Assembler-Commission agent (CA)-Wholesaler-Retailer-Consumer | 53.07 |
| Channel II | Dry fish producer-Commission agent-Wholesaler-Retailer-Consumer | 22.23 |
| Channel III | Dry fish producer-Wholesaler cum Commission agent-Retailer-Consumer | 7.15 |
| Channel IV | Dry fish producer-Wholesaler-Retailer-Consumer | 10.30 |
| Channel V | Dry fish producer-Wholesaler-Local Distributor-Consumer | 5.15 |
| Channel VI | Dry fish producer (local producer)-Local Distributor-Consumer | 2.10 |
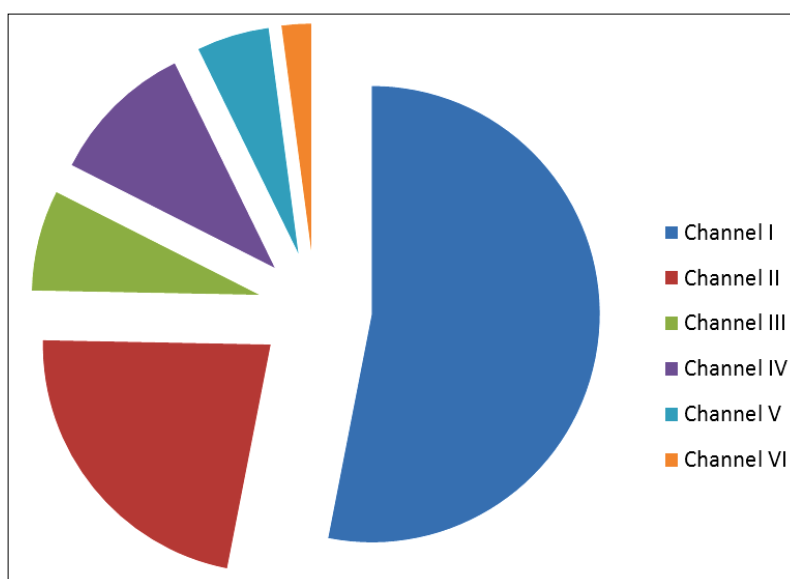


**Fig 1:** Pie-chart of marketing channel inflow.

**Marketing efficiency of dry fish**

**Table 3:** Marketing channel price index

| Sl. No. | Particulars (Unit-Per Kg) | Share from final price (in Rs.) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Channel I | Channel II | Channel III | Channel IV | Channel V | Channel VI |
| 1 | Retailer's sale price (RP) | 189.30 | 183.25 | 176.85 | 172.00 | 165.10 | 154.90 |
| 2 | Total Marketing Cost (MC) | 41.30 | 37.35 | 36.95 | 26.20 | 32.10 | 31.64 |
| 3 | Total margins of intermediaries (MM) | 68 | 65.90 | 60.70 | 37 | 53 | 34 |
| 4 | Net Price received by producer (NPP) | 90.50 | 89.75 | 88.50 | 88.10 | 88.10 | 86.00 |
| 5 | Value added by marketing system, VA= (RP- NPP) | 98.80 | 93.5 | 88.35 | 83.9 | 77 | 75.89 |
| **Marketing efficiency indexes** | | | | | | | |
| | Shepherd's Method Index, ME= {RP / (MC+MM)} | 1.73 | 1.77 | 1.81 | 1.94 | 2.72 | 2.90 |
| | Acharya's Method Index, MME = {NPP / (MC+MM)} | 0.82 | 0.86 | 0.90 | 1.03 | 1.39 | 1.48 |

The marketing efficiency of dry fish sold by the dry fish producers was calculated using different methods. Shepherd's Method Index (ME), of marketing efficiency was 1.73, 1.77, 1.81, 1.94, 2.72 and 2.90 in Channel I, II, II, IV, V and VI respectively (table: 3). And in case of Acharya's modified measure of marketing efficiency was 0.82, 0.86, 0.90, 1.03, 1.39 and 1.48 in Channel I, II, II, IV, V and VI respectively (table: 3). So here in both the indexes shown us that marketing efficiency was the highest in channel V as the price received by the dry fish producers was higher and both marketing costs and marketing margin were lower than the other four marketing channels. Channel I was found as the most inefficient among all the channels where marketing costs and marketing margin were highest (Rs.41.30 and Rs.68 respectively). Despite higher marketing efficiency in channel V, its market share in total quantum of dry fish sold was the smallest as it is not possible for the consumers of Assam to buy dry fish products directly from the distributors every day. Although, Kashyap *et al.* (2013) [5] reported the same result between 5 major marketing channels of marketing efficiency during their research at Jagiroad dry fish market in 2009. Comparison of price spread of different channels indicated that price spread was lowest in channel VI and hence efficiency of this channel was more than the other channels.

**Conclusion**
Dried fish marketing play an important economic role in Jagiroad market by contributing to increased food production and employment opportunities. In many areas, dry fish marketing is the only employment opportunity for local fisherman. The dry fish marketing channel starts with a farmer (dry fish producer) and ends with the ultimate consumer involving a number of intermediaries in between. The involvement of these marketing intermediaries provides services for producing, assembling, loading, packaging and transporting of dry fishes and these activities result in cost addition at every stage of marketing. It was observed that the farmers did not sell fish directly to the consumers. The major existing marketing channels were identified and are presented above (table I). By the analysis of Shepherd's Method Index and Acharya's Method Index, we came to conclusion that, the price of a final good increases as the intermediaries increases in the marketing channel thus proving the fact behind such high fluctuations in pricing of fishes sold by sellers of the same market in close vicinity. The marketing cost and extra margin increases in the value chain as the product passes through the different number of stages. Therefore it is necessary to minimize the final price of a commodity by compressing the marketing channel.

**References**
1. Sivaraman GK, Visnuvinayagam S, Jha AK. Microbiological spoilage of dried fishes. Indian council of agricultural research, 2015.
2. Payra P, Maity R, Maity S, Mandal B. Production and marketing of dry fish through the traditional practices in West Bengal coast: Problems and prospect. International Journal of Fisheries and Aquatic Studies. 2016; 4(6):118-123.
3. Balachandran KK. Post-harvest technology of fish and fish product. Daya publishing house, 2013, 77-104.
4. Soumyadip Purkait, Somen Sahu1, Bostanul Arefin, Subir Kumar Pradhan, Anisha Sharma, Satyanarayan Boda *et al*. Economic Analysis of Fish Drying in Junput Khuti of West Bengal" International Journal of Current Microbiology and Applied Sciences. ISSN, 2018; 7(10):2319-7706.
5. Dipanjan Kashyap, Rajita Devi, Phukan B, Baishya S, Dutaa MP, Bhuyan S *et al*. Marketing efficiency across the marketing channels in dry fish business in North East India. Environment & Ecology. 2013; 31(4):1732-1735.