



Research Article

Fish Marketing System in Nepal: Present Status and Future Prospects

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Abstract

Efficient fish marketing needed for the growth of fish production as well as development of fishery sector. Domestic fish markets development in the Nepal will play a very crucial role in the development of fisheries sector. Fish marketing system development in Nepal is in infant stage. Fish marketing channel has not been systematic in Nepal. The fish marketing infrastructure and the facilities for the fish market should be developed by identifying the possible production and collection centers in the country. Live fish have getting higher price in the market and fish imported from India price is lesser than fresh wet fish of Nepal. Government policy needed to upgrade the existing fish marketing system to ensure supply of hygiene fresh fish and processed fish for consumers.

Key words: Fish marketing; live fish; wet fish; processed fish; marketing channel

Introduction

Marketing is a broad term that encompasses all the interactions involved from the point of production to the end consumer (Engle and Quagraine, 2006). Fish market is a place where the fishes and fish products of commercial importance are subjected to sale. Regulation of fish production and consumption through sale is known as fish marketing. Market infrastructure includes wholesale market, retail market and fish retail outlets (Gupta and Gupta, 2008). To make fish available to consumers at the right time and in the right place requires an effective marketing system. The growth of fish production as well as development of fishery sector in terms of economy and infrastructure is highly dependent on an efficient fish marketing system (Chourey *et al.*, 2014). Conventional distribution channels are composed of producers,

wholesalers, and retailers and consumer that are part of one marketing system (Engle and Quagraine, 2006). In general, there are four types of middlemen engaged in marketing fish: Brokers, wholesalers, wholesalers-retailers, and retailer. Price of fish depends on market structure, species quality, demand, size and weight of fish species (Abdurrahman *et al.*, 2017).

Nepal is rich in fish biodiversity. It occupies only 0.1 percent of global land area whereas native fish covers 2.6 percent and 23.3 percent of world and Indian sub-continent of freshwater fish respectively. Total of 230 native fish species belonging to 104 genera, 34 families and 11 order are reported in Nepal (Rajbanshi, 2012). Nepal is endowed with vast aquatic resources that constitute 5.5% of total land area of Nepal. Only 2% of estimated 826,818-hectare water surface area of Nepal is utilized for aquaculture and capture

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fisheries. Production status of fiscal year 2016/17 shows that out of 83,898 metric ton fish production 25% comes from capture fisheries where as 75% from aquaculture (DOFD, 2016/17). The per capita fish production in Nepal is 2.9 kg in 2016/17(DOFD, 2016/17), which is very low in comparison to neighbor countries like India (9.0 kg), Bangladesh (18.0 kg), and China (35.0 kg). The fish demand is fulfilled by import of fish from India (Gurung, 2014; Mishra and Kunwar, 2014).

Status of Fish Production and Import in Nepal

Aquaculture production is mainly from pond fish farming of terai region. The major fish production districts are Bara, Dhanusha, Saptari, Rupandehi, Mahottari, and Chitwan of terai region of Nepal. The cultured species includes seven carp species: Bighead carp (*Aristichthys nobilis*), Silver carp (*Hypophthalmichthys molitrix*), Grass carp (*Ctenopharyngodon idella*), Rohu (*Labeo rohita*), Naini/mrigal (*Cirrhinus mrigala*), Bhakur/ Catla (*Catla catla*) and Common carp (*Cyprinus carpio*) from pond fish farming in Nepal. Besides, African magur (*Clarias*

gariiepinus), Pangas (*Pangasius hypophthalmus*), Nile Tilapia (*Oreochromius niloticus*) are also produced in the country. The main fish species which contributes to total fish production in the country are: Mrigal (29.2%), Common carp (19.2%), Rohu (12.2%) and Bighead carp (12.2%) (Fig.1.).

Fish production of fiscal year 2016/17 shows that out of 83,898 metric ton of fish production 25% comes from capture fisheries where as 75% from aquaculture. Fish production in the country is in increasing trend (Fig. 2) due to expansion of ponds area and enhancement of fish productivity from ponds. Demand of fish have been increasing in the country due to awareness of peoples about health and also increase in population of Nepal. The country fish production could not meet the country fish consumption demand. The import of fish is also in increasing trends (Fig. 3). In the fiscal year 2016/17 country imported 11757.6 metric ton of fish (fresh fish+ boneless fresh fish + dried fish).

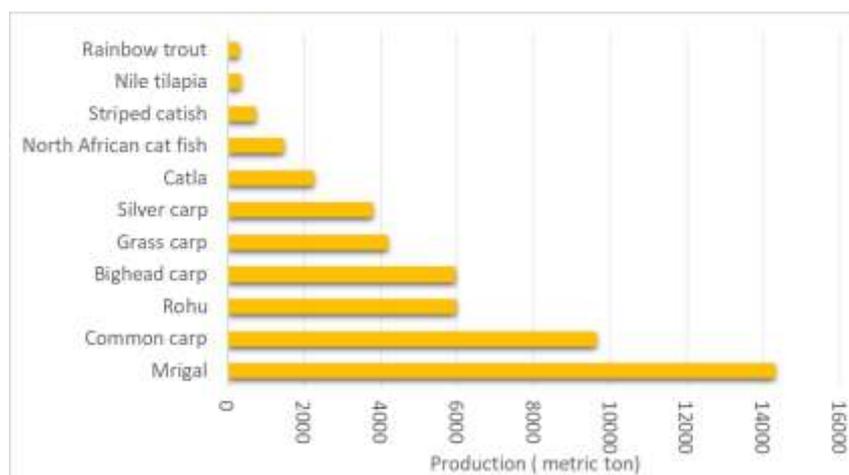


Fig. 1: Species wise fish production in Nepal in fiscal year 2016/17 (Source: DOFD, 2016/17)

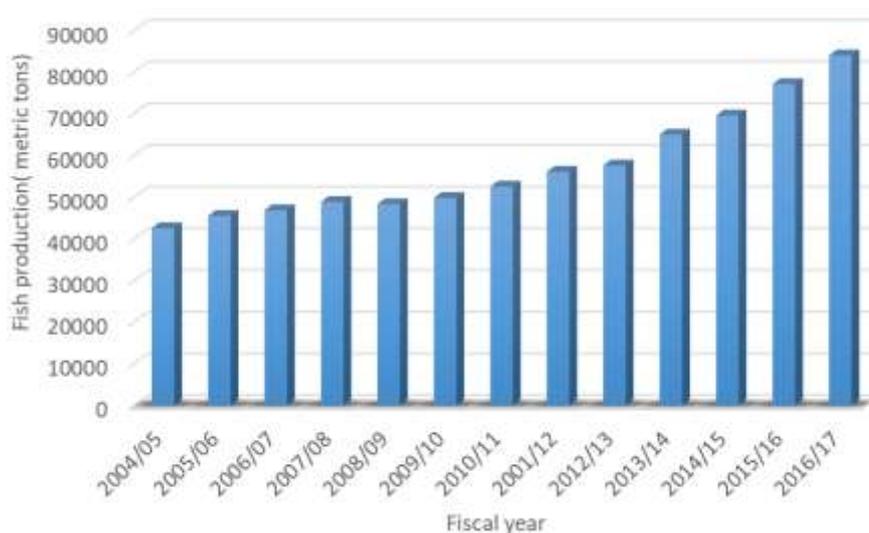


Fig. 2: Fish production trends in Nepal (Source: DOFD, 2016/17)

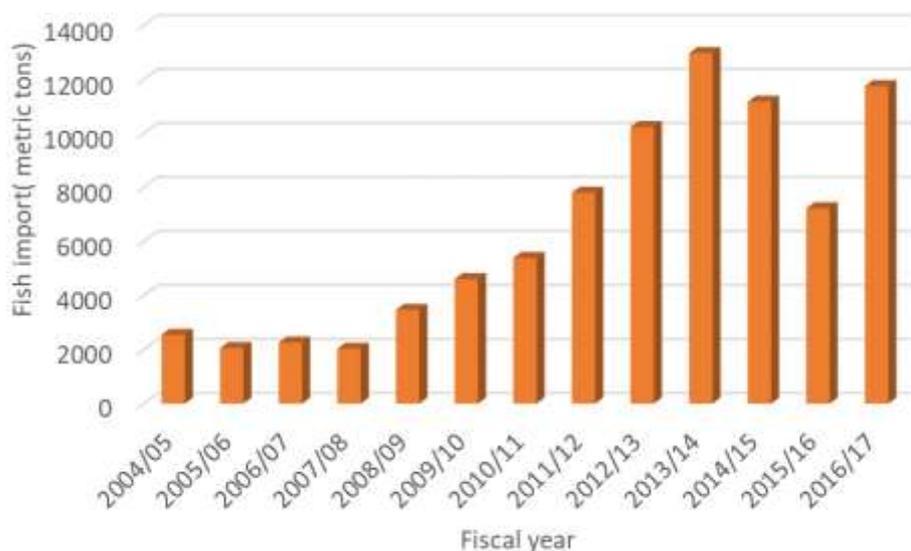


Fig. 3: Import of fish (Including fresh fish+ boneless fresh fish + dried fish) in Nepal from 2004/05-2016/17 (Source: DOFD, 2016/17; CAQO, 2016/2017).

Fish Market and Facilities

There are 1681 fish market and 22,406 farmer's pond sites from which fish marketing are carried out and 69 live fish selling stall for the selling of live fish in Nepal (NFS, 2017). More people want to buy live fish from the stall. Facilities at fish markets are minimal, with poor hygiene and sanitation. There are no standard practices for handling, washing, sorting, grading, cleaning and icing of fish. The retailer in the rural market sell their fish just keeping the fish on the polythene in the ground or in the hundies. In the urban area, fish stall has been developed for selling fish due to government subsidies which encourage to construct the stall of fish. In the Kathmandu valley, Kalimati wholesale market center has developed a fish marketing infrastructure that includes chilled, refrigerated and icing facilities. These facilities are used by fish traders at all levels, including middlemen, wholesalers, retailers and vendors on a community and co-operative basis.

Fish Packing and Transportation System

The live fish are transported in plastic tank with aeration in the truck. For live fish, the vendors buy fish from fish producing farmers and they sale to local retailers or directly to the hotels and consumers. For the local market, they transported live fish in the hundies with water. For the distant market, they transported live fish in the plastic tank capacity of 200-250 liter water loaded on the truck. While other unprocessed wet fish are packed in container like plastic crate or iced fish in bamboo basket lining with protective layers of leaves practiced in Nepal. The wet fish are transported from terai to Kathmandu in the night bus. Fish imported from India are transported in truck in Styrofoam iced packed box.

The dried fish products available in the market of Nepal are in the form of sun-dried, smoked, spicy instant fish and fish pickle. Marketing system of dried fish varies for indigenous captured fish, cultured fish and imported fish. The main source of sun-dried fish in Nepal is from India. The sun-dried fish imported from India were transported in heavy trucks by packing in jute bags and delivered to wholesale markets of dried fish. One variety of instant spicy-dried fish in vacuum packed plastic bag was imported from China by road through Tatopanni. Processed *Penaesus spp.* and 146 processed *Stolephorus spp.* imported by cargo from Thailand and Brunei, respectively by packing in plastic bags (Pradhan *et al.*, 2017). Vacuum packed rainbow trout from Nepal is sale from the departmental stores. Sun dried and smoked indigenous fish species of Nepal are sale in the highway of Malekhu Bazaar and other high way adjacent market.

Fish Marketing Channel

Most of the fisheries and aquaculture production in Nepal is consumed by the domestic market (Labh *et al.*, 2017). Fish marketing channel has not been systematic in Nepal (Karki, 2016). Fish marketing system in Nepal varies from place to place. Large numbers of intermediaries are involved in the distribution process of fresh fish marketing. Farmers themselves either sell their fish from the production site or send it to local markets. In case of huge production, fish is generally marketed through contractors (Mishra and Kunwar, 2014; Karki, 2016). There are also farmer's organizations that produce fish and sell them through cooperatives. The Rupa lake Restoration and Fishery Cooperative Ltd., Harpan Fewa Fish Cooperative and Begnas Fish Entrepreneur Committee have sell their fish from their fish landing sites through Cooperative / committee directly to the consumers.

Box-1. Fish marketing channels in Nepal.

The fish marketing channels are listed below:

1. Fish farmer – middleman/collectors/contractors – wholesalers – retailers – consumers.
2. Fish farmer - middleman/collectors/ contractors – retailers – consumers.
3. Fish farmer – middleman/collectors/ contractors – commission agents - wholesalers – retailers – consumers.
4. Fish farmer – middleman/collectors/ contractors – consumers.
5. Fish farmer – retailers – consumers.
6. Fish farmer/ Fish cooperative/ fish entrepreneur committee- consumer

A study conducted by Shrestha (1999) has shown that 28% of the fish are consumed or given away by farmers, 30% are sold directly to the consumers and 42% are purchased by wholesalers from contractors and distributed to retailers in major urban centers. In Nepal, seven marketing channels through which fresh fish, wet fish, live fish and its products have been delivered to the consumers from producer area/producer (Box-1). Marketing channel plays major role in controlling the quality and price of the product.

Fish Products and Price

Various types of fishes and fish products were found sold in the markets: wet fish preserved in iced from India and Nepal, live fishes, dried/smoked fish, fish fillets, canned fish (department stores), vacuum packed fishes (trout fish) etc. The wet fish price/kg varies place to place of Nepal. Common carp, Rohu, mrigal, Catla and Grass carp is sale at the rate of NPR 300-450/kg while silver carp, bighead carp, Nile tilapia, African magur and striped catfish sale at the rate of NPR 200-350/kg and Rainbow trout at the rate of NPR 900-1100/kg. The dried fish (Sukuti) sale at the rate of 1500-2000 /kg in the Pokhara valley. Dried smoked fish of Nepalese products price range to NRS 3000-5000/kg depending on the fish species (Pradhan *et al.*, 2017). It has been found that live fish have getting higher price in the market. The fish imported from India price is lesser than the fresh fish of Nepal. It is due to demand of native fresh fish by consumer.

Fish Marketing Problem in Nepal

Marketing system of Nepal is not so systematic which lack marketing infrastructure and marketing facilities. The major marketing problems in fishery sectors are lack of all-weather roads connecting fish producing areas with assembly markets and consumption centers, absence of cold storage facilities/chilling rooms for holding the harvest and regulate supply, absence of insulated vehicles to prevent spoilage during sales. There is a long marketing channel and most serious marketing problems are lack of transportation, fish diseases, lack of financial facilities, frequent strikes, fish theft, lack of research about fish marketing, unhygienic storing condition, lack of specialized fish marketing

manpower and lack of adequate marketing infrastructure (Kumari, 2015; Budhathoki and Sapkota, 2018). The availability of adequate transportation alternatives can affect the type of product that can be sold, the quality of the product, the timeliness of deliveries, and the volume of product that can be moved, among others. Improvements in transportation technologies have allowed for the emergence of complex, global markets for a wide variety of food products (Engle and Quagrainie, 2006).

Conclusions

Domestic fish markets development in the Nepal will plays a very crucial role in the development of fisheries sector. It will ensure nutritional and food security as well as minimizing post-harvest losses, increase revenue, enhance employment opportunities and supply hygiene fish. The fish marketing infrastructure should be developed by identifying the possible production and collection centers in the country. The facilities for the fish market development needed such as establishment of ice-plants, cold-storage and preservation facilities, introduction of insulated and refrigerated fish vans and fish carriers to maintain cold-chain during transportation, improvement of existing fish market structure, improvement of sanitation, hygienic condition, and sufficient auction places to ensure hygiene fish supply to the consumers of Nepal. Public-private relationship should be promoted to improve the existing system of fish marketing. The involved persons in the fish production and marketing should be trained about the fish harvest, fish handling, fish packing and fish preservation techniques.

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