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Research Article

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Price increment analysis of exported Indian Mariculture products in some years using laspeyres price index

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ABSTRACT

In the present study, through assessment of the data obtained from reference work, attempt has been made to find the inflation or increment of value of our mariculture products in the international market. Such attempt has not been made earlier, therefore this research study may be considered as a baseline for the same. The percentage inflation in the export value of mariculture product from 1996 to 1999 was 21.77%, from 1996 to 2002 it was 52.64% and from 1996 to 2005 it was 56.65%. The export price of Indian mariculture product has increased from 1996 to 1999 by 21.77%, then from 1999 to 2002 by 30.87% and from 2002 to 2005 by merely 4.01%. The Indian mariculture products export prices have shown a steady rise from 1996 to 2002 but from 2002 to 2005 the export price rise has declined drastically. In the years between 2002 to 2005 there was a collapse in the mariculture shrimp farming industry due to various upcoming environmental problems and also shrimp diseases. India has to take requisite steps to overcome the problems presently faced by the mariculture industry so that it revives itself and the export prices of the mariculture products increases.

KEYWORDS: *Laspeyres price index, Cultured shrimp, Frozen mussel meat, Mariculture.*

INTRODUCTION

Mariculture is a specialized branch of aquaculture involving the cultivation of marine organisms for food and other products in the open ocean, an enclosed section of the ocean, or in tanks, ponds or raceways which are filled with seawater[1].

Mariculture has become a promising area of aquaculture all over the world. It is one of the most important and rapidly growing components of Asian aquaculture, contributing substantially to the increased demand for high-value seafood items in the global market. India has a long tradition of aquaculture and is a world leader after the People's Republic of China, contributing about 5.2 percent of the total world production in 2003. A subcontinent with seas on three sides, India has a long coastline of about 8129 km. The country's continental shelf is estimated as 0.5 million km^2 and its Exclusive Economic Zone (EEZ) encompasses 2.2 million km^2. (FAO 2005)

The mariculture potential of India is vast as there is great scope for developing farming of shrimps, pearl oysters, mussels, crabs, lobsters, seabass, groupers, mullets, milkfish, rabbitfish, sea cucumber, ornamental fishes, seaweeds etc. Although about 1.2 million ha is suitable for land based saline aquaculture in India, currently only 13 % is utilized. In India till date mariculture activities are confined only to coastal brackish water aquaculture, chiefly shrimp farming[3].

The export of aquacultural shrimp has been stagnating around 50,000 tonnes per annum in the seventies and early eighties. The quantity of shrimp exports increased to 1,28,000 mt in 2001-02 and 1,35,000 mt in

2002-03. The value realized by the aquaculture shrimps has also gone beyond 80 % of the gross earnings of shrimp exports. The same scenario is also observed in the other Mariculture products export[3].

But during the last decade the export prices of all mariculture products have increased considerably. Through the present research study an attempt has been made to determine the inflation of price of the exported mariculture Indian product over the years using laspeyres price index. Till date no such attempt has been made and so the analysis done in this research study should be taken as baseline for further research on price inflation.

MATERIALS AND METHODS

The following data is being obtained from the Reference[3,4].

Table 1: Indian Mariculture Products export value in different years

Mariculture Products	Years							
	1996		1999		2002		2005	
	Quantity in Kg	Price in Rs	Quantity in Kg	Price in Rs	Quantity in Kg	Price in Rs	Quantity in Kg	Price in Rs
Frozen Mussel Meat	1	67	1	50	1	86	1	100
Live Crab	1	119	1	174	1	204	1	259
Frozen Finfish	1	37	1	42	1	42	1	54
Cultured Shrimp	1	250	1	310	1	390	1	328

The formulae of the Laspeyres price index are as follows

The Laspeyres price index formula is as follows

$$I = \frac{\sum p_n q_o}{\sum p_o q_o} \times 100$$

P = Price of the Commodity, Q = Quantity of the Commodity, o = Base year and n = Current year under study[5].

The above depicted formulae are being implemented on the data obtained from the reference.

RESULTS

Table 2: Laspeyres price index for the year 1996 – 1999

Mariculture Products	1996		1999		PoQo	PnQo
	Po	Qo	Pn	Qn		
Frozen Mussel Meat	67	1	50	1	67	50
Live Crab	119	1	174	1	119	174
Frozen Finfish	37	1	42	1	37	42
Cultured Shrimp	250	1	310	1	250	310
Total					473	576

For year 1999 the I_L = 121.77

Table 3: Laspeyres price index for the year 1996 – 2002

Mariculture Products	1996		2002			
	Po	Qo	Pn	Qn	PoQo	PnQo
Frozen Mussel Meat	67	1	86	1	67	86
Live Crab	119	1	204	1	119	204
Frozen Finfish	37	1	42	1	37	42
Cultured Shrimp	250	1	390	1	250	390
Total					473	722

For year 2002 the I_L = 152.64

Table 4: Laspeyres price index for the year 1996 – 2005

Mariculture Products	1996		2005			
	Po	Qo	Pn	Qn	PoQo	PnQo
Frozen Mussel Meat	67	1	100	1	67	100
Live Crab	119	1	259	1	119	259
Frozen Finfish	37	1	54	1	37	54
Cultured Shrimp	250	1	328	1	250	328
Total					473	741

For year 2005 the I_L = 156.65.

Table 5: Percentage of inflation over the years

	Laspeyres Price Index	Percentage Inflation Rate	Percentage Inflation Rate increase from 1999 to 2002 is 30.87 %, while from 2002 to 2005 is 4.01%.
1996	100	----------	
1999	121.77	21.77%	
2002	152.64	52.64%	
2005	156.65	56.65%	

DISCUSSION

Every country mainly obtains foreign exchange through export of various commodities to other countries. The foreign exchange earning basically depends on the value of the exported products in its own currency. The export value of various Indian mariculture products depicted in the Table 1: are exhibiting continuous fluctuations thus affecting the foreign exchange earnings through the mariculture products.

In the present study through assessment of the data obtained through reference work, attempt has been made to find the inflation or increment of value of our mariculture products in the international market.

As such attempt has not been made earlier and it is our first effort of study, very less material is available in the form of reference. Therefore this research study may be considered as a baseline for the same.

The export value of our country's mariculture products in year 1996 was taken as the base values and then the laspeyres price index was deduced for the periodic preceding years. The laspeyres price index is an indication of price increment or decrement. The percentage inflation in the export value of mariculture product from 1996 to 1999 was 21.77%, from 1996 to 2002 it was 52.64% and from 1996 to 2005 it was 56.65%.

The export price of Indian mariculture product has increased from 1996 to 1999 by 21.77%, then from 1999 to 2002 by 30.87% and from 2002 to 2005 by merely 4.01%. The Indian mariculture products export prices have shown a steady rise from 1996 to 2002 but from 2002 to 2005 the export price rise has declined drastically.

This is because the growth of Indian mariculture is rather slow as compare to the mariculture growth in other countries. In India 1.2 million ha of potential area for mariculture have been identified but till date only 1,00,000 ha have been utilised for operational mariculture. In the years between 2002 to 2005 there was a collapse in the mariculture shrimp farming industry due to various upcoming environmental problems and also shrimp diseases. This collapsation led to severe decrement in the export price of Indian mariculture products also the fisherman engaged in the mariculture shrimp farming diversified themselves to mariculture fin- fish farming.

In present scenario major commercial ventures in mariculture finfish farming are also restricted due to the lack of advance technology and also unreliable nature of the wild fish seeds. India has to take requisite steps to overcome the problems presently faced by the mariculture industry so that it revives itself and the export prices of the mariculture products increases. And in future mariculture sector can become a major contributor in earning foreign exchange.

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