MARKETING OF SMOKED FISH IN SOME SELECTED AREAS OF NIGER STATE

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ABSTRACT

The study was carried out in six markets from three Local Government Areas of Niger state selected purposely and a total number of 90 respondents were randomly selected. The study revealed the following gross margin of N55,800 from Minna, N90250 from Shiroro and N50,400 from Wushishi respectively. A Gini coefficient of 0.05797 revealed from the results, suggests a high level of inequality in income distribution. The market structure approximates that of oligopoly indicated by the presence of few sellers, producers and sellers fixing their prices and high level of product differentiation. The study revealed a marketing channel of products moving mainly from producers to wholesalers retailers and finally to consumers. Producers and some times wholesalers were found to be the processors of the fresh fish. The study concluded that the marketing of smoked fish was profitable. It was further recommended that producers be given new and improved technology on fish processing to improve the quality, effective and available transport system to facilitate prompt movement of products thus avoiding unnecessary spoilage and deterioration.

INTRODUCTION

The fishing industry is an important economic activity that provides food and jobs for million of people. The fishing industry includes all the activities involved in the commerce and recreational production of fish and shellfish. The catching, processing, marketing and conservation of fish and shellfish are all parts of the industry. The industry also provides various other products from the sea, such as seaweeds (Tauffer 2001).

With the world population reaching the 6.0 billion mark by year 2000AD (Fig1), a lot of pressure is being placed on the world fish production in order to meet the high demand from the teaming human population (Platt 1984). This demand is greater in tropical countries with increasingly rising human population. Table 1 indicates the estimated aquatic food consumption in the turns of the century. The per capital consumption of aquatic fish in the tropics which has well over 90% of world population growth may be maintained at the level shown if there is a corresponding increase in fish supply. A decline in fish availability will have a detrimental effect on the nutritional status of the protein intake of people. Fish is an excellent source of protein, rich in vitamins A, B and D. It is regarded as a single most important food component that supplies the bulk of the country animal proteins, which is rich in the essential amino acids (Murtal, et al., 2005). The fishing industry markets food fish in a variety of forms. The fish are sold fresh, canned, smoked, fried or frozen.

It is thus highly, inevitable that the marketing of fish needs to be highly improved on so as to increase the results of fish from processing, preservation, conservation and other merits of eating fish. The characteristics or attributes, which make fish acceptable to the consumers is an important factor that determines the marketing of fish. In assessing the quality of a fish the consumer may consider its freshness, the microbial load and the presence or absence of pathogenic organisms as well as the palatability of the fish. Fish quality is undoubtedly the most important factor, which influences consumers demand. A product of low quality will have a corresponding low market value. A product, which does not meet a required standard the producers, will suffer economic loss. A fish inspection and control of quality is very important.

Market structure according to Adegeye and Dittoh are certain characteristics of the market, which are believed to influence its nature of competition and the process of price formation. They include the size and numbers of buyers and sellers, ensuring an adequate intensity of price and quality of competition, freedom of entry and exist, and adequate size of sellers so as to encourage increased investment. The sequence of intermediaries or middlemen and markets through which goods pass enroute from producers to consumers is known as the marketing channel. The marketing channel for a particular commodity may vary from one part of the country to the other.

Fish deterioration is one of the greatest problems affecting fishing industry the world over and attempts at fishing are being made to reduce fish spoilage to the barest minimum. Wastage of the fish has been estimated at 20 – 50% of domestic fish production in tropical countries. This means that a high proportion of fish produced in these countries do not get to the consumers in wholesome state. (Ames et al., 1987).

The marketing of fish is being affected by some factors which have adverse effect on the employment, foreign exchange and the national food security of the nation. These factors include poor handling of fish; poor financing, storage, transportation and communication facilities, poor preservation techniques and storage facilities, and unscrupulous activities of middlemen which lead to price instability. A look at an efficient marketing channel plays a

significant role in the prompt movement of fish and fish products from the point of purchase to the final consumers. A significant quality is also lost through the absence of adequate technology.

The problems particularly associated with post harvest quality of fish, makes the preference of smoked fish more predominant in the study area. As a result of these problems the broad objective of the study is to examine the profitability of smoked fish marketing. Specifically, the study aims at

1. Identifying the market structure of smoked fish in the study area
2. To Examine the distribution channels of smoked fish marketing
3. To determine cost and return of smoked fish

METHODOLOGY

The study was carried out in Niger State. Which is located between latitudes 8^0 20'N and 11^0 30'N and Longitudes 3^0 30E and 7^0 20E. The major languages of the people spoken are Gwari, Nupe and Hausa. Farming/ fishing are the predominant occupation in the study area. The major land use pattern is characterized by rain fed food crop farming and livestock rearing. The major food crops grown are sorghum, millet, maize, cowpea, groundnut, melon and rice. Fishing activities are enhanced in the study area due to the presence of the river Niger.

The procedure of sampling involved a multi stage sampling in which three local government areas where purposely selected. They were selected due to the predominance of commercial smoked fish marketers in the areas. They include Minna, L/G, Wushishi L/G, and Shiroro L/G.

Two markets from each local government were also purposively selected because of the predominance of fish marketing in them. Fifteen fish marketers were randomly selected in each of the market giving a total of 90 respondents in the study area.

Data were collected through the use of structured questionnaire and were analysed using the gross margin analysis, to measure the profitability or otherwise of smoked fish marketing in the study area.

Descriptive statistics and the Gini coefficient were used to measure the income distribution pattern and to determine the market structure in the study area

Gross margin analysis

GM = GFI - TVC - - - - - - - - - - - - - - - - 1

Where

GM = gross margin,

GFI = gross farm income,

TVC = total variable cost.

Gini coefficient = $1 - \varepsilon$ x Y - - - - - - - - - -2

Where

X = the percentage of sellers

Y = the cumulative percentage of the total sales

εXY = the summation of XY

RESULTS AND DISCUSSION

Costs and Revenue Analysis

Table 1 reveals that in Minna Local Government respondents realized a profit margin of N55,800 in Shiroro N90,250 and in Wushishi N50,400. It is pertinent to note however that fishes are of different types and sizes and these qualities make them command different costs and prices. The unit of measurement was found to be in baskets and cartons of different sizes small, medium and big. The mean of the total variable cost plus cost of fish incurred from all the respondents in each of the markets of the local Government revealed N283, 800 for Minna, N253,500 from Shiroro and N250,350 from Wushishi, likewise the total revenue/income realized from total sales revealed N339,600 for Minna, N343,750 for Shiroro and N300,750 for Wushishi.

The values of costs of production incurred for Minna local Government and Shiroro revealed that most of the costs incurred were on high transportation costs, unstable and illegal taxes/levies collected by marketing agents. The result of the study further revealed that high revenues were realized in both Shiroro and Minna as a result of the large numbers of consumers in there areas and consequently high demand for the product. Shiroro recorded a profit margin of N90,250 mainly because of the presence of river Niger flowing in that area, leading to the citing of the Shiroro dam and high presence of fishing communities around. This reveals that in the study area smoked fish marketing is a profitable business.

Income Distribution And Market Structure

The market structure for fish in the study area is not perfectly competitive because of the collusive tendencies on the part of the sellers though there were relatively free entry and exit. The fish producers operating in fish marketing in the study area are mainly small and medium scale producers. They mostly market their products to wholesalers, retailers and to few consumers, out of the markets sampled they were very few sellers in number that operate on large scale

Todaro (1983) revealed that the value of the Gini coefficient ranges between 0 and 1, the closer to unity, the greater the degree of income inequality hence the higher the level of seller concentration and vice versa. The Gini coefficient for smoked fish marketers in the study area shown in table 1.3 (i.e 0.05794) indicates a high level of inequality in income distribution. Results further revealed that the fish products were highly differentiated based on their sizes and types (i.e species) however in the real market situation the smoked fishes were sold separately depending on their different sizes and types.

The results of the respondents revealed that 60% of the producers and sellers determine their own prices based on the cost of production, while 40% of the respondent revealed that buyers normally engaged in haggling and bargaining of fish before a price is agreed on. The presence of few sellers, many buyers, product differentiation producers fixing the price suggests an oligopolistic market structure.

Marketing Channel

Figs 2, 3 and 4 show the distribution channel of smoked fish in Minna, Shiroro and Wushishi Local Government.

Table 1.4 shows that 60% sold directly to consumers, 12.2% were commissioned agents that assist in getting buyers and sellers of the product, while 27.8% sell to wholesalers and retailers from major towns.

In figure 2, the market channel exhibits a movement of smoked fish products from the fishermen (i.e producers) processing and selling to wholesalers, wholesalers selling to retailers and then these like wise sell to consumers.

In fig 3, the producers fishermen sell both processed and fresh fish to wholesalers who also process/smoke the fresh fish and sell to the retailers and consumers, also retailers sell to consumers.

In Fig 4, the market channel indicates fishermen/producers sell mainly fresh fish to wholesalers who process and sell to retailers and consumers.

CONCLUSION

The study shows that smoked fish marketing is profitable in the study area. The Gini coefficient of 0.05794 indicates a high level of inequality in income distribution. The study also concludes that the market structure is oligopolistic as a result of the high number of buyers and few sellers and the prevalence of the product differentiation. The marketing channel indicate that the fishermen or producers sell the fish products either fresh or smoked to wholesalers who then sell to retailers and consequently to consumers. Some markets revealed situations where the wholesalers were the processors of the fresh fish before selling them. It can be concluded that marketing of smoked fish is a profitable venture in the study area.

Based on the above, the following recommendations are made that:

1. The smoked fish producers should encouraged to obtain modern processing equipment this would go along way to improve the product quality and hence increase its market value for purchase by the consumers.

2. The marketers should also assist in the areas of having good and reliable transport system to facilitate prompt movement of their products.

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Table 1 Estimated Human Consumption of Live Weight Fish and Shellfish at the Turn of the Century

Location Consumed	Population	Percentage (%) of World	Kg / Capita	Million
South Asia	2,100	33.8	14.2	30.0
India	962	15.7	3.2	3.1
East Asia	1,470	24.0	14.8	21.8
China	1,260	20.6	9.1	11.5
Japan	128	2.1	63.5	8.1
Others	82	1.3	22.7	2.2
Africa	877	14.3	14.5	12.7
Latin America	550	9.0	12.7	7.0
Europe	513	8.4	19.5	10.0
Russia et al	315	5.1	27.2	8.6
North America	298	4.9	21.4	6.4
Oceanic	30	20.1	33.3	1.0
World	6181	100.00	15.8	97.5

Source: Pigott (1994)

Table 2

Cost and Revenue Analysis of Smoked Fish Marketing

Study Area	No. of Marketing	No. Of Respondent	Total Valuable Cost Incurred ₦	Total Revenue in ₦	Gross Margin ₦
Minna L/G market	2	30	283,800	339,600	55,800
Shiroro LGA Markets	2	30	253,500	343,750	90,250
Wushishi LGA Markets	2	30	250,350	300,750	50,400

GM = GI – TVC

Minna = 339,600 - 283,800
= ₦55,800

Shiroro = 343,750 – 253,500
= ₦90,250

Wushishi = 300,750 –250,350
= ₦50,400

Table 1.3 Distributions Of Fish Marketers In The Study Area.

Income salary	No. of sellers frequency	% of seller (X)	Cumulative frequency	Cumulative % of sellers	Total sales N	% of total sales	Cumulative of % of total sales N	XY
2000 – 3000	28	31.11	28	31.11	140,225	14.24	14.24	0.0443
3001 – 4000	23	25.55	51	56.66	177,015	17.98	32.22	0.0823
4001 – 5000	12	13.33	63	69.99	169,400	17.21	49.43	0.0658
5001 – 6000	8	8.88	71	78.87	150,002	15.24	64.67	0.0574
6001 – 7000	8	8.88	79	87.75	79,772	8.11	72.78	0.0646
7001 – 8000	6	6.67	85	94.42	93,685	9.52	82.3	0.0548
8001 – 9000	3	3.33	88	97.75	66,662	6.77	89.07	0.0296
9001 – 10,000	1	1.11	89	98.86	49,960	5.08	94.15	0.01014
> 10,000	1	1.11	90	99.97	57,379	5.83	100	0.0111
					984,100			0.4203

Source: field data (2004)

Gini Coefficient = $1 - \sum XY$

$= 1 - 0.4203$

$= 0.5797$

Table 1.4
Market Channel of Smoked Fish in the Study Area

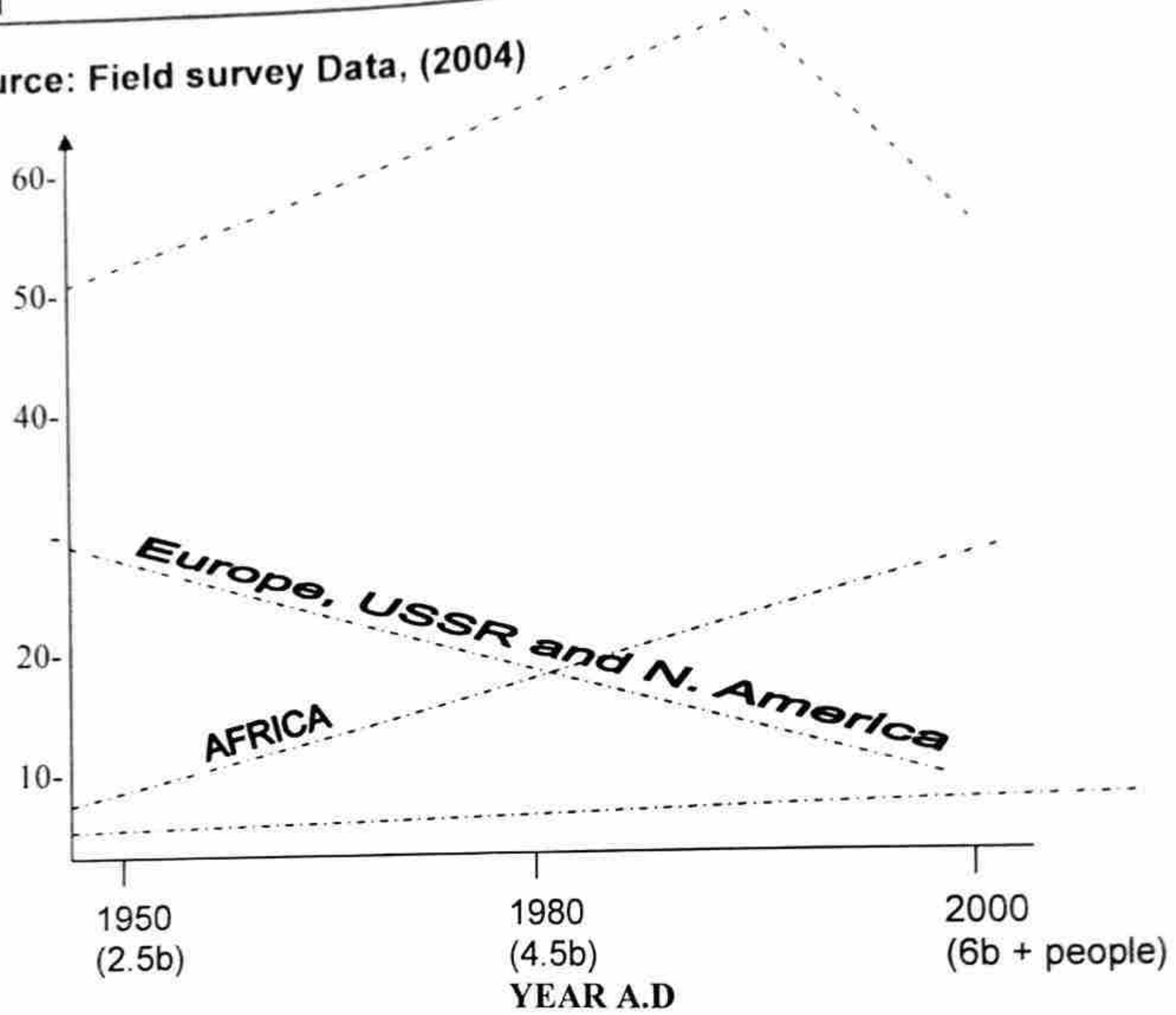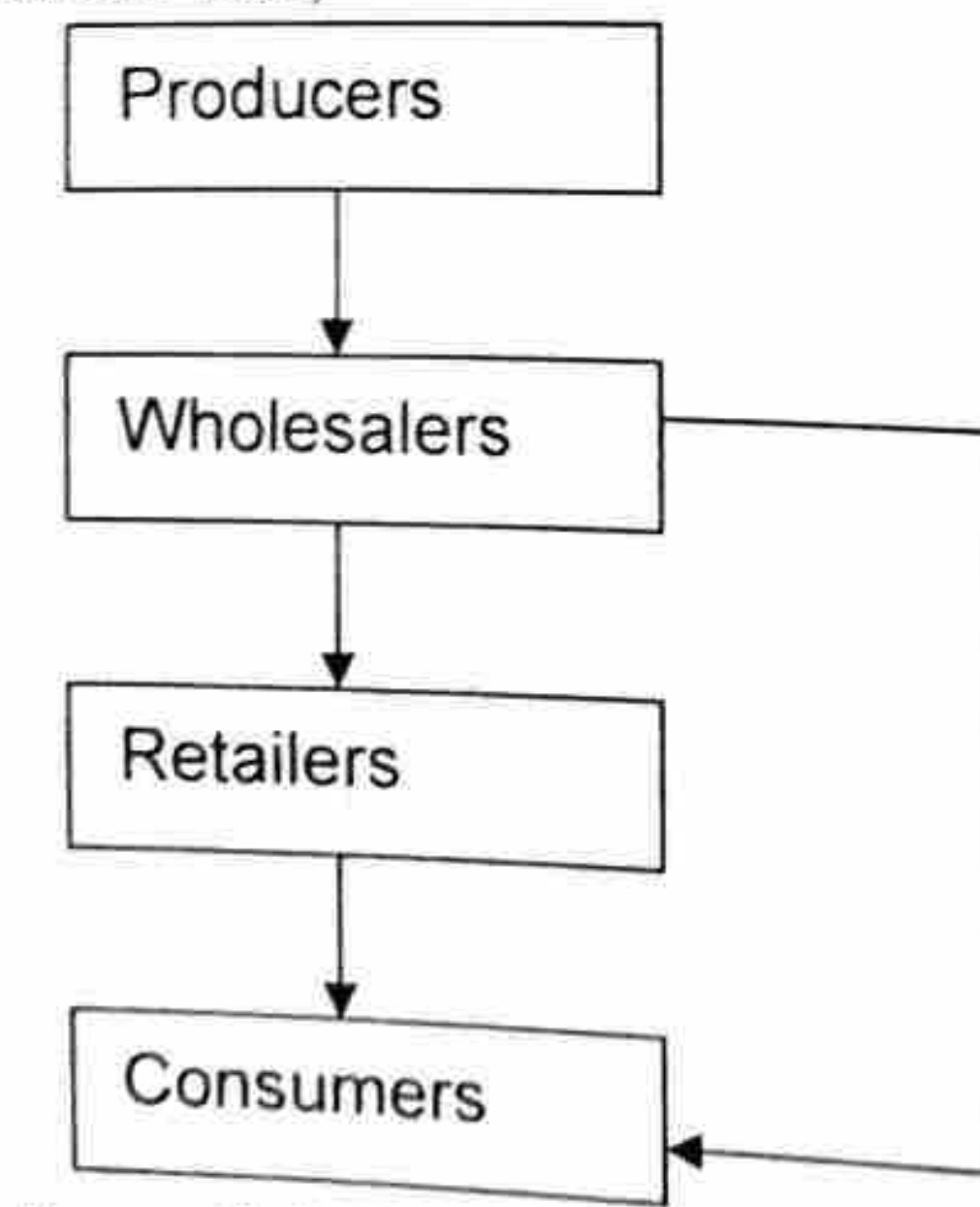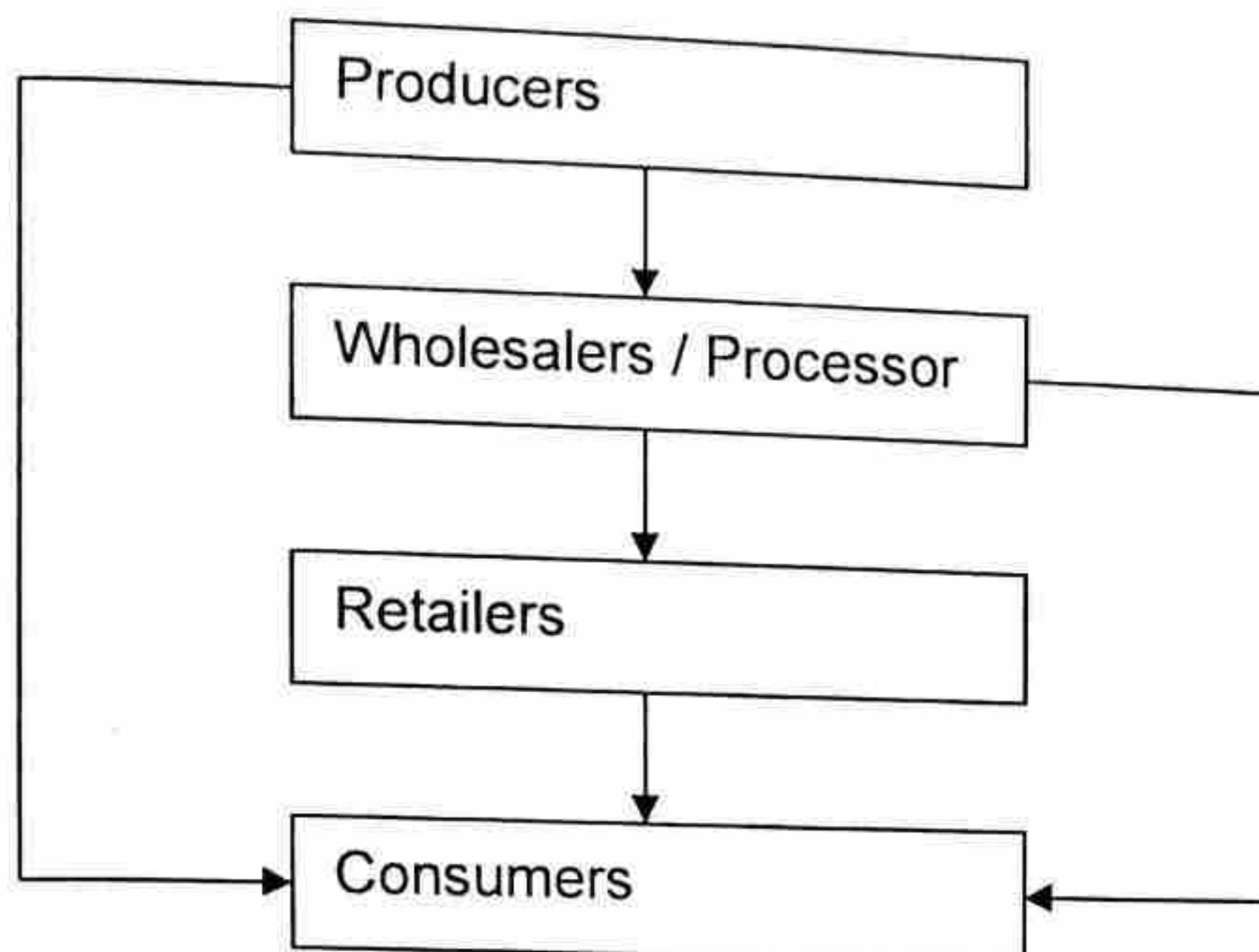| Channel	Frequency	Percentage %
Direct to consumer	72	60.00
Commission agents	15	12.2
Other merchants	33	27.8
Total	120	100%

Source: Field survey Data, (2004)

Fig I Largest population absolute increase: south Asia fastest population growth: Africa. 2 S and C America campell platt
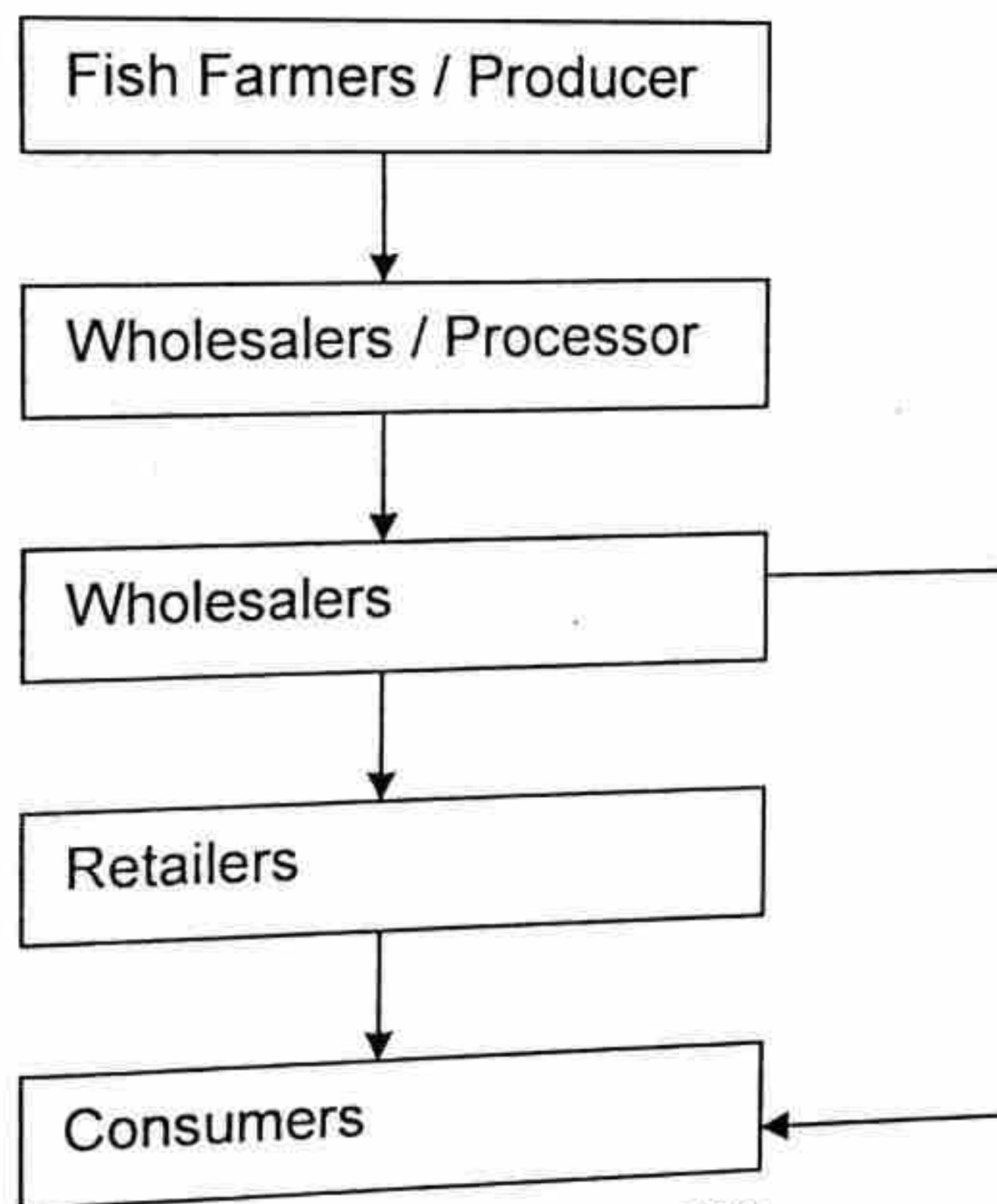(Fig 1. world population 1984)

Source: Field survey data (2004).

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Fig 2 Fish Distribution Channel in Minna Local Government Area

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          ┌──────▶│     Producers       │
          │       └──────────┬──────────┘
          │                  │
          │                  ▼
          │       ┌─────────────────────┐
          │       │ Wholesalers / Processor │──────┐
          │       └──────────┬──────────┘          │
          │                  │                      │
          │                  ▼                      │
          │       ┌─────────────────────┐          │
          │       │     Retailers       │          │
          │       └──────────┬──────────┘          │
          │                  │                      │
          │                  ▼                      │
          │       ┌─────────────────────┐          │
          └──────▶│     Consumers       │◀─────────┘
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Source: Field survey data (2004).

Fig 3 Fish Distribution in Shiroro Local Government Area Markets

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          ┌─────────────────────────┐
          │  Fish Farmers / Producer │
          └────────────┬────────────┘
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                       ▼
          ┌─────────────────────────┐
          │  Wholesalers / Processor │
          └────────────┬────────────┘
                       │
                       ▼
          ┌─────────────────────────┐
          │      Wholesalers        │──────┐
          └────────────┬────────────┘      │
                       │                    │
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          ┌─────────────────────────┐      │
          │       Retailers         │      │
          └────────────┬────────────┘      │
                       │                    │
                       ▼                    │
          ┌─────────────────────────┐      │
          │       Consumers         │◀─────┘
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Source: Field Survey Data 2004

Fig 4 Fish Distribution Channel in Wushishi Local Government Area Markets.

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