SARDINELLA MARKET TRENDS IN THE WEST AFRICAN SUB-REGION

Ernest O. TETTEY

International Trade Expert
INFOPECHE
Abidjan, Côte d'Ivoire

and

Kwame A. KORANTENG
Senior Research Officer
FRUB, Fisheries Department
Tema, Ghana

Abstract :

Sardinella fished mainly in Ghana and Côte d'Ivoire.are an important component of cheap fish trade for countries of West Africa. This document examines the landings, the flows of Sardinella and the prices evolution over the past recent years. It is concluded that Sardinella remains the cheapest source of animal protein in the West African region and that improvement of conditions of trade are possible.

Résumé :

Les Sardinelles pêchées surtout au Ghana et en Côte d'Ivoire sont une composante importante du commerce de poisson vivrier en Afrique de l'Ouest. Ce document examine les apports, les flux de Sardinelles et l'évolution des prix au cours des années récentes. La conclusion est que la Sardinelle reste la source la moins onéreuse de protéines animales dans la région d'Afrique de l'Ouest et que des améliorations des conditions de commercialisation sont possibles.

1. Seasonal Distribution in Sardinella Landings

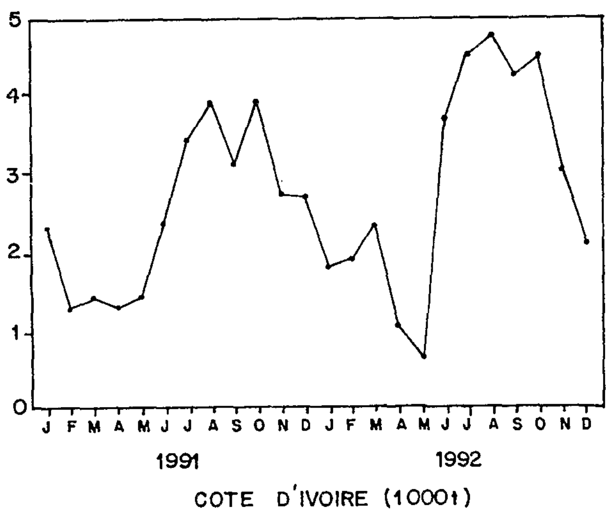
Small pelagic resources off the western Gulf of Guinea coastal countries are concentrated in Ghana and Côte d'Ivoire. The major species harvested are the sardinellas, anchovies and mackerels. Wide variations in small pelagic fish landings have been observed and are attributed, in part, to the phenomenon of upwelling. In good years, total small pelagic catch off the Gulf of Guinea could exceed 300,000 MT with about three quarters originating from Ghanaian waters (Pezennec, 1991).

Artisanal fishermen play a dominant role in exploiting the small pelagic resources. The anchovy stocks are harvested exclusively by the canoe fishermen operating off the Ghanaian and Togolese coastlines. The bulk of Ghana's sardinella landings are also from the artisanal sector. The Ivorian industrial fleets, on the other hand, are as equally important as the canoe fleets in the domestic production of sardinella.

The sardinella season in the sub-region usually begins in June/July and ends in November/December. This has been consistent with the seasonal distribution in catches for Côte d'Ivoire and Ghana over the last couple of years. In Ghana, sardinella production for 1991 and 1992 reached their seasonal peaks in August and July respectively (Figure 1). In Côte d'Ivoire, the producers recorded their season high for both 1991 and 1992 in the month of August.

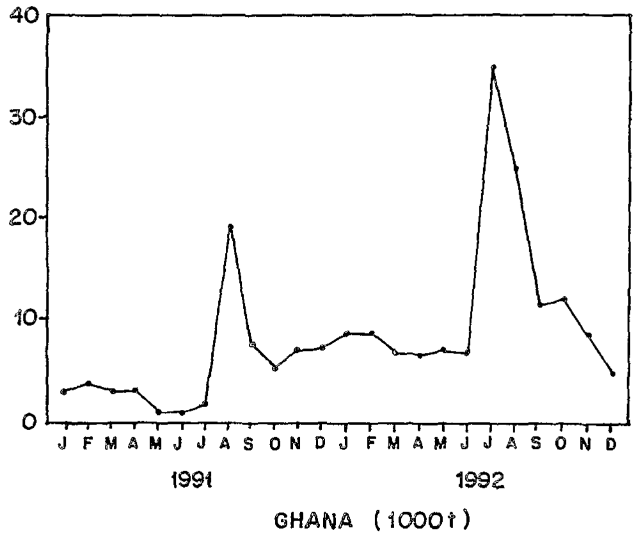
To meet increasing demand for fish in Gulf of Guinea coastal countries, substantial volumes of frozen sardinella/herring, among other frozen fish, are imported to supplement local catches. The bulk of the imports originate from Senegal, Mauritania, Guinea and from Russian fleets operating off Western Africa. The leading frozen small pelagic markets in West and Central Africa include Nigeria, Côte d'Ivoire, Zaire, Cameroon, Ghana, Togo and Congo.

Figure 1 : Monthly Sardinella Landings, 1991-92 (MT)



Monthly Distribution of Sardinella Catch, Côte d'Ivoire (1,000 MT) **(A)**

Monthly Distribution of Sardinella
Catch, Ghana (1,000 MT) (B)



SOURCE : CRO/ORSTOM, Abidjan, Côte d'Ivoire FRUB, Tema, Ghana

Imports feature prominently in Ivorian sardinella supplies. In 1991, some 21,440 MT of frozen sardinella were imported into Côte d'Ivoire, about the same quantity landed by the industrial operators that year. Over two thirds of the frozen sardinella imports, however, arrive outside the «herring» season.

2. Fresh Sardinella Price Trends

2. 1 Fresh Sardinella Price Movements in Côte d'Ivoire

Ivorian sardinella landings by the industrial fleet are sold at the fishing port through auction. The auction takes place at dawn and the fish is packaged in wooden crates each weighing about 60 kg. They are auctioned in lots of 50 crates and the buyers in turn sell them in lots of 2, 3 or 5 crates to artisanal processors. In effect, the large-scale dealers buy at low prices and re-sell to the processors with significant margins - reaping benefits without doing any productive work.

At the artisanal level, the fresh sardinella is often sold to the wives or relatives of the fishermen for processing. In few instances, the operations may be financed by an economic operator through a contractual arrangement who in return gets the catch. Direct sales between fishermen and independent processors through bargaining are also common. The bulk of the sardinella landings are smoked prior to utilization.

The inverse relationship between landings and prices have been clearly exemplified in the illustrations (Figures 1 & 2). In Côte d'Ivoire,the sardinella auction prices ranged from a low of 73 CFA/kg in the month of July to a high of 165 CFA/kg in May for the year 1992, reflecting the movement in landings. It should be added that in some years, during the peak period, sardinella prices could fall to the extent that producers in isolated cases have to discard significant volumes at sea.

Anywhere from a quarter to a third of the Ivorian frozen sardinella imports arrive during the «herring season» and they significantly affect the landing prices of the locally produced ones. Frozen sardinella has a unique clientele - mainly processors in the interior therefore its prices are hardly affected by excess supply at the production centres.

2. 2 Fresh Sardinella Price Movements in Ghana

In Ghana sardinella is sold either directly by the producer or through a middleman. As the fish is discharged from the vessel, the middleman sells to retailers or consumers at a price mutually agreed upon after lengthy bargaining. Sardinella is sold in wooden boxes or in standard basins. The average weight of a box of sardinella is 30 kg.

In both artisanal and industrial fisheries, some of the middlemen contribute financially towards the operation of the fishing craft. In return, the vessel's landings are sold only through those middlemen. Most of the middlemen in the artisanal sector are the wives and relatives of the fishermen. In addition to contributing to the operation of the fishing craft, these middlemen also offer credit to the fishermen in the acquisition of fishing gear (Koranteng and Nmashie, 1987). They also assist the fishermen in times of difficulty, especially during the lean fishing season. As many as 18 women may handle the processing, distribution and

Figure 2 : Fresh Sardinella Price Trends, 1991-92

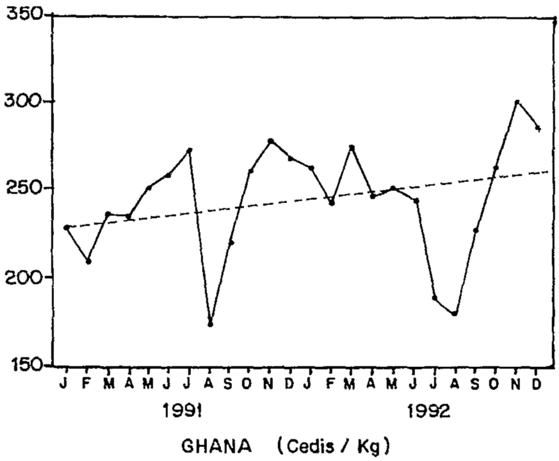
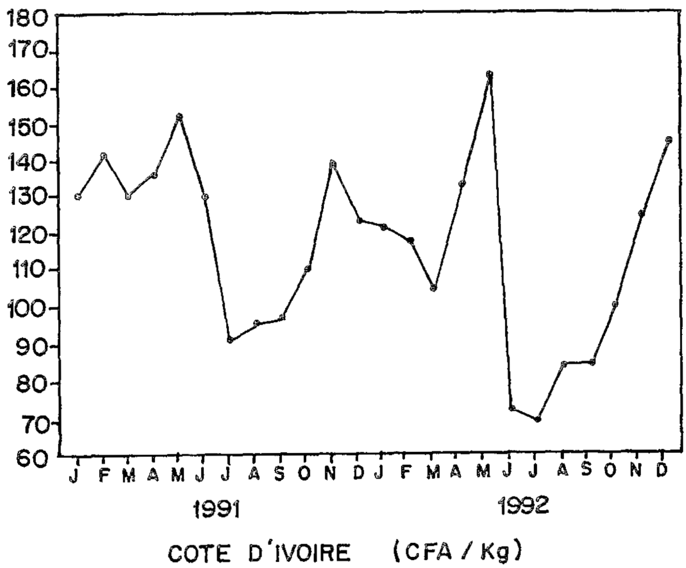


Figure 2 (A)
Ex-Vessel Prices, Tema, Ghana (cedis/kg)

Figure 2 (B) Auction Prices, Abidjan
(cedis/kg) Côte d'Ivoire (CFA/kg)



Source : INFOPECHE Database

marketing of the landings of one canoe; and one woman could be associated with more than one canoe (Koranteng et al, 1993).

For the 1991 and 1992 seasons, ex-vessel prices of sardinella varied between 167 cedis per kg in July/August 1991 to 330 cedis per kg in November/December 1992 (Figure 2). Although the usual inverse relationship between landings and prices is evident, there is also the underlying increasing trend in nominal prices over the two-year period as a result of inflationally pressures.

Prices of fresh sardinella landed by artisanal fishermen on the other hand, trended downwards. This is attributed to the fact that the 1992 catch was more than double that of 1991. Fish landed by canoes were generally sold at lower prices than those landed by the industrial vessels. In the former case, prices as low as 75 cedis/kg were recorded during the peak season.

Besides the seasonal variation in catch, the other major determinant of sardinella landing prices is the tonnage of frozen sardinella imports available on the market. In Ghana, the fish producers have expressed concern about importing sardinella during the «herring season» which contribute in depressing prices. They have petitioned the Government to allow frozen fish imports only outside the «herring» season. The Government has granted this request and has consequently placed a ban on the importation of frozen fish during this period.

Concerning price differentiation by species, it has been observed that fresh flat sardinella (Sardinella maderensis) auction prices tend to be higher than round sardinella (Sardinella aurita) prices in Côte d'Ivoire. This may be attributed to the generally low supplies of the flat sardinella and as a consequence, higher demand. Similarly in Ghana, flat sardinella generally fetches a higher price than round sardinella, except during the main fishing season when buyers (mainly processors) show preference for round sardinella. This preference may be influenced by the fatty nature of the round sardinella which reaches the peak of its fat cycle towards the end of the main fishing season (Kwei, 1966).

3. Smoked Sardinella Market Trends

Within the framework of an EEC funded regional fisheries programme for West Africa, cured fish trade in the sub-region is being monitored to examine among other things, quantities traded, trade flows and price trends. The programme has built up time-series of price data concerning smoked sardinella export trade from Côte d'Ivoire to Burkina Faso, and from Ghana to Togo/Benin, among others.

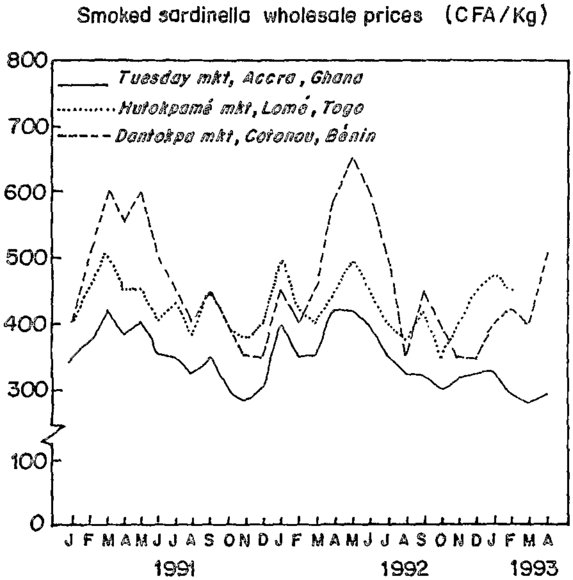
It has been observed that trends in fresh sardinella landing prices are generally reflected in smoked sardinella price movements on major wholesale markets, the only difference being that the smoked fish prices are lagged a month or so behind the fresh fish prices - period required for processing, storage and/or transfer to market (Tettey and Zigani, 1992).

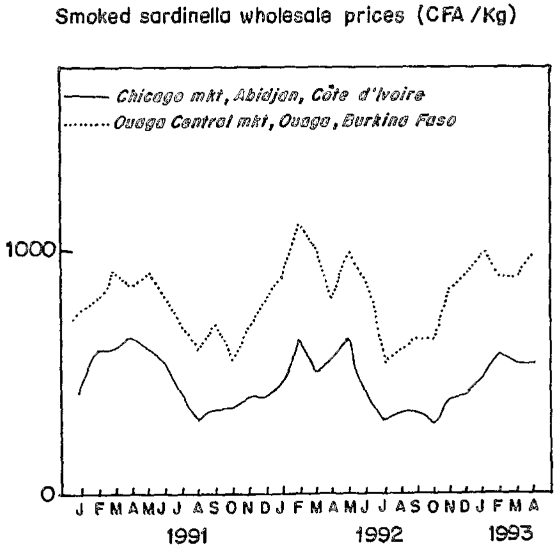
3.1 Smoked Sardinella Price Trends in Côte d'Ivoire/ Burkina Faso Trade

A market investigative study undertaken as part of the activities of the EEC fisheries programme revealed that traders' margins alone account for a large share of the difference between smoked sardinella wholesale prices on the «chicago» market, Abidjan, and on the Ouagadougou central market. A kg of smoked sardinella traded at 400 CFA on the «Chicago» market is sold at 750 CFA at the wholesale level in Ouagadougou - a difference of 350 CFA. Of this amount, actual marketing costs (transportation, customs, packaging, storage) came up to 80 CFA per kg with the traders making 270 CFA on every kg.

Figure 3 : Smoked Sardinella Wholesale Prices, January 1991 to April 1993

Ghana/Togo/Benin Trade (CFA/kg)





Côte d'Ivoire/Burkina Trade (CFA/kg)

Source : INFOPECHE Database

The price trends on the Chicago market and on the Ouagadougou central market are very identical. In periods of short supplies, smoked sardinella wholesale prices on the chicago market could go as high as 600 CFA per kg or more. Beyond 600 CFA per kg, the Burkinabe traders cease buying since the products become too expensive and less affordable on the Ouagadougou market.

In periods of abundance, on the other hand, smoked sardinella could be traded as low as 300 CFA per kg on the chicago market triggering a similar drop in prices on the Ouagadougou central market to about 600 CFA per kg. In effect, smoked sardinella wholesale prices on the chicago market have been ranging from a low of 300 CFA per kg to a high of about 650 CFA. Similarly, wholesale prices on the Ouagadougou market have been fluctuating between 600 and 1100 CFA per kg.

3. 2 Smoked Sardinella Price Trends in the Ghana/Togo/Benin Trade

Unlike the Côte d'Ivoire/Burkina Faso smoked sardinella trade in which the seasonal variation in catch has been the single most important factor dictating price movements, elsewhere in the Ghana/Togo/Benin trade, price trends are also influenced to a considerable degree by currency fluctuations. Occasional closure of the Ghana/Togo border following social/political unrests also affect this trade.

While smoked sardinella price trends in cedi terms (or nominal value) have been reflecting the supply situation, in real terms or when denominated into CFA equivalent, smoked sardinella prices have trended downwards since the mid-1992 following the steady decline in the value of the cedi over this period. In August 1992, a kg of smoked sardinella was selling for 500 cedis on the «Tuesday» market, Mamprobi, Accra but this increased to 600 cedis in April 1993 following short supplies (Tettey and Klousseh, 1992).

In CFA terms, however, prices declined over the same period. The Togolese and Beninois traders were paying 315 CFA per kg in August 1992 as against 300 CFA per kg in April 1993. The reason for this disparity in price trends is that, in August 1992, 1000 CFA were fetching the Togolese traders 1,600 cedis as against 2,000 cedis in April 1993. The depreciating value of the cedi favours the Togolese and Beninois buyers.

The recent border closure disrupted flow of goods between the two countries. Limited loads of smoked sardinella were entering Togo usually through bush paths. As a result, stocks were built up in the supply centres including the Tuesday market. This situation temporarily prevented any significant jumps in prices. In contrast, prices significantly increased in Lomé following the short supplies.

Smoked sardinella wholesale price trends on the Tuesday market, Accra, have bore a close resemblance to those on the Hutokpamé market, Lomé from January 1991 to April 1993 (Figure 3). Price movements on the Dantokpa market, Benin, in contrast have diverged from those on the Tuesday market in a number of instances. This is explained by the fact that the Hutokpame market in Lomé receives the bulk of its smoked sardinella supplies from Ghana and therefore their prices are more likely to be influenced by those existing on the Tuesday market.

The Dantokpa market, on the other hand, depends less on Ghanaian sources for smoked sardinella. Most of the supplies are rather obtained from local sources. As a result, smoked sardinella price movements are influenced to a large extent by local trends in domestic landings.

4. Concluding Remark

Smoked sardinella remains one of the cheapest source of animal protein in West and Central African coastal countries. Despite the wide fluctuation in prices, this product is well patronised by consumers largely because it is affordable but also it is often smoked-dried, permitting a longer shelf life and a wider distribution. Even in periods of short supplies and high prices, smoked sardinella can be retailed in Abidjan for 700 CFA per kg against 1,500 CFA for a kg of smoked catfish or 1,000 CFA for beef and 1,300 CFA for mutton.

It is quite evident that traders' margins account for a large chunk of what consumers pay for their smoked sardinella. For a more reasonable pricing, it is essential that the marketing operations are streamlined, minimizing the number of middlemen but also developing strategies to reduce marketing costs. In such trading blocks as the Gambia/Guinea smoked bonga trade, a number of traders pool their stocks together and transport them in large 7 to 10-ton trucks, saving on transportation cost per unit product. They further sell directly to consumers, or in a few instances, to retailers thereby eliminating a host of middlemen.

The major causes of variation in sardinella prices are supply and demand factors, notably volume of landings and of imports. To avoid depressing sardinella prices further during the «herring» season, importers should be encouraged to bring in their frozen sardinella outside the «herring» season - from January to June, a period of high demand but low domestic supplies.

As far as international trade is concerned, smoked sardinella prices are also affected by currency fluctuations. This is particularly true for the Ghana/Togo trade. With the steady depreciation in the value of the cedi, the Togolese buyers were finding smoked sardinella cheap on the «Tuesday» market even during the offseason when local prices were high. The Ghana/Togo/Benin trade is expected to significantly expand when situation in Lomé is normalized.

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ANNEXE 1 : LANDINGS OF SARDINELLA AURITA IN THE SUB - REGION. BY COUNTRY AND FISHERY, 1980-1992 (1.000 MT)

Year	Côte d'Ivoire		Ghana		Togo	Bénin	*Total
	Ind.	Art.	Ind.	Art.			
1980	1.83	0.91	2.77	19.13	0.10	n/a	24.74
1981	8.73	1.52	5.53	10.08	0.27	n/a	26.18
1982	11.21	6.20	7.33	14.66	0.98	n/a	40.38
1983	11.68	15.36	9.02	36.30	0.47	n/a	72.83
1984	7.17	12.04	3.40	34.82	1.14	n/a	58.57
1985	24.39	18.50	9.43	54.07	0.61	0.12	107.12
1986	19.51	20.00	5.51	45.50	3.87	0.20	94.59
1987	20.28	15.00	1.74	45.67	0.15	0.19	83.03
1988	11.28	5.97	0.67	75.85	0.15	0.40	94.32
1989	11.38	3.75	4.07	61.16	n/a	n/a	n/a
1990	12.41	3.61	2.42	43.17	n/a	n/a	n/a
1991	14.19	3.47	2.50	50.45	n/a	n/a	n/a
1992	23.51	4.77	6.30	119.52	n/a	n/a	n/a

Source : CRO/ORSTOM, Abidjan, Côte d'Ivoire; FRUB, Tema, Ghana; FAO, Rome, Italie

(*) Bénin landings are not included in totals for years 1980/84.

ANNEX II: LANDINGS OF SARDINELLA MADERENSIS IN THE SUB-REGION, BY COUNTRY AND FISHERY, 1980-92 (1,000 MT)					
Year	**Côte d'Ivoire**	**Ghana**	**Togo**	**Benin**	***Total**
	Ind.	**Art.**	**Ind.**	**Art.**	
1980	8.53	0.35	0.65	11.31	0.11 n/a 20.95
1981	9.88	0.67	0.86	12.45	0.06n /a23.92
1982	4.82	0.62	0.87	14.01	0.09 n/a 20.41
1983	8.15	9.06	0.61	7.67	0.42 n/a 25.91
1984	7.97	3.18	1.03	10.08	1.19 n/a23.45
1985	7.42	7.65	1.83	22.23	0.51 0.9540.59
1986	10.08	8.70	2.09	16.63	0.48 1.3139.29
1987	9.18	9.00	1.70	25.48	0.452.4948.00
1988	6.41	2.27	0.10	10.45	080.92 20.26
1989	7.72	2.12	0.32	14.10	n/a n/a n/a
1990	11.60	4.91	0.94	14.55	n/a n/a n/a
1991	7.76	2.14	0.25	8.21	n/a n/a n/a
1992	2.08	2.39	0.17	15.14	n/a n/a n/a

Source : CRO/ORSTOM, Abidjan, Côte d'Ivoire
FRUB, Tema, Ghana
FAO, Rome, Italy

* Benin landings are not included in totals for years 1980-84