

REPORT ON IMPORTATION OF MACKEREL IN  
TOMATO SAUCE

CONSIDERATION OF REPLACEMENT WITH EITHER  
FROZEN OR SALTED MACKEREL

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SALTED MACKEREL

INTRODUCTION

The importation of Mackerel in tomato sauce sealed in cans of 155 g net weight has been going on for many years in the country. It has now got to a stage where importation is eating too much into the country's foreign reserves.

The National Procurement Agency therefore sent a request to the Food Research Institute asking it to consider and advise whether it would be cheaper to import frozen or salted mackerel in place of the mackerel canned in tomato sauce.

The Problem

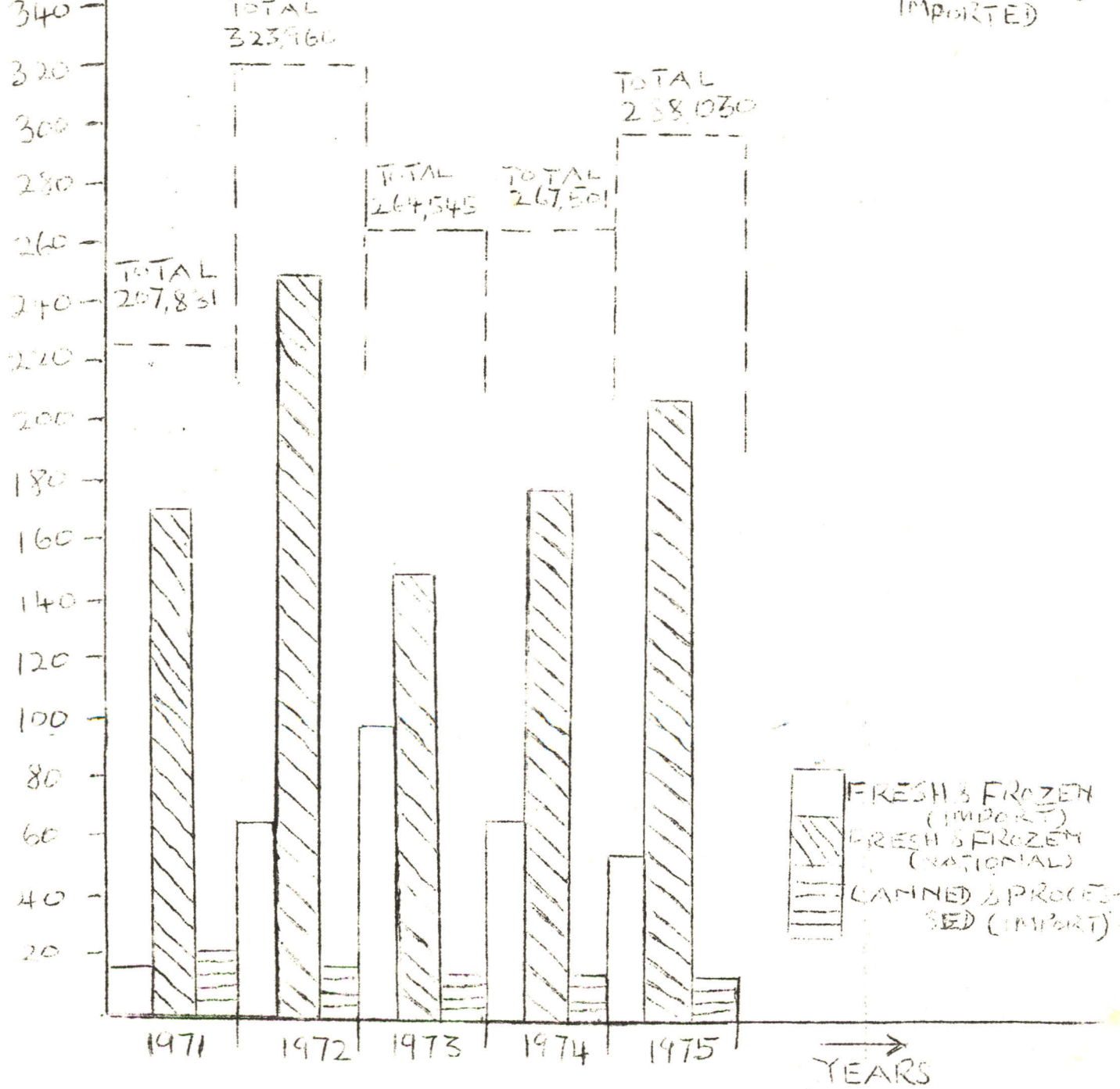
In order to consider this problem in the right perspective, it became necessary to define the problem in terms of a broad and relevant basis as follows:-

1. To find out the quantities of fish utilized in the country during a given period of time. The period between 1971 to 1975 was chosen as a convenient time for a sampling study.
2. To consider the sources and types of fish utilized within the specified period with respect to (a) quantities obtained locally (b) quantities imported and (c) the forms in which they were imported.
3. To find out the amount of money spent on the quantities and forms of fish imported into the country within the specified period.
4. To determine the types, capacities and positions of storage facilities in the country.
5. To find out the facilities and capacities available in the country for processing of fish.



Quantity in 1000 TONS

# QUANTITIES OF FISH (TYPES) PRODUCED (LOCALLY AND IMPORTED)



FRESH & FROZEN (IMPORT)  
FRESH & FROZEN (NATIONAL)  
CANNED & PROCESSED (IMPORT)

YEARS

TABLE I  
NATIONAL FISH SOURCES 1971 - 1975

SOURCE	1971		1972		1973		1974		1975	
	QTY (Metric Tons)	% of Nat. Total	QTY (Metric Tons)	% of Nat. Total	QTY (Metric Tons)	% of Nat. Total	QTY (Metric Tons.)	% of Nat. Total	QTY (Metric Tons)	% of Nat. Total
Fresh & Frozen (Local Production)	176,254	85%	249,068	77%	155,315	58%	182,080	67%	212,680	74%
Fresh & Frozen (Imports)	10,676	5%	62,107	19%	91,048	34%	73,103	27%	62,512	22%
Canned Processed (Imports)	20,599	10%	13,984	4%	19,926	8%	14,755	6%	14,041	4%
Total Imports	31,275	15%	76,091	23%	110,974	42%	87,858	33%	76,553	26%
National Total	207,529		325,159		266,289		269,938		289,233	

6. To investigate factors influencing the demand for mackerel in tomato sauce by consumers.

These problems were referred to Mrs. G. Nerquaye-Tetteh and Mr. E.F. Sackey, details of the work was carried out with the assistance of Messrs S. Nyarko and J.K. Magbo, Senior Technical Officers, Economics and Refrigeration division respectively.

#### METHODOLOGY

In order to collect information on the above problems, a questionnaire (Appendix 1) was designed. Time was short so the survey work was concentrated in the Greater Accra Region. A visit was also paid to the Volta Lake Research and Development Project at Akosombo to collect data on fresh fish from the Volta Lake. Agencies who handle fish were also served with questionnaire forms. The forms were duly completed by them and the survey team went round to collect them.

#### RESULTS

1. Mode of Operation

The results showed that only 2.0% of the agencies who handle fish are processors (excluding the traditional processors) 74% are retailers and 24% are distributors. The traditional processors who smoke, salt, dry and fry fish were excluded in the survey work because they are not organised so it was not easy to collect any information from them.

2. Fish Sources 1971 - 1975

##### 1971 Sources

The analysed data presented in Table 1 and Figure 1 show the National Fish Sources from 1971 - 1975. In 1971, the country used a total of about 208,000 tons of fish. Out of this, 176,000 tons were obtained by local canoe fishermen and commercial boats, and the rest of about 31,000 tons were imported. Of this quantity 21,000 tons was imported as frozen fish.



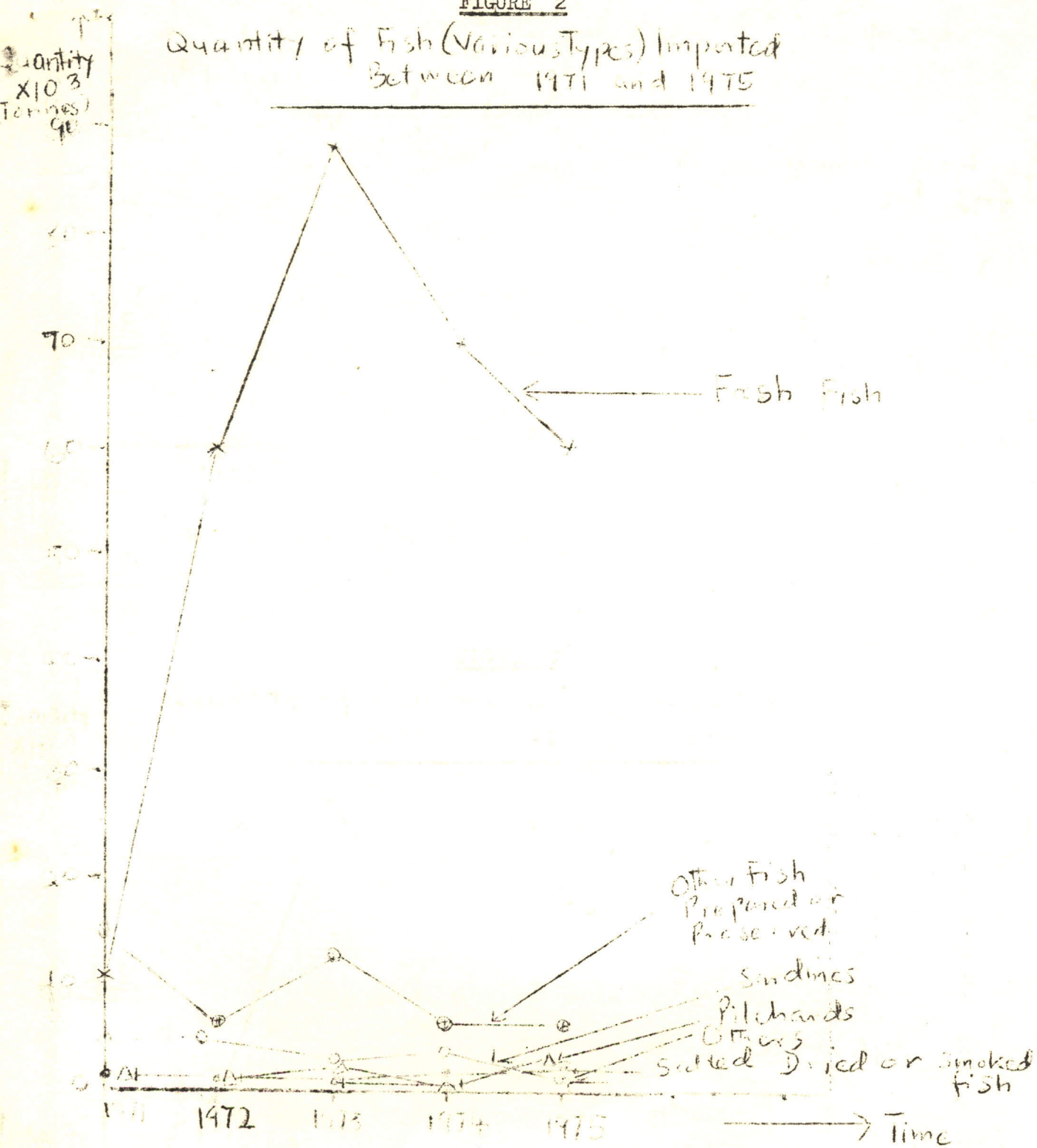
TABLE 2

QUANTITY OF MACKEREL IN RELATIONS TO TOTAL QUANTITY OF FISH IMPORTS

	1971 (Metric Tons)	1972 (Metric Tons)	1973 (Metric Tons)	1974 (Metric Tons)	1975 (Metric Tons)
Total Fish (Imports)	31,275	76,091	110,974	87,858	76,553
Canned Sardines (Imports)	4,659	6,235	3,444	4,140	886
Pilchards (Mackerel)	493	309	1,082	578	2,402
Total for Sardines and Mackerel	5,152	6,544	4,526	4,718	3,288
% of Sardines & Mackerel to Total Imports	16%	9%	4%	6%	4%
Total for other Fish	15,447	7,440	15,400	10,036	10,753
% of other fish Imports to total fish imports	50%	9%	14%	11%	14%
Fresh & Frozen (Imports)	10,676	62,107	91,048	73,103	62,512
% of fresh & Frozen to total fish Imports.	34%	82%	82%	83%	82%

FIGURE 2

Quantity of Fish (Various Types) Imported  
Between 1971 and 1975



KEY

- x - - - Fresh Fish
- o - - - Salted, Dried or smoked fish
- c - - - Sardines
- Δ - - - Pilchards
- ⊕ - - - Other Fish Prepared or Preserved
- + - - - Others (Stock fish, Crustacea, molluscs, Caviar and Salmon)

### 1972 Sources

In 1972 the country utilised approximately 325,000 tons of fish (Table 1). Out of this about 249,000 tons was obtained from local sources from the canoe fishermen and commercial boats. The rest of about 79,000 tons was imported in the form of frozen and processed or canned fish (Table 2).

### 1973 Sources

The total quantity of fish used in 1973 was about 266,000 tons (Table 1) of this about 155,000 tons came from local sources and the remaining amount 111,000 tons were imported (Table 2). About 91,000 tons of the imported fish was frozen and 20,000 tons were imported as canned or processed fish (Table 2).

### 1974 Sources

In 1974 country utilized approximately 270,000 tons (Table 1) of fish, of which approximately 182,000 tons was obtained from local sources and 88,000 tons was imported as processed or canned fish (Table 2).

### 1975 Sources

In 1975, the country obtained 289,000 tons of fish (Table 1). Of this amount about 213,000 tons came from local resources. 76,000 tons was imported as frozen or processed fish (Table 2).

## 3. Mackerel Importation in Relation to Fish Imports

Fish is imported into the country in the forms stated below:-

- (a) Frozen
- (b) Salted dried or smoked
  - (i) Stock fish
  - (ii) Smoke dried fish
- (c) Canned
  - (i) Pilchards
  - (ii) Sardines



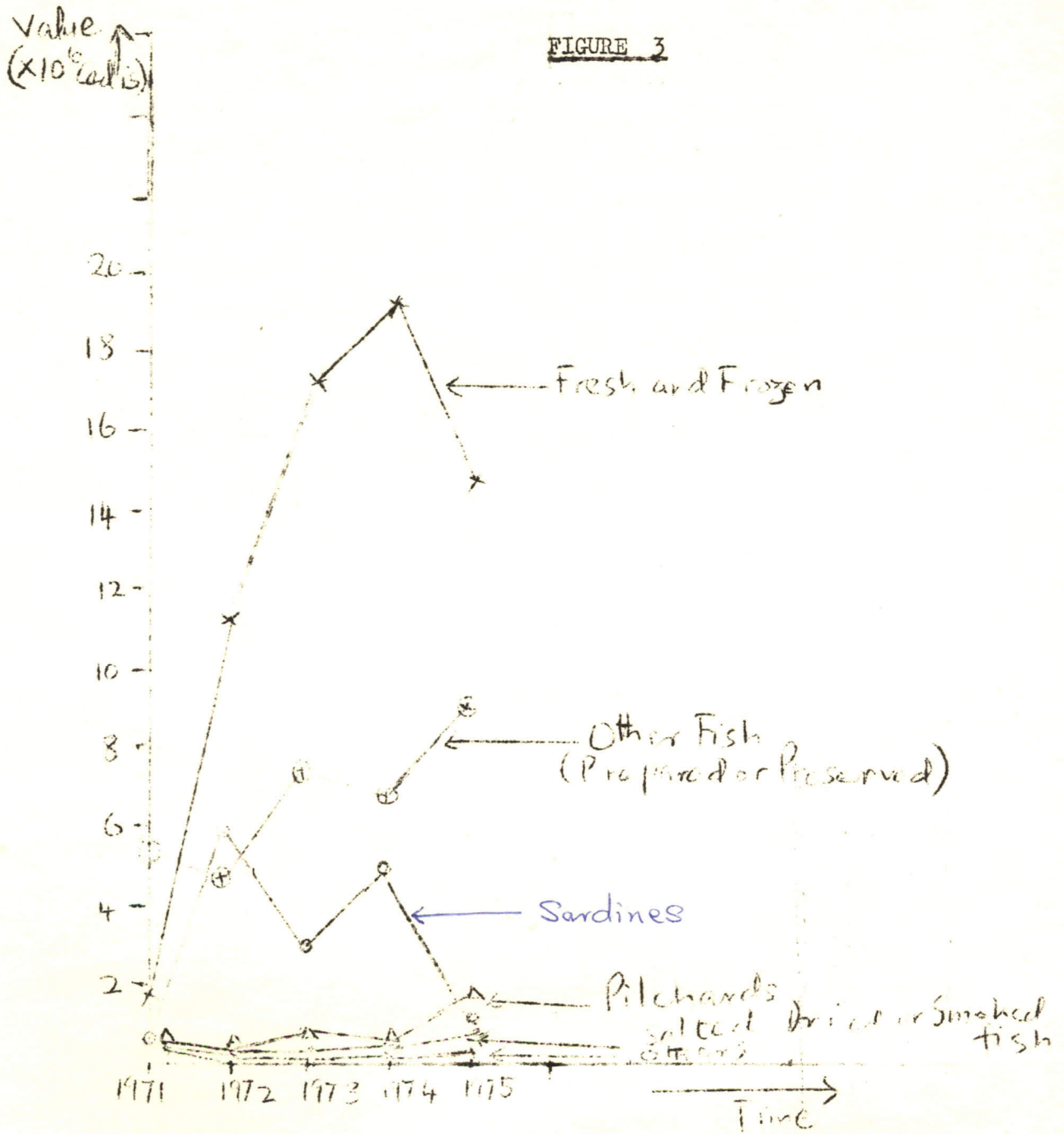
TABLE 3

TOTAL AMOUNT OF CEDIS SPENT ON MACKEREL (PILCHARD) IMPORTATION  
IN RELATION OF TOTAL AMOUNTS SPENT ON FISH IMPORTS

	1971 Amt. in Cedis	1972 Amt. in Cedis	1973 Amt. in Cedis	1974 Amt. in Cedis	1975 Amt. in Cedis
Total Fish Imports	8,429,558	23,391,114	29,535,200	33,542,062	29,503,684
Canned Sardines (Import)	362,954	6,248,940	2,925,763	5,977,850	1,160,657
Pilchards (Mackerel) Imports	242,717	218,834	821,818	561,975	2,436,955
Total for Sardines and Mackerel	605,671	6,467,774	3,747,581	6,539,825	3,597,612
% of Sardines & Mackerel to Total Imports	7%	28%	13%	19%	12%
Total for other fish imports	588,101	5,097,058	8,125,215	8,427,822	10,568,180
% of other Fish imports to Total Fish Imports	70%	22%	27%	26%	36%
Fresh and Frozen (Imports)	1,935,786	11,826,282	17,862,404	18,574,415	15,337,892
% of Fresh and Frozen to Total Fish imports	23%	50%	60%	55%	52%

# AMOUNT SPENT ON IMPORTATION OF FISH (VARIOUS TYPES) BETWEEN 1971 AND 1975

FIGURE 3



## KEY

- X - - - Fresh Fish
- ⊕ - - - Salted, Dried or Smoked Fish
- - - - Sardines
- △ - - - Pitcherds
- ⊕ - - - Other Fish (Prepared or Preserved)
- + - - - Others (Stock Fish, Crustacea, Molluscs, Carriar and Salmon)



(d) Other canned and bottled fish products

- (i) Caviar & Caviar substitutes
- (ii) Crustacea etc.

Figure 2 - gives a trend in the status of fish imported into the country between 1971 and 1975. A greater proportion of the imported fish was in the form of frozen fish around 82% from 1972 - 1975 and 34% in 1971 when the total imports was low.

Table 2 gives the same distribution in import figures obtained from 1971 - 1975. The table shows that whenever the figure for canned sardines went up that for canned mackerel went down. The total imports for canned sardines and mackerel ranged between 3,000 tons to 7,000 tons per annum. These figures represent between 4 - 9% of the total imports for 1972 - 1975. The 1971 figure was about 16% of the total imports.

Even though the percentage of canned fish imported as compared to the total fish imports is small, we in Ghana realise the delicate role this form of fish plays in the society.

Amounts spents on Mackerel in relation to total amount spent on fish importation

Table 3 gives an account of the amounts of money, in cedis, spent on the importation of fish during 1971 - 1975. Figure 3 gives a picture of the amount of money spent on the importation of fish.

Tables 4a & 4b show the summary of the rate of expenditure in relation to quantities of fresh or processed fish imported into the country during 1971 - 1975.

Fish Storage Facilities

The distribution of fish storage facilities available in the country and their capacities are shown in figure 4. The only storage facility appears to be cold store. The national total storage capacity was calculated to be about 38,500 toones with over half of this available in the Greater Accra Region. The Western region had less than 500 tons. The breakdown of storage facilities is as follows:- 76.6% of the facilities are in the hands of distributors; 6.2% for rentals and 9.3% for retailers,



TABLE 4a

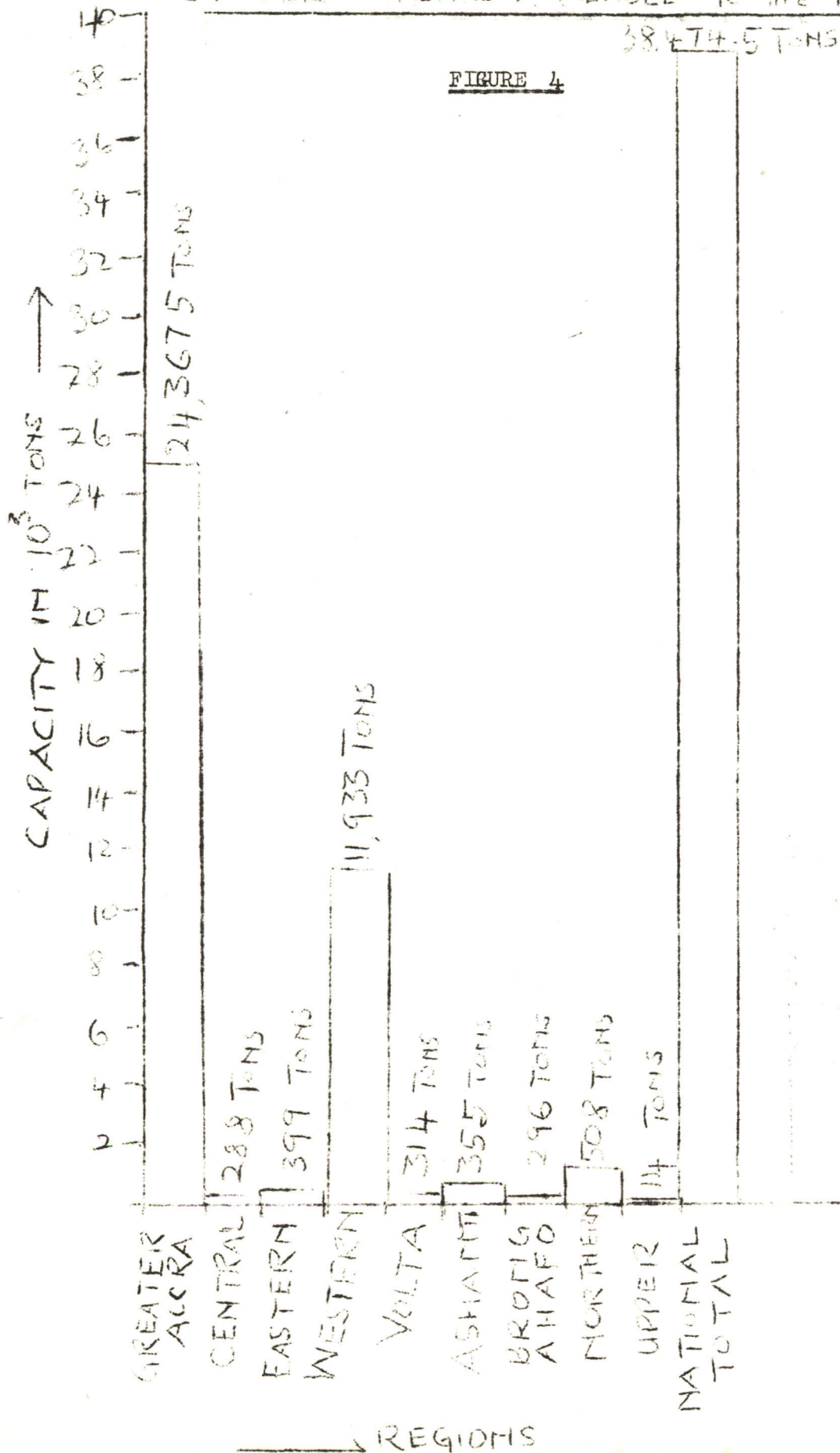
RATE OF EXPENDITURE ON FRESH OR PROCESSED FISH  
IMPORTS 1971 - 1975

YEAR	Sardine and Mackerel		Fresh and Frozen Fish		Other Processed Fish	
	Quantity 10 <sup>3</sup> tonne	Amount 10 <sup>6</sup> Cedis	Quantity 10 <sup>3</sup> tonne	Amount 10 <sup>6</sup> Cedis	Quantity 10 <sup>3</sup> tonne	Amount 10 <sup>6</sup> Cedis
1971	5.1	0.6	10.7	1.9	15.4	0.6
1972	6.5	6.5	62.1	11.8	7.4	5.1
1973	4.5	3.7	91.0	17.9	15.4	8.1
1974	4.7	6.5	73.1	18.6	10.0	8.4
1975	3.2	3.6	62.5	15.3	10.8	10.6

TABLE 4b

	1971	1972	1973	1974	1975
Total Fish Imports	269	307	266	382	385
Sardine and Mackerel	117	988	828	1,386	1,094
Other Processed Fish	38	93	528	840	983
Fresh and Frozen Fish	181	190	196	254	245

# STORAGE CAPACITIES AVAILABLE TO THE REGIONS



8.5% were in the hands of processors excluding traditional processors (Figure 5) Appendix 1 gives a list of fish storage facilities with their capacities and their mode of operation.

### Fish Processing

Of all the big cold stores visited, only Mankoadze Fisheries Limited and Tema Food Complex Corporation, with about 8.5% of the total fish storage facilities process fish by smoking and/or canning. The bulk of the country's fish processing is done by traditional processors who smoke, salt, dry or fry the fresh and/or frozen fish for sale in the open markets. These traditional processors are however, not organized, so they could not be included in the survey. The processors need to be organised and if possible be placed under a Government body.

### COMMENTS

1. The importation of mackerel in the canned form i.e. "Mackerel in tomato sauce may be replaced with frozen fish since consumers already know how to handle frozen fish. The amount to be imported at a time should however be related to the cold storage facilities available in the country. From the survey it was realised that the total cold storage facilities available in the country are adequate to handle up to about 35,000 tons of frozen fish at a time.
2. It will be necessary to make refrigerated vans available for the transportation of the frozen fish up country.
3. Fish in both processed and frozen/fresh forms is normally sold in the open under the direct sun in the markets. This condition increases the rate of fish spoilage. If more frozen fish is to be handled in the markets, it is necessary, therefore, to equip the markets with the proper facilities for the storage and sale of fish in order to avoid waste.
4. Almost all the cold stores contacted during the survey expressed the desire to accept frozen fish imported into the country both for storage and sale to the general public.



# STORAGE CAPACITIES AVAILABLE TO AGENCIES

