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NYASALAND PROTECTORATE

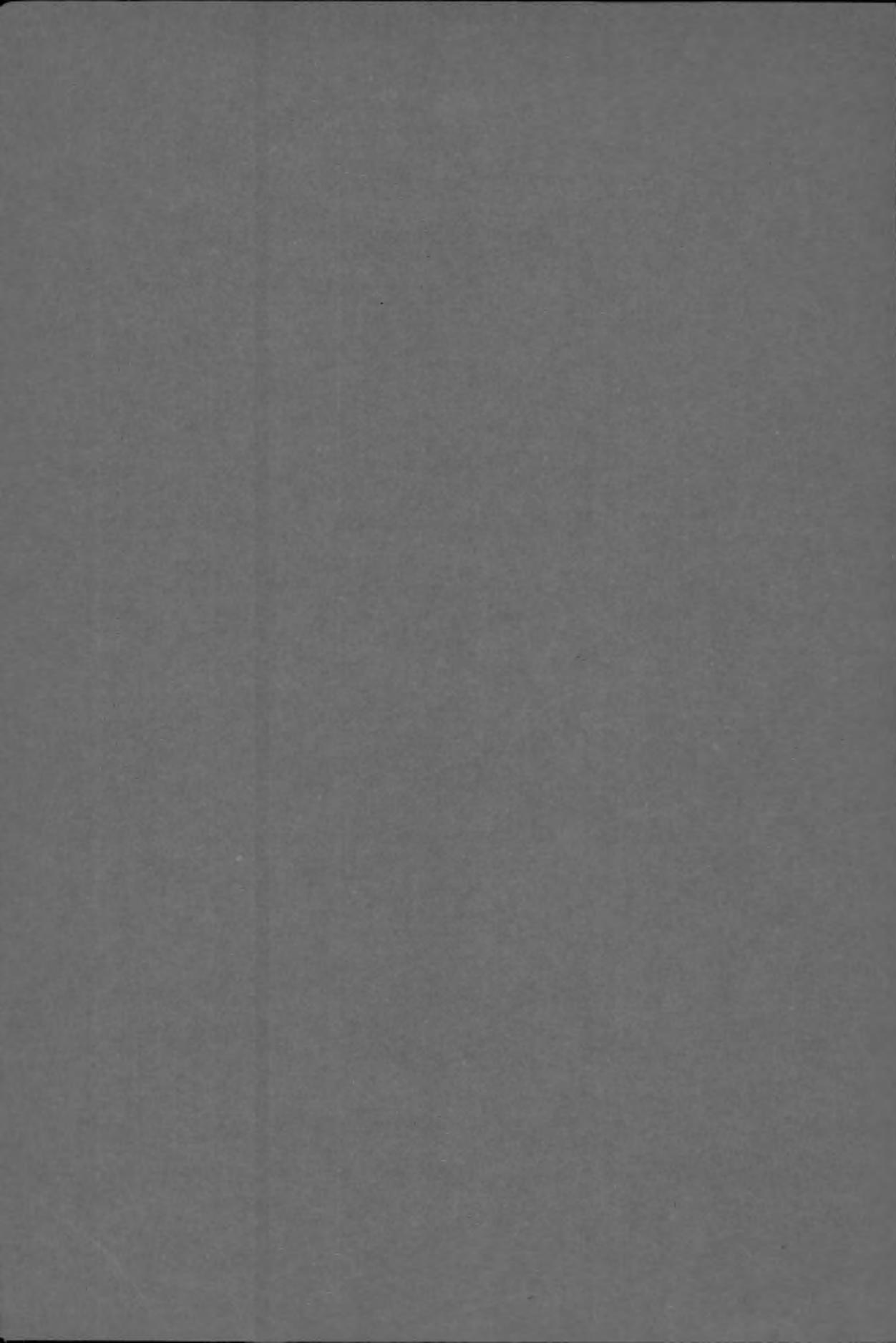


Report of the Inquiry into the Fishing Industry

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**REPORT OF THE INQUIRY INTO THE FISHING
INDUSTRY**

REPORT OF THE TWENTY-THIRD ANNUAL MEETING OF THE BOARD OF DIRECTORS OF THE NATIONAL BUREAU OF FIRE UNDERWRITERS

Terms of Reference

We were appointed a Commission dated the 24th April, 1956, with the following terms of reference:

(a) to assess as far as possible the total internal demand for locally caught fish at various price levels, and to relate this to the actual quantities caught by the existing fishing concerns, both non-African and African, in recent years;

(b) to consider the adequacy of the present arrangements of the fishing concerns, both non-African and African, for the storage, preservation, curing, transport, distribution and sale of locally caught fish, and advise how they might be improved;

(c) to assess whether fish caught locally can economically compete with imported fish;

(d) to advise whether the general or limited export of locally caught fish to the Rhodesias would be in the public interest of the Protectorate;

(e) to advise whether price control in respect of fish would be practicable or desirable.

Background

2. The fishing industry in Nyasaland is supplied by Lake Nyasa, Lakes Chilwa and Malombe and the Lower Shire River. We received evidence that a small number of fish are caught in other rivers and that the experimental stocking of dams and fish ponds is being undertaken, but there has not yet been sufficient development of this for it to make any appreciable contribution to the industry.

3. Lake Nyasa covers an area of about twelve thousand square miles, but until now commercial fishing on any large scale has taken place only in the south east arm. Some fishing does take place in the south west arm, and recently a licence has been granted to Messrs. Nielsen Bros. (Pvt.) Ltd. to fish anywhere in the Lake.

4. The maximum amounts of fish which could be removed annually from the natural waters of the Protectorate without damage to the stock can, at present, only be estimated on the rather uncertain basis of analogies drawn from areas now being commercially exploited. On this basis it is estimated that the total Tilapia production of Lake Nyasa and Lake Malombe should be of the order of 4,500 short tons per annum, to come mostly from the south east arm, the south west arm and waters between Domira Bay and Kota-Kota. Fish of the "utaka" group should account for about 6,000 short tons per annum, mostly from the Monkey Bay, Old Livingstonia, Nkata Bay and Likoma Island areas, and the more rocky parts of the Lake generally. The Labeo (*nchila*) fishery is estimated to be capable of giving about 3,000 tons only, mainly from the Southern and Central Province waters, while the catfish or barbel group may be expected to yield some 3,000 tons, fairly evenly distributed about the Lake. Lake Chilwa is probably capable of providing some 900 tons only, mostly Tilapia. The potential of the Lower Shire River, since the closing of the Liwonde bund, can really only be guessed at. It might be about 100 tons, mostly in fish of the barbel group. It would appear, therefore, that the potential sustained maximum fish production of the Protectorate is of the order of 17,500 tons a year.

5. It is probable that Tilapia production in Lake Nyasa is approaching its upper limit and that the major opportunities for expansion lie with the other species.

6. From the available evidence it appears that in 1955 the total catch of fish amounted to 4,222 tons, made up as follows:

<i>Taken by Africans</i>			
South east arm	..	..	700 tons
Salima Lake-shore	..	..	100 "
Domira Bay ..	..	..	100 "
Chia and Kota-Kota	..	..	150 "
Lake Malombe	..	..	200 "
Lake Chilwa ..	..	..	300 "
TOTAL			1,550 "

Non-African commercial fisheries (of which there were three in 1955) totalled 2,537 tons in the south east arm of the Lake and 135 tons in the south west arm.

7. Developments to be envisaged in the near future are increased fishing in the south west arm by the firm at present working there, and the commercial establishment of Messrs. Nielsen Bros. If the expectations of these firms, particularly the latter, are realized the non-African fishing will no longer be virtually confined to the south east arm and landings will be much more than doubled. Over and above this expansion significant increase might well be achieved from African fishing if a truly commercial approach is adopted. This type of expansion seems likely to have most influence in the far northern waters where, up to date, there has been little attempt at real commercial exploitation, even of the easily fished in-shore waters. No general expansion of significance, however, can be expected if markets are rigidly restricted to the Protectorate.

8. Catches vary with the season of the year. The evidence is that in the cold weather catches fall off, particularly in the case of Tilapia (*chambo*), but a table prepared by Mr. Sanson, the Fisheries Officer, which sets out the monthly non-African catches in the south east arm of the Lake in 1955, shows that in December and January less fish were caught than in May. This is explained, however, by Mr. C. C. Yiannakis, who says that he deliberately limits his catches in the wet months of the year because there would be no market for the fish if they were caught although conditions then favour large catches. There was evidence that at the worst of the rains the road from Fort Johnston through Liwonde and Zomba to Limbe was sometimes impassable. The first part of this road is also part of the only real access road from Fort Johnston to the Central Province markets. Further, since at that time it is hot, the middlemen are afraid to buy as large quantities of fish for re-sale as they do in the cold weather because fish which are not sold within a comparatively short time go bad. This paradox will continue until steps are taken to keep the fish fresh while it is being transported and while it is waiting to be sold. We were also told that less fish is bought for drying during the wet season because it is more difficult to dry at that time. Notwithstanding these limiting factors, we are satisfied that more than twice as much fish is caught in the months January to June as in the months July to December.

First Term of Reference

9: It is clear that fish as a food is much in demand in the Protectorate and that it is preferred in the following order:

- Fresh fish from Lake Nyasa.
- Fresh fish from other sources.
- Dried fish, that is to say, fish dried by smoking.
- Salted fish.

Generally speaking, salted fish is but little in demand and this is partly, we were told, because of certain African traditions regarding its use. It will be seen, however, that imported salted fish has proved acceptable as a free issue to African workers in the Southern Province. The question of improving salting methods is discussed in paragraph 46.

10. Between 1945 and 1956 there has been a great increase in the population. In 1945 there were 1,948 Europeans in the entire Protectorate: there are now 6,700. Coloured persons have increased from 455 to 1,200 and Asians from 2,804 to 8,510. The latest census (1956) covered only non-Africans and Africans in employment, and the figures for Africans in employment in 1945 are not available, but the available figures indicate that there has been an increase in the number of Africans in the Protectorate. There are at present 162,000 Africans in employment. The estimated population of the Protectorate in 1953 was 2,432,600, of whom 2,420,000 were Africans.

11. The demand for fish is seasonable. In Zomba, from January to July sales are good. From mid-August, in that area, sales are not so good. At Fort Johnston, sales fall off from December to March. In Lilongwe, sales are greatest during the tobacco buying season. So far as the tea estates are concerned, there is a large demand from certain estate owners in Cholo for fish from January to May in each year, as these are usually the months during which the tea estates employ extra labour. Again, so far as the African is concerned, sales increase after the end of the month when there is money in hand. It would appear, too, that there is an increase in the general demand for fish, but this must be considered partly in the light of the increasing purchasing power of the people.

12. Although we appreciate that it is purchasing power which affects demand and not simply numbers of people, nevertheless population figures at the main centres may be of some assistance. The present population of Zomba is as follows:

800 Europeans
10 Coloured persons
520 Asians
5,300 Africans in employment.

To this must be added the large number of Africans who are not in employment and who were not, therefore, included in the 1956 census.

13. There are two sellers of Lake Nyasa fresh fish on the Zomba Market. One of these gave it as his opinion that if there were no other fish coming into the market he could sell 300 dozen fish a day at present prices, and that at the end of the month he could sell perhaps more than 300 dozen. The other has stated that in similar circumstances he could, from the 1st to the 10th of each month, sell 200 dozen a day; from the 11th to the 20th, 150 dozen; and from the 21st to the 31st, 100 dozen. As to the rate of sale, where selling begins at five o'clock in the morning 30 to 40 dozen fish have been sold by eight o'clock, and the balance of 60 to 80 dozen have been sold by one or two o'clock in the afternoon. It must not be forgotten that, besides this Lake Nyasa fresh fish which comes from Fort Johnston, there is a considerable trade in Zomba in fish from Lake Chilwa, both fresh and dried. It is estimated that there are 20 persons selling Lake Chilwa fish, and a full basket containing between 100 and 150 fresh fish will be sold in one day, although, when Lake Nyasa fish is sold in the market, sales are not so rapid. One seller of Lake Chilwa fish states that he disposes of four baskets of fresh fish between eleven o'clock in the morning and half-past four in the afternoon.

14. From the evidence it would appear that it takes eight hours to sell 100 dozen fresh Lake Nyasa fish on the Zomba Market. At first sight, these figures would not appear to indicate very keen competition to buy fish at the current prices. More than one consumer, however, gave evidence that fish was sometimes scarce in Zomba. According to Mr. Coombes, the Town Manager, giving evidence in May, Lake Nyasa fish was then obtainable in Zomba about twice a week. Sometimes both sellers of Lake Nyasa fish receive their supplies on the same day, sometimes on different days. There is no regular delivery, but a certain amount of Lake Chilwa fish is usually available.

15. As regards Fort Johnston, we were told that very little fish ever appeared on the Fort Johnston Market. Both African and non-African fishermen sell their fish on the beach to middlemen who market it in places outside of Fort Johnston where they can obtain higher prices. It would appear that the non-fishing population of the district does sometimes go short of fish but that it need not do so if it were prepared to pay economic prices and did not prefer to wait for the sporadic and unreliable supplies from subsistence fishermen who, more or less, give fish to their neighbours once they have got enough for their own domestic needs.

16. So far as the marketing of non-African catches is concerned, we are fortunate in being in possession of figures compiled by Mr. Sanson which show the percentage of commercial non-African catches marketed in various places compiled from observations made over a period of twenty days, that is, from the 20th March to the 8th April, 1956. These figures show that, in the case of one non-African firm, only 27.5 per cent. of their catches arrived at their depot in Blantyre/Limbe, while, as regards the other non-African firm, only 29 per cent. of their catches arrived at their depot for distribution and sale to African retailers, to the Limbe and Blantyre Markets and to Cholo. In each case, over 60 per cent. of the fish taken are disposed of at the Lakeshore and on the way to Blantyre/Limbe. What fish does reach the depots in Blantyre/Limbe is quickly sold. We have been told that as many as 60 African retailers have been observed at one depot at four o'clock in the morning waiting for the fish lorries to arrive. Sales at the markets, however, are not so brisk. According to Mr. Sanson's observations, it took one firm four hours thirty minutes to sell 44 dozen fish and the other five hours forty minutes to sell 60 dozen at Blantyre Market; and at Limbe Market three hours six minutes to sell 102 dozen and four hours to sell 156 dozen respectively.

17. Mr. Roberts, the Deputy Town Clerk of Blantyre/Limbe, told us that the demand for fish in Blantyre is never satisfied, so that even if all the fresh fish reaching the market is in good condition it is still not enough to supply the European demand. There are now living in Blantyre/Limbe 2,500 Europeans, where in 1945 there were 659, and there are now 2,730 Asians as compared with the former figure of 1,098. There was evidence from an Asian witness that Asians depend on fresh or salted fish for a large part of their diet, and that they never tire of eating it. Incidentally, this witness, in spite of much effort, has only been able to obtain fresh fish ten times in a year. There was evidence from Africans in the middle income group that they buy fish frequently; one buys on Tuesdays, Saturdays and Sundays, and another as often as he can get it. We formed the impression that Africans generally buy fish as often as they can afford to do so, preferring fresh fish to dried fish.

18. This is borne out by Mr. Hadlow, the Chairman of the Nyasaland Tea Association, who stated that the vast majority of Africans eat all the fish that they can get. It was apparent from the evidence of African consumer witnesses, and not only in the Zomba and Blantyre/Limbe areas, that an appreciable part of their income was spent upon fish. It was also apparent, however, that they were not getting fish as regularly as they wanted to, and that at certain seasons they would buy more fish at current prices if that fish were available. Mr. Yiannakis states that in the

wet weather an average of 200 to 500 dozen fresh fish is sent to Limbe and Blantyre Markets daily. He also says that during the cold weather catches were on occasion too small to warrant sending a lorry from Fort Johnston to Blantyre/Limbe. It therefore follows that on these occasions there must be a considerable unsatisfied demand in Blantyre/Limbe, in Cholo and in other places which normally depend on this supply.

19. The Cholo/Mlanje area contains a number of large agricultural undertakings and is thickly populated. Mr. Hadlow stated that most employers were anxious to obtain for their labour a ration of animal protein in the form of fish, but say that they are unable to do this with any certainty. He says that the estates are willing to lodge orders for the bulk purchase of fish, so much so that they are willing to pay the extra cost which would be entailed if a cold storage plant were installed up to another 2d or 3d per fish. As to estates in Mlanje, there, too, employers would like to obtain fresh fish for their labour, but it is said to be impracticable in the absence of cold storage and special transport because of the distance from Limbe.

20. From figures supplied to us, not inconsiderable quantities of fresh fish have been supplied to tea estates in the Cholo area. One non-African fishing concern is supplying certain tea estates in the Cholo/Mlanje area with 1,000 dozen fish a week, added to which between 11th February and 3rd June a further total of 1,129 dozen have been supplied to other estates in that area. However, according to Mr. Hadlow, the tea estates' demands are not fully met, and this in spite of the fact that both non-African fishing concerns send supplies of fresh fish to African markets in Cholo every Sunday during part of the year and at irregular intervals during the rest of the year and that African retailers also sell fish in the area. These men, over Mr. Sanson's twenty days' observation period, offered 22 dozen fresh fish for sale on the Cholo Market.

21. While the evidence as regards the demand for fish in the Cholo area is often conflicting, we have come to the conclusion that the demand for fresh fish at current prices in that area, both by the different estates for their labour and by the private purchaser, is not being fully met, though the amount of the short fall varies seasonally. It must be remembered, however, that in assessing the demand in this area an uncertainty is introduced by the fact that only a limited number of estates appear to be prepared to place firm orders and then only if regular supplies are guaranteed. The estates fall into two categories, those which wish to buy fish for re-sale or issue and those which wish merely to arrange for the direct sale of fish in their compounds. Some of this latter category might well become direct purchasers if regular supplies were, in fact, available.

22. It is unfortunately the case that the upland areas of the Northern Province, and some parts of the Central Province away from major centres, are always short of fresh fish, owing to the impossibility of getting it to the market from the main existing fishing areas at a price acceptable to the buyer. Indeed, we were informed that it is five years since any fresh fish, other than very small quantities of imported fish, has been sold in Mzimba. It cannot be said, however, that there is a great demand for fish in Mzimba or Mzuzu, mainly because, with the supply position as it is, there is not much interest. Nor can it be said with any certainty that there is a big potential demand because there are no large concentrations of population and it must not be overlooked that in this area there is an alternative source of animal protein in the form of meat and milk. Any increase in demand would best be met by the development of fisheries in the northern part of the Lake.

23. As regards Lilongwe, there was evidence from Mr. Van Loggerenberg, the Health Inspector, who has, from time to time, acted as Town Manager, that during the season when fresh fish is available it comes in at the rate of about 60 to 70 dozen a day. Mr. Van Loggerenberg says that this amount of fish is usually all sold in six

hours. The European population of Lilongwe is 390, and there are 300 Asians and 4,000 Africans in employment. Taking the whole of the evidence concerning the demand for fresh fish in Lilongwe, coupled with the evidence of supply, we are of the opinion that throughout much of the year there is an unsatisfied demand for fresh fish at present price levels.

24. In the rest of the Central Province upland area, it seems probable that the full demand for fresh fish is not met, even at the tobacco marketing centres, though there is some slight conflict in the evidence. In our opinion, however, if one were to take existing price levels at the major markets and add to them the further cost of distribution to the more remote places, which would, of course, mean a rise in price levels at such places, the demand for fresh fish would be negligible at the present rate of earning of the average villager.

25. At the Lake-shore itself, the people do not seem to be trying very hard to buy fish, except at Kota-Kota, where there is a considerable demand. This is unsupplied, as is the demand at Nkata Bay and, so long as price control continues to be imposed by the Nkata Bay District Council at a sub-economic level, the demand will remain unsatisfied.

26. With regard to dried or smoked fish, the evidence suggests that it is in fairly adequate supply on most of the main Central and Southern Province public markets, except perhaps at some of them during the height of the cold season, in the sense that there usually seems to be a surplus at the end of one day's selling to be carried over to the next. Mr. Sanson estimated that up to five tons a day were available at Blantyre Market and two to three tons a day on the Limbe Market during the period of his observations. He estimated that it took up to three weeks for a seller to dispose of 300 lbs. of dried fish on the Limbe Market. Periods of from one to three weeks for similar quantities were quoted in respect of Blantyre, Lilongwe and Cholo Markets.

27. In the Central Province upland areas away from the main markets dried fish seems to be in fair supply during the tobacco marketing season. Mr. Chipembere says there is a shortage at some of the larger villages but the figure instanced by him as the possible consumption at one of them is not very impressive. In dried fish it represents less than a full load for a small pick-up vehicle every week. As in the case of fresh fish, it seems unlikely that one could distribute fish to these smaller remote places at a cost which would be within the purchasing power of the average consumer, and in any case there seems to be enough margin of supply at the main markets to make sub-distribution from them possible if it is economically practicable.

28. In the Northern Province, dried fish is still in short supply during most of the year. Some 200 to 300 lbs. of fish from the Rukuru River are sold weekly on the Mzimba Market, and fish from Kota-Kota and Fort Johnston reach it occasionally. It was taking some three days to dispose of a consignment of 200 lbs. of Usipa from Kota-Kota at the time of the inquiry (August), but it was thought that dried chambo would sell rather more quickly. It also seems probable that, as in the case of fresh fish, increased and more regular supplies would increase demand.

29. Mr. Hadlow informed us that the tea estates were interested in increased supplies of dried fish from the non-African firms provided it was properly cured, which in the past it has not been. Mr. Yiannakis, though he supplies a few of the estates with small monthly consignments, has, however, not been able to increase his orders,

30. There is a considerable fluctuation, according to the locality, origin and species, in the prices both of fresh and dried fish. Further, fish is not sold by the pound in this country and, therefore, it is difficult to compare fish prices in the different localities otherwise than by accepting an average sized fish of the most

popular species, that is to say, chambo, as the criterion. All the following prices, therefore, relate to chambo. In Zomba the maximum price of Lake Nyasa fish was, at the time the Commission took evidence, 8d per fish, while Lake Chilwa fresh fish was 6d. In Zomba dried fish cost between 3d and 4d. In Blantyre the maximum for fresh fish was 1s to 1s-3d falling, in the season when fish are plentiful, to 10d, though the average price at this latter time was about 4d. The most expensive dried fish was 1s. On the shore of Lake Nyasa in the Fort Johnston area the maximum for fresh fish was 6d, while that for a dried fish in Fort Johnston Market was 4d. According to the evidence, in Cholo the most expensive fresh chambo cost 8d, while the average dried fish cost 5d, with a top price of 1s. The apparent discrepancy between the Blantyre and Cholo maximum prices for fresh fish appears to be due to their being little, if any, fish on the Cholo Market during the season of shortage, and we could obtain no evidence of prices at such times. In Lilongwe itself the most expensive fresh fish cost 1s and dried fish 1s-2d, although, when fish were plentiful, the price fell to 10d, and in Mzimba the top prices were 1s-3d for fresh fish and 1s for dried fish. These prices pertain in markets which are not subject to any control. Price control of doubtful legality is enforced in some Lake-shore areas, the maximum price allowed varying from 1d to 2d per fish.

31. The shortage of which so many consumers complained is usually due to seasonal variation in catches, but, in our opinion, on numerous occasions fish cannot be obtained even when sufficient numbers can be caught to satisfy the demand because, owing to the condition of the roads, the fish cannot be transported, or because fish sellers have no means of keeping fish in a saleable condition for a reasonable length of time. In our view, the demand for fish in prime condition is rarely, if ever, met.

32. We were told that even when fish is dried by smoking, it does not last for more than one and a half to two months. Dried fish, which most Africans eat when they cannot obtain fresh fish, and which indeed some Africans buy as a change from fresh fish, is partly the answer to the difficulties set out in the preceding paragraph. But since the season when fish are short lasts for more than two months, the drying of fish is, on occasion, difficult, and since also the majority of consumers prefer fresh fish, it cannot be the complete answer.

33. There is, of course, a third reason for the periodical shortage of fish, and that is that often fish does not arrive at the market in good condition. Therefore, persons who like their fish to be really fresh reject it, either upon its arrival at the market or after it has been there for a comparatively short time. The evidence suggests, however, that consumers who insist on this high standard constitute only a relatively small proportion of the total.

34. Our first term of reference cannot be answered in precise quantitative terms except in relation to current prices. We are satisfied that there are seasons and occasions when, at the major centres of consumption, the demand for fresh fish at current prices is not met, although there are substantial periods when it is. It follows that an increased total supply of fresh fish over a year would be taken up at average current prices if its delivery in sound condition could be uniformly spread over the year. We feel justified in concluding that the demand at current prices is reasonably satisfied during the months February, March and April. During these months in 1955 the catches of fish totalled approximately 1,500 tons. In the absence of complete information on the trading of each and every producer it can only be assumed that the bulk of this was in fact disposed of economically, though some appears to have been sold at uneconomic rates. This off-take then must be sustained in the remaining quarters of the year if demand is to be satisfied. We therefore conclude that the total internal demand at current prices would be satisfied by some 500 tons being placed on the market each month, making a total of 6,000 tons if

spread fairly evenly over the year. There is also evidence that in the higher income levels and in certain particular markets, for example, the tea industry, the demand for fresh fish would be sustained if prices were to rise by 2d or 3d a chambo. We feel, however, that in the lower income groups such a price increase would result in the buying of either less fish, lower grade fish or fish of types not now in great demand.

35. There is a general wish to consume more fish than is consumed at present, and clearly if prices were reduced sales of fish would increase. We are satisfied, however, that commercial fishing, as operated to-day, would not be profitable if prices were to be reduced below the current level. Indeed, the African commercial fisheries, as at present organised, appear to be making little, if any, profit.

Second Term of Reference

36. Our second term of reference does not require us to comment upon fishing technique or methods, but we are not convinced that the falling off of catches in the cold season need be so great. We understand that efforts are being made to increase the cold season catch and we recommend that these should be intensified.

37. Mr. Snell, on behalf of the Chamber of Commerce, suggested that the possibility of regulating African fishing by law so as to prevent the catching of immature fish should be investigated so that the immature fish should be protected. We agree that the protection of immature fish is generally desirable, but it must be borne in mind that the great majority of these supposedly immature fish are, in actual fact, mature fish of the utaka species, which are at present a very important part of the total Lake potential. Since the only effective method of imposing control is by mesh restriction, and since the universal application of such restrictions would obliterate the valuable Utaka fishery, the practical difficulties of protecting the comparatively few immature Tilapia in the Utaka net catches will be apparent. In actual fact, mesh restrictions have already been imposed on the larger seine nets so as to exercise some control on the catching of immature Tilapia.

38. We received evidence from Mr. Gurney to the effect that rivers are frequently blocked by weirs so as to interfere with spawning fish going up them and young fish coming down. Mr. Gurney contends that if fish were not caught in the rivers in the wet season and were allowed to spawn there, there would be more fish available in the Lake in the cold season. Mr. Howard, a Government Fish Ranger stationed at Nkata Bay, was asked by the Northern Province Association to bring the same matter to our notice. Mr. Howard could not confirm that, in fact, this practice was resulting in the loss of young fish so as to affect the fishing in the Lake itself. We understand that this matter has already received some attention from the Game, Fish and Tsetse Department and that the conclusion was reached that there was no evidence that the practice was having ill-effects. Consideration will show that where there are successive rows of traps fish must, in fact, be passing the barriers despite their apparent impenetrability, otherwise the upper barriers would not catch fish as in fact they do. Secondly, investigation showed that in many cases the traps in the fences were removed when the streams were in spate for fear of their being swept away so that the passage tended to be clear when the runs of fish were at their height. Finally, whatever one may expect from consideration of the practice itself, there is, in fact, no obvious decline in the stocks of those species of fish breeding primarily in rivers. Many fisheries in the world have for long depended on spawning runs, and there is no certainty that facilitating freer spawning would automatically increase the stock.

39. Mr. Gurney also alleged that seine nets are dragged over the spawning areas and that this is likely to stop spawning. With regard to this practice, it is agreed that the use of seine nets, small mesh or otherwise, is likely to interfere with the Tilapia spawning. It should be appreciated, however, that there are many spawning

grounds which, by reason of underwater obstructions, cannot be fished with seine nets. Secondly, broadly speaking, it is only during the breeding season that the African can catch large quantities of Tilapia. Thirdly, the imposition of a close season on African seine nets would prevent the catching not only of Tilapia but also of a large number of other types of fish which there is no reason to protect at this season. This is not true of ring netting, because this type of net catches virtually nothing other than Tilapia. All in all, it seems that at present a close season on African seine nets would have a depressing effect on the industry out of proportion to the end in view, which, as implied in the case of river trapping, would not necessarily be served. Nevertheless, it is clear that the possibility of a short close season on in-shore seining must be kept in view.

40. With regard to those aspects of the fishing industry other than the actual catching of fish, the Chamber of Commerce has suggested that there should be two types of licence issued by the Government, one to fish and one to process and distribute. We feel, however, that there is no point in endeavouring to restrict and control a part of the fish trade about which no substantial commercial interest has been displayed. Fishing concerns in Nyasaland have been obliged to take upon themselves a substantial part of the transportation and distribution of their catches, and it seems to be the opinion locally that this should be expected of them. We notice, however, that Mr. K. Nielsen, of Messrs. Nielsen Bros., seemed to find this theory to be a novel one. He is a man of some experience in the fishing industry, and says that he has never known the supplier also be the distributor for the wholesaler and retailer.

41. At the moment the industry's chief difficulties are caused by irregular deliveries of fish and by fish going bad either while being transported or at the market before there is time for it to be sold. As we see it, refrigeration holds out the best hope of solving these problems technically, by permitting the accumulation and holding of stocks. Whether it provides an economic solution is another matter. While we took the available evidence, this was to some extent contradictory and was not such as would justify a recommendation other than that a technical investigation should be made into the subject. In conducting this, particular attention should be paid to:

- (a) the type of refrigeration required at the landing point;
- (b) whether refrigerated transport is necessary;
- (c) the type of refrigeration required at the consuming centres;
- (d) the problems of dealing both with day to day fluctuation in supplies and seasonal shortages; and
- (e) so far as possible, the economics, including whether refrigerated storage should be operated by private enterprise or as a public utility.

42. As regards non-refrigerated and non-insulated transport, more than one witness has observed that, in his opinion, the throwing of fish in one heap into a vehicle crushes them and hastens the process of decay. We recommend that fresh fish should be carried in rigid containers which would take the weight of the upper layers and reduce crushing. According to the evidence, this method, which is common practice in the United Kingdom, has not been tried here.

43. While we place much importance on refrigeration, we wish also to say that, in our opinion, the roads which are used for transporting the bulk of the Protectorate's fish supply should be placed in such a condition that they may be used by heavy wheeled traffic throughout the year. In nearly every case these roads are important main roads and connect up well-populated areas with important centres, so that the money spent upon them would not be spent only for the benefit of the fishing industry. During Mr. Sanson's twenty days' observation period, which, it will be remembered, extended from the 21st March to the 9th April, he observed that the fish caught by

one non-African concern arrived at the firm's depot at times varying between four o'clock in the morning and half-past ten, while it reached the Blantyre and Limbe Markets at any time between six o'clock in the morning and half-past eleven. While we appreciate that to some extent this may be due to the vehicles discharging fish along the route from Fort Johnston to Limbe, and to the inevitable irregularity in times of landing, we are satisfied that the condition of the roads has a considerably detrimental effect on deliveries.

44. As to the preservation of fish by curing, we were able, through the courtesy of Mr. Yiannakis' representative at Fort Johnston, to observe the method used by Africans to dry fish. These men buy fresh fish from Mr. Yiannakis and cure them by smoking them over a fire. This is done over a shallow pit in the open air. There were fifty or sixty people engaged in doing this at the time of our visit. The trade in dried fish is carried on by Africans who go to the various landing places and who buy and smoke the fish on the Lake-shore. Buyers for this purpose who come to Mr. Yiannakis' fishing yard sometimes take up to three weeks to prepare their consignment of dried fish.

45. The non-African fisheries smoke only a small proportion of their catch. Their attempts to do so in the past have not been particularly successful, possibly because it is not practicable to produce as satisfactory a product when curing in bulk as the African can by individual attention. Mr. Harding, who represented Messrs. Malachias Bros., told us that his firm lost about fifteen tons of dried fish in the month of June last through maggots, and according to Mr. Hadlow the dried fish processed locally which he has been able to obtain has not at present any keeping qualities, although he confirmed that the African would appear to dry his fish rather better than the non-African fishing concerns. One Zomba consumer told us that when he did buy dried fish he ate it right away because he was afraid of maggots.

46. As to salted fish, while it is said that it will not find favour with the Africans, both Mr. Hadlow and Mr. Abbey, the representative of the Ntondwe Tobacco Co., say that the imported dried fish from Holland, which is not only dried but salted, is liked by their labourers, and, although there is evidence which suggests the contrary, we feel that, having regard to the liking for local African-dried fish, there might be a market here for properly salted local fish. As Mr. Nielsen pointed out, salting is a specialist's job, not something that anybody can do, and we feel that the advice of such a specialist should be made available to the industry.

47. We have already dealt with the distribution of the catches of the non-African fishing concerns. That may be erratic, but the African fisherman, unless his fish is bought on the beach by African retailers who distribute it on bicycles, often has no means of distribution at all. Mr. Chipembere advocates that Africans should be helped in finding means of transport for their fish. No doubt in appropriate cases Africans may be able to obtain loans from the African Development and Welfare Fund. Mr. Chipembere has pointed out the value of selling agents along the route of transport so that the vehicle carrying the fish is not held up on its way. We agree with him, and think that non-African concerns also would be well advised to investigate the possibility of employing agents.

48. As to the distribution of dried fish, Mr. Nielsen told us that his firm had considered collecting dried fish from African fishermen by water transport and then to send it out by motor transport for sale. Although some of the villagers thought that their village could produce a ton or more a day, Mr. Nielsen doubted whether there would be a sufficiently regular supply to justify his firm embarking upon this venture. He feels that production would improve if the African fishermen were fitted out with a better type of boat and an increased amount of gill nets.

49. Both Mr. Chipembere and Mr. Dunstan Banda, a teacher at a White Fathers Mission who lives at Nkata Bay, thought that African fishermen should be encouraged not only by loans and instruction but by assisting them to form co-operative societies. Mr. Sanson, however, is of the opinion that, so far as the southern half of the Lake is concerned, the time for forming co-operative societies has not yet arrived. He has himself tried to start co-operative societies, but they have failed for economic reasons and because of the failure of individuals to co-operate, and Mr. Hughes, President of the Lake Nyasa Fisheries Association, who has also personal experience of African fishermen, endorses Mr. Sanson's views. The Commissioner for Co-operative Development considers that a fish co-operative organization in any area where road communication is easily available could do much to improve and systematize existing conditions. But he points out that the lasting success of any co-operative organization depends on the unity and energy of its members, and that it requires great effort and sacrifice in the early days of the organization. Since the scope of any such fishing organization would be so limited by existing conditions that its profits would be small and the return to members disappointing, he doubts whether there would be any chance of success. Fishermen members would have to fish regularly and energetically every day, but we have been told by witness after witness that the majority of African fishermen are purely subsistence workers. Such men would have to sell their fish to the society, at a price less than they might be offered by casual dealers on the beach, in the hope of obtaining increased returns after the fish had been marketed. This again they would find very hard to do. Poor fish returns would mean that the society's transport would have to run with incomplete and therefore uneconomical loads, and the overall returns would suffer accordingly, to the disillusionment of members. We consider that if regular and large enough supplies were made available to make it worth while for Messrs. Nielsen Bros. to carry out their suggestion of collecting dried fish it would be a step in the right direction for the African fishing industry, particularly where there are no access roads. But we consider also that the desirability of forming African co-operative fishing societies should be kept in view.

50. We have already commented upon Mr. Hadlow's evidence that there is no satisfactory delivery of fish to the Cholo/Mlanje tea estates. This is borne out so far as the general public is concerned by Mr. Stephen Masseah, a former head clerk in the District Commissioner's Office, Cholo, who retired in 1953 and now lives about three-quarters of a mile from Cholo Boma. He told us that it was very difficult to obtain fish and that supplies of fresh fish are not adequate, while the African dried fish sellers charge high prices. He is one of those who say that if people could be assured of a regular supply of fish by the installation of a cold storage room they would be prepared to pay a little more. As to Limbe and Blantyre, Mr. Yiannakis told us that "at the moment" (July) his most important trade was to African retailers and to the estates and that he sent very little to Blantyre and Limbe Markets.

51. As to the Northern Province, the main trade is in dried fish sold by African retailers. The Northern Province Association have stated, through Mr. Howard, that the supply of fish from the Lake-shore is very scarce at the moment, particularly in Mzuzu and Mzimba, be it either dried or fresh. Mr. Howard points out that this is because the fishermen are purely subsistence fishermen who do not catch enough to take as far inland as Mzuzu. He is encouraging the expansion of African fisheries at Nkata Bay and has started a model fishery and training scheme for African fishermen and is teaching them to build smoke houses and to improve their boats. This seems to us to be a worthwhile effort. Mr. Dunstan Banda is in favour of Mr. Howard's scheme. Mr. Banda thinks that the best way of distributing fish to other Lake-shore places in the district would be by boat, but we feel that it should be realized that, in the case of fresh fish, this means of transport, unless refrigerated, is limited by the time factor.

52. Mr. Kettle, who has a fishing business at Chipoka, told us that his difficulty was to get fish out of that place. His trade is, therefore, mainly at the beach to African retailers who distribute the fish on bicycles. Mr. Kettle hopes that road communications will improve, in which case his business will make a useful contribution to the trade in supplying Lilongwe and possibly other such places. The prime necessity is a motor road to Salima which will involve bridging the Linthipe River.

53. As regards conditions of sale, we feel that there is much room for improvement in the Blantyre Market. The fish stall has no roof, so that when it is hot the fish deteriorates very quickly. In Limbe, where a rental is charged, conditions are somewhat better.

54. We recommend that all local authorities should consider the erection of properly designed and equipped fresh fish markets.

Third Term of Reference

55. As to whether fish caught locally can economically compete with imported fish, a number of employers, in the absence of satisfactory deliveries of locally caught and dried fish, have purchased smoked and salted fish from Holland. This is packed in wooden cases in waxed paper and arrives in perfect condition. Mr. Hadlow, who is the manager of a large concern, told us that if he could get a sufficient supply of good dried fish and fresh fish locally at a comparable price he would not buy imported Dutch fish. Mr. Chipembere told us that Africans did not like the taste of imported fish and that its price was high. The price may be a deterrent in the case of tinned fish, but both Mr. Abbey and Mr. Hadlow say that Africans are not averse to eating the imported Dutch fish. The theory has been advanced that that was because they were getting it as a free ration, but there is insufficient evidence to reach a conclusion on this point since this product has not been offered for sale direct to Africans on any substantial scale. According to Mr. Hadlow, the price of this imported fish is 1s-½d per pound landed on the estates at Cholo. He points out that the local fresh fish are not treated in any way nor gutted, and the price per fish is 8d. In fact, we know that it is higher in some places. Added to this price, so far as a buyer is concerned, is the fact that, according to Mr. Hadlow's computation, anything up to twenty per cent of the fish is damaged or defective and has to be thrown away. Further, the imported fish keeps for a period of from six to nine months, whereas locally dried fish has, at the best, a life of two months. Mr. Abbey says that the imported fish averages 3½d each in price and that you can eat all of it, whereas in a locally dried fish there is about two and a quarter ounces of bone which cannot be eaten.

56. It would appear that, as the trade is at present conducted, there is not much prospect of reducing the price of locally dried fish to the consumer.

57. In general, African retailers pay Mr. Yiannakis 5d a fish. Having dried the fish themselves they transport it to Lilongwe or to other places by motor lorry. Each dried fish is then sold for up to 1s, and a large basket will contain anything between 600 and 1,000 fish. The value of the sales from such a basket would be roughly about one hundred and sixty per cent. of the cost of the fish, that is to say, about £20, but the true profit is perhaps about £4.

58. Mr. Sanson, also, quoted the example of a man who bought thirty-two dozen fish for £3-4s from African fishermen on the Lake-shore. His transport to Chiradzulu cost him £1 and his own bus fare £1-6s return. He sold the fish at 4d each. His expenses were £5-10s and he received £6-8s. He thought he was making a reasonable profit, forgetting that it took him four to six weeks to sell the fish.

59. If reliance can be placed on regular supplies of the imported Dutch fish at its present price the possibility of it proving to be a serious competitor with the local product cannot be excluded. Mr. Snell told us that he doubted if Dutch fish were put on the market to any great extent whether Africans would buy it right away. He said that they would have to get accustomed to the taste. He stated, however, that some Africans were gradually growing to like it, and there seems to be no reason why more and more of them should not acquire a taste for it. We do not consider that tinned fish and other more expensive imported fish can compete with the local product so far as the bulk of the population is concerned.

Fourth Term of Reference

60. Dr. Clarke, the then Director of Medical Services, impressed upon us the importance of a fish diet for Africans. He told us that dried fish is more nutritive than an equal quantity of meat. As a general rule, Africans in the Protectorate do not get enough protein. Half the protein needed should be obtained from an animal source. Half a pound of fresh fish or a quarter of a pound of dried fish a day would give a good protein intake. There is a greater protein deficiency in some places than in others.

61. We agree with the submissions that the exporting of fish to the other Federal territories or elsewhere should not be allowed until the internal demand at current prices is satisfied. We must, however, take into account the fact that this demand and the practicability of satisfying it at all seasons must be assessed from time to time and that, having regard to the potential for an expanding fishing industry in Nyasaland which will involve the investment of capital both African and non-African, the export of fish should be permitted only after that demand has been satisfied, the principle being that as much fish should be retained within the Protectorate as can be marketed for a reasonable profit. In our view, this conclusion necessitates the imposition of revisable quotas of fish which must be disposed of locally before export can be permitted. We are aware that there are considerable practical difficulties in operating such a system, but, in our opinion, this is the only solution which will satisfy the internal demand and provide the necessary stimulus to the industry. Our hope is that the expedients which we have suggested such as refrigeration will increase the regularity of a satisfied demand in the country and the monthly quotas for disposal locally would have to be assessed on this basis.

Fifth Term of Reference

62. Finally, we do not think that price control in respect of fish would be either practicable or desirable. On the evidence, the industry as a whole does not make unreasonable profits. Indeed, in the case of some African fishermen there is a considerable loss if a reasonable return for their own work is included in the cost. Mr. Sanson, who has gone into the matter, has formed the opinion that any of them who has invested any appreciable sum of money in his business must receive at least 5d a *chambo* on the Lake-shore if he is to make any profit at all. Mr. Sanson has gone so far as to say that he has not found any African fisherman making a profit yet, and that they all operate at a loss, and he doubts if even at 5d a fish they would make a ten per cent. profit. Mr. Sanson thinks that any profit is going into the middleman's pocket, but from the examples which we have been given even the middleman makes no substantial profit.

63. We summarize our conclusions as follows:

- (a) That the potential sustained maximum fish production of the Protectorate is about 17,500 tons. (Paragraph 4.)
- (b) That in 1955 the total catch was 4,222 tons. (Paragraph 6.)
- (c) That expansion of the fishing industry can be expected. (Paragraph 7.)

(d) That there are seasons and occasions when, at the major centres of consumption, the demand for fresh fish at current prices is not met, although there are substantial periods when it is. (Paragraph 34.)

(e) That an increased total supply of fresh fish over a year would be taken up at average current prices if its delivery in sound condition could be uniformly spread over the year. (Paragraph 34.)

(f) That the total internal demand at current prices would at present be satisfied by 6,000 tons of fish a year, spread evenly throughout the year, being placed on the market. (Paragraph 34.)

(g) That in the higher income levels and in certain particular markets the demand for fresh fish in good condition would be sustained if prices were to rise by 2d or 3d a *chambo* but that in the lower income groups such a price increase would result in the buying of either less fish, lower grade fish or fish of types not now in great demand. (Paragraph 34.)

(h) That while, if prices were reduced, sales of fish would increase, commercial fishing, as operated today, would not be profitable. (Paragraph 35.)

(i) That no advantage is to be gained by the separate licensing of fishing and processing and distribution. (Paragraph 40.)

(j) That the suggestion of Messrs. Nielsen Bros. (Pvt.) Ltd. of buying dried fish from African fishermen for resale would be of benefit in areas inaccessible by road. (Paragraph 49.)

(k) That the formation of African co-operative fishing societies should be kept in view. (Paragraph 49.)

(l) That low priced imported salted fish may develop, with changing taste, into a serious competitor with local dried fish. (Paragraph 59.)

(m) That tinned fish and other more expensive imported fish can not compete with locally dried fish so far as the bulk of the population is concerned. (Paragraph 59.)

(n) That price control of fish would be neither practicable nor desirable. (Paragraph 62.)

64. We make the following recommendations:

(a) That the possibility of refrigeration to resolve the difficulties caused by irregular deliveries of fish and by fish going bad while it is being transported and at the market should be technically investigated. (Paragraph 41.)

(b) That fresh fish should be carried in rigid containers which would take the weight of the upper layers. (Paragraph 42.)

(c) That the roads which are used for carrying the bulk of the Protectorate's fish supply should be made up so as to carry heavy wheeled traffic through the year. (Paragraph 43.)

(d) That the advice of a specialist in drying and salting fish should be made available to the fishing industry. (Paragraph 46.)

(e) That the fishing concerns should investigate the possibility of employing selling agents along the transport routes from the landing grounds to the main centres. (Paragraph 47.)

(f) That the expansion of African fisheries at Nkata Bay by the proposed model fishery and training scheme should be encouraged. (Paragraph 51.)

(g) That a motor road from Chipoka to Salima should be constructed. (Paragraph 52.)

(h) That all local authorities should consider the erection of properly designed and equipped fresh fish markets. (Paragraph 54.)

(i) That a quota of fish for consumption in the Protectorate should be imposed and revised from time to time; and that only when that quota has been exceeded should export be permitted.

Appendices

65. We have attached Appendices showing the places where and the dates upon which we sat; the names of those persons who gave oral evidence before us; and the names of those who made written submissions to us.

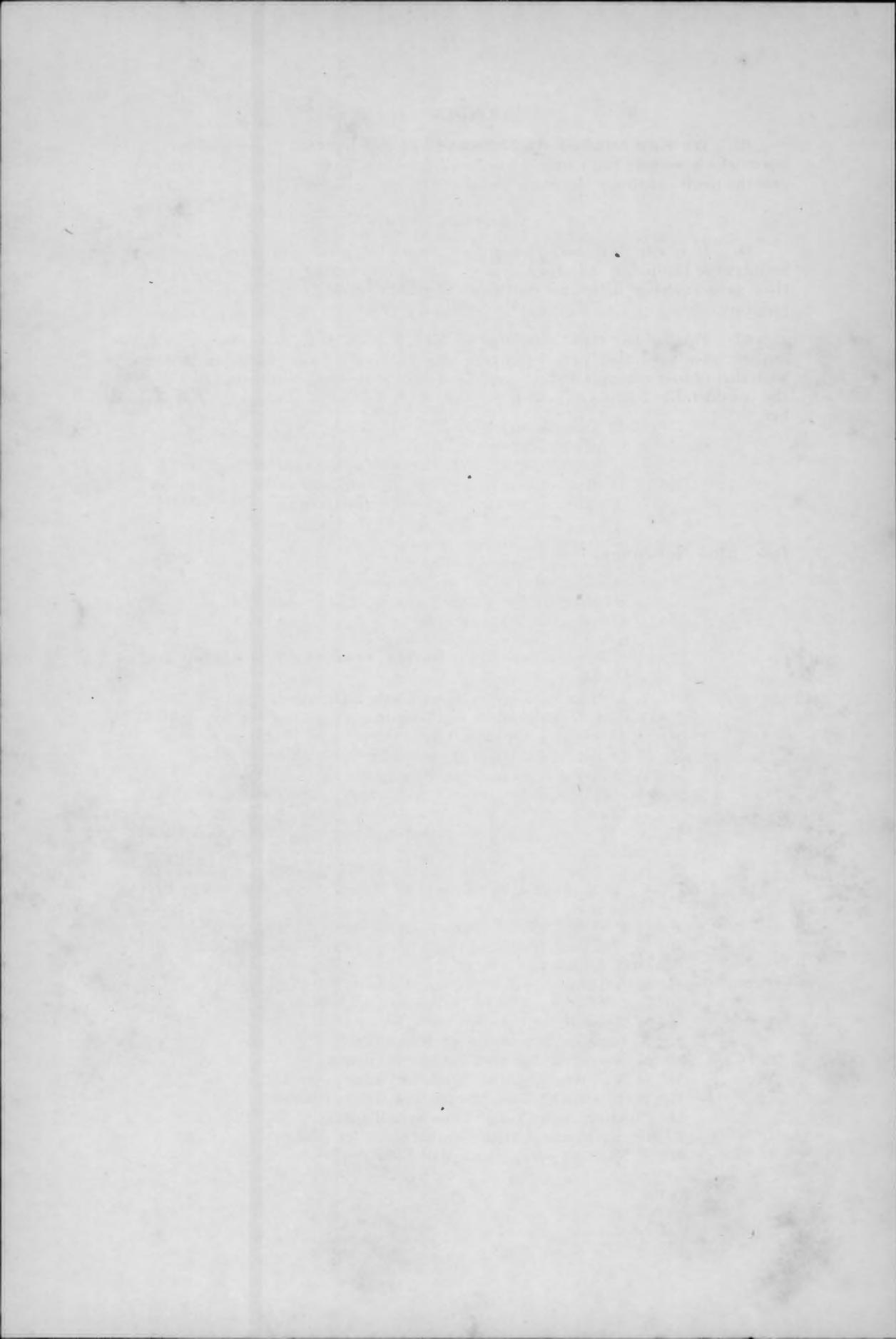
Acknowledgments

66. It is our duty and pleasure to acknowledge the assistance given us by members of the public, all of whom were most co-operative in the manner in which they gave evidence before us and many of whom travelled long distances for this purpose.

67. Finally, our thanks are due to Miss P. B. Clewes, who, throughout our inquiry, combined the normal function of a Secretary most efficiently performed with that of tour manager and who, at the same time, performed the task of recording the considerable volume of evidence which we heard. We are greatly indebted to her.

J. BASIL HOBSON	<i>Chairman</i>
J. H. INGHAM	} <i>Members</i>
F. G. COLLINS	
N. D. KWENJE	
H. J. H. BORLEY	

Date: 22nd NOVEMBER, 1956



APPENDIX I

Places where Sittings Held and Dates

Zomba	..	..	..	17th May, 1956
Fort Johnston	..	..	..	8th and 9th June, 1956
Blantyre	..	..	..	17th to 19th July, 1956
Lilongwe	..	..	..	21st and 22nd August, 1956

APPENDIX II

Persons who gave Oral Evidence

- ZOMBA:** The Honourable H. P. Coombes, M.B.E., M.L.C., Zomba Town Manager.
Dr. J. H. C. Clarke, Director of Medical Services.
John Grey, fisherman at Lake Chilwa.
Sayenda, fisherman at Lake Chilwa.
Mr. A. G. Salemahomed, fish trader, Zomba Market.
Mr. J. E. Patel, fish trader, Zomba Market.
Mr. L. G. Nkhwafi, fish trader, Zomba Market.
Mr. J. J. Kajawo, fish trader, Zomba Market.
Mr. A. L. Mwenifumba, clerk, Public Works Department, Zomba.
Mr. G. B. Magwero, clerk, District Commissioner's Office, Zomba.
Mr. D. Fletcher, messenger, District Commissioner's Office, Zomba.
- FORT JOHNSTON:** The Honourable H. B. Chipembere, M.L.C.
Mr. A. D. Sanson, Fisheries Officer.
Mr. F. Sinclair, fisherman, Lake Nyasa.
Mr. G. Khan, fisherman, Lake Nyasa and Lake Malombe.
Mr. A. Charles, building contractor.
Mr. C. Gwedela, fisherman, Lake Nyasa.
Mr. R. Jana, head clerk, District Commissioner's Office, Fort Johnston.
- BLANTYRE:** Mr. V. L. Roberts, Deputy Town Clerk, Blantyre/Limbe.
Mr. G. G. S. J. Hadlow, C.B.E., Chairman, Nyasaland Tea Association.
Mr. D. L. Ferreira, director, Limbe Garage and Transport Co.
Dr. E. B. Smith, Principal Medical Officer, Southern Province.
Mr. W. Mahomed, shopkeeper, Blantyre.
Mr. W. R. Riddoch, director, secretary, London and Blantyre Co. Ltd.
Mr. C. E. Snell, O.B.E., Nyasaland Chamber of Commerce and Industry.
Mr. N. C. Yiannakis, Messrs. Yiannakis Bros., Limbe.
Mr. C. C. Yiannakis, of the firm of Messrs. Chris. Yiannakis, Fort Johnston.
Mr. E. L. Gregg, manufacturer's agent, Blantyre.
Mr. K. Nielsen, Messrs. Nielsen Bros. (Pvt.) Ltd., Salisbury and Fort Johnston.
Mr. L. A. Gurney, crocodile hunter, Blantyre.
Mr. G. C. Harding, Messrs. Malachias Bros., Blantyre.
Mr. S. Maseah, retired head clerk, Cholo.
Mr. B. Kachulu, business man, Konjeni.
Mr. N. Nachuma, fish trader, Chaoni Village.
Mr. R. S. Abbey, director, Ntondwe Tobacco Co. Ltd.
Mr. H. B. Dallah, clerk, Income Tax Office, Blantyre.
Mr. Chisanu, clerk, Native Treasury, Blantyre.
Lester, watchman, Chiefs' Council Chamber, Blantyre.
Mr. S. Nasiyiya, clerk, Council of Blantyre Chiefs.

LILONGWE: Mr. D. J. Bradfield, Senior Agricultural Supervisor, Mzimba.
 Mr. P. S. Masanche, fisherman, Kota-Kota.
 Mr. W. W. S. S. T. Van Loggerenberg, Health Inspector, Lilongwe.
 Mr. M. Malilo, fish trader, Lilongwe Market.
 Mr. Mwenyebabu, fisherman, Tapa-Tapa Village.
 V. H. Denhan Kachala, fisherman, Chief Kanyenda's area.
 Mr. L. T. Kettle, fisherman, Chipoka.
 Mr. A. J. M. Banda, canteen owner, Lilongwe.
 Mr. B. R. D. Barron, manager, Mbabzi Estate, Lilongwe.
 Mr. S. M. B. Ndelemani, head messenger, District Commissioner's Office, Lilongwe.
 Mr. L. Mponda, office boy, District Commissioner's Office, Lilongwe.
 Mr. K. T. Howard, Fish Ranger, Nkata Bay.
 Mr. D. Banda, teacher, Nkata Bay.
 Fenela, s/o Suweida Mbaiko, fisherman, Maganga's.
 Kunkhongo, village headman, Salima.

APPENDIX III

Persons who made Written Submissions

Mr. T. E. Hughes, President, Lake Nyasa Fisheries Association, Fort Johnston.
 Messrs. Nielsen Bros. (Pvt.) Ltd., Salisbury.
 The Commissioner for Co-operative Development, Zomba.
 The Honourable Mr. J. R. N. Chinyama, M.L.C.
 Messrs. Wilson & Morgan, on behalf of Mr. N. C. Yiannakis.
 The Honourable Mr. H. B. Chipembere, M.L.C.
 The Honourable Mr. M. W. K. Chiume, M.L.C.
 Nyasaland Chamber of Commerce and Industry.
 Mr. J. B. T. M. Partridge, Mzimba.

