

THE FISHERIES DEVELOPMENT CORPORATION
AND ITS INFLUENCE ON THE
SOUTH AFRICAN FISHING INDUSTRY

by

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A body frequently mentioned in this thesis is the Sea Fisheries Branch. This came into existence in 1929, when it was called the Division of Fisheries. In 1961 its name was changed to the Division of Sea Fisheries; in 1972 its name was again changed to Sea Fisheries Branch. In mentioning it, I have used the name by which it was known at the time referred to. Whichever name is used it is the same body.

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I : BACKGROUND AND APPROACH

One of the live economic debates that is going on in the world today is the debate over the relative advantages of the market economy and the planned economy. It is not a debate that is confined to the experts. It is discussed by ordinary people, argued about in factory canteens, written about in newspapers. In less sophisticated speech it often becomes "the struggle between capitalism and communism," and is seen in simple terms of black and white. (And by some people in South Africa, in simple terms of Black and White!)

But even the most cursory examination of some of the existing economic systems in the world today shows that the comparison between "planned" and "market" economies is not a simple one. There are many criteria by which economic systems may be judged; and individuals differ in the weight they attach to different criteria. Also - although perhaps this is only a variation of the same thought - different systems perform at different levels in different areas. Thus it is claimed for the market system that it is good at motivating workers and entrepreneurs; that it encourages initiative; that it provides a self-adjusting mechanism by which the various factors of production are allocated in a way that produces the greatest amount of satisfaction for the greatest number of people; and so on.

On the other hand, there are areas in which the market system clearly does not work so well. For instance: education has always been a problem for the market system, for the reason that the people who are to be educated normally cannot afford to pay for their education, although the benefits to society of their education far outweigh the costs involved. The medieval solution to this problem - at least as regards technical training - was apprenticeship; the modern solution is government subsidies to schools and universities - though neither apprenticeship, a form of temporary slavery, nor government subsidy can be considered part of a true market system.

Another area in which free enterprise does not seem to function well is that of communications: roads and postal services are

normally publicly owned; often, also telephone systems and railways (which even when not publicly owned, may enjoy publicly conferred rights of way-leave). When the time-span in which likely profits will become available is too long to attract private capital, the state may have to take over as an entrepreneur. When, for some reason, private enterprise is thought to be unable to supply goods that are regarded as essentials at prices that consumers are able to pay, the state may step in - hence sub-economic subsidised housing schemes and rent control. And in general, whenever an element of compulsion is involved - as, for instance, in the provision of municipal services - some form of planning or social control is often preferred to allowing free play to market forces.

For quite different reasons, the fishing industry may be another area in which market forces do not lead to the most economic use of resources. The unusual aspect of fishing is in the nature of the resource that provides its raw material - fish. In the first place, sea fish, although a scarce resource of undoubted economic value, are by their nature incapable of being publicly or privately owned; they are a "common property resource". In the second place, fish are a changing, incalculable resource; difficult to count, difficult to make the subject of rational predictions, and difficult to control.

In the third place, the quantities of the product (fish) that can be obtained from any particular area over succeeding time periods are subject to unusual constraints. These constraints stem from the fact that fish are both the product of the fishing industry and the producing agent. Although the seas are free to all, there is an economic limit to the area that can be fished from any particular base. Within this area, there is a physical limit to the number of fish that can be caught. But there is another limit, lower than the physical limit, beyond which larger catches in a given period will, or may, lead to lower - and progressively lower - catches in succeeding periods.

Although none of these three attributes - except possibly the last - is a unique one, the combination of them make fish an

unusual economic resource. There are, it is true, other resources that resemble them in certain aspects. Oil is one. Although oil when underground can be owned in the sense that the owner of the ground owns the oil that lies under it, nevertheless the owner can never be sure that his neighbour is not pumping out "his" oil. This situation led to economically damaging competition during the early development of oil wells, and has since led to the formation of large companies and combines to a degree which certainly hampers, if it does not entirely do away with, the free interplay of market forces.¹

Wild animals may have similar characteristics, as an economic resource. The fur-bearing animals of the northern Canadian forests, for instance, might well have been destroyed had they not been exploited under a monopolistic Royal Charter. In fact, they have been preserved by "the largest animal conservation project ever undertaken by private interests."²

The "common grazing" of the medieval manor provides another example of a resource that, in the then existing state of society, could not be successfully exploited under a market system. Unrestricted use of this common pasturage might have led to its destruction - at least temporarily - as a source of food. Hence complicated regulations grew up as to the times, places, and numbers of animals that could use the manorial pasturage.³ The nature and importance of these regulations have been explained by Lipson:⁴

The common pasture land, he writes "was not partitioned into strips, and there was no ownership in severalty either permanent or temporary. But the principle of equality was at work here, as in other directions. Just as every villager suffered restrictions where his land was used for grain or hay, so he was restrained from pasturing upon the commons an unlimited number of cattle. The use of the commons was in technical terms 'stinted,' and rights of common were carefully apportioned to the holdings in the open fields.

"The regulations, by which the management of the commons was carried on, affected every individual alike, and even the lord of the manor was not exempted from their operation. In legal theory he was no

less the owner of the waste than of the arable and meadow, but he usually submitted to communal control and recognised the binding force of immemorial custom. If in contempt of local usage he pastured on the waste a greater quantity of cattle than was his due, his action did not pass unchallenged and cases of litigation were not unknown."

As the manor developed, not only the common grazing, but the woodlands around it became subject to regulation. The process has been described by Vinogradoff,⁵ writing of the English manors: "The waste included an enormous quantity of land....the delimitation of this space was so rough and approximate that the Domesday commissioners were satisfied in jotting down the size in rectangles of so many acres or furlongs or leagues in length, and we may well think that where there was no natural boundary, such as a river or cultivated land, the boundaries between these waste spaces were difficult to define. Indeed, in districts with wide stretches of soil of this character there was for a long time no necessity and no wish to determine the respective boundaries....The treatment of wood, moor, and pasture becomes more interesting when their quantity gets to be restricted, and floating usages have to be 'stinted' according to conceptions of proportionate rights. A common entry in Domesday is that in a particular place there is sufficient pasture for the cattle; sometimes, but more rarely, the mention of sufficient wood also occurs. In these cases the quantity of waste land was not even practically unlimited, and the modes of appropriation of its benefits and proceeds had to be devised and kept up for the sake of the community to avoid destruction and to prevent unfair advantage being taken by some of the participants."

Vinogradoff's description suggests an analogy with fishing. When the Domesday survey was made, the extent of waste land, relative to population, was so great that it was not considered necessary to make more than a rough estimate of its extent. Later, as population grew and land became relatively scarcer, regulations had to be devised to prevent the destruction of the economic resources of the waste land. It seems that a similar process is at work in fisheries. In the early stages of development, when the market for fish is small

and techniques of fishing primitive, no need for fishery regulation is seen. Later, as the market grows and as fishing techniques improve, more fish are caught, fears are entertained about the over-exploitation or destruction of the fishery resource, and regulation comes to be regarded as necessary or desirable.

These examples all suggest that there are certain resources which need some form of control other than that given by the market system. What these resources have in common is that, for one reason or another, ~~unrestricted exploitation~~ ^{unrestricted exploitation} leads to economic results which are considered undesirable. Some different means of control is required to prevent these resources being squandered - or, alternatively, inadequately exploited - because of lack of means of ensuring that the investor responsible can be sure of himself enjoying the returns from his investment. Fish in the ocean can hardly be owned at all, either publicly or privately. (Claims to ownership or control of parts of the ocean do, perhaps, to a certain extent, give a form of ownership of the fish in that part of the ocean. But there can be no certainty that the fish will not move to another part of the ocean). The history of the fishing industry, too, suggests that uncontrolled competition will not lead to the most economic use of available resources.

The position has been well put by J.A. Crutchfield:⁶ "Economic conditions in the fisheries, viewed as an industry, tend to become unsatisfactory over periods of time - not in haphazard fashion, but systematically. The only period in which we find evidence of satisfactory earnings accruing to the factors of production throughout a fishing industry are during the early phases of expansion against a virgin population. As the fishery reaches a point of stabilized yield, it seems invariably to fall into a condition even more disturbing than the chronic difficulty that affects agriculture. In almost any fishery in which prices of the end product are high in relation to the costs of producing it, the industry is capable of destroying itself, if not biologically, then certainly in an economic sense; and unless restricted, it will do precisely that."

(It is worth noting that Crutchfield specifically mentions that economic troubles occur in fisheries "in which prices of the end product are high in relation to the costs of producing it." This is a revealing point which will be taken up in the later analysis. On the face of it, it is surprising that a condition so apparently favourable to profitable exploitation should in fact lead to economic difficulties.)

It might be of interest to give some first-hand evidence of how the decline occurs and how it is viewed by the fishermen themselves. Many examples could be given^{*}: I have chosen some of the evidence given by fishermen about the changes in the North Sea fisheries in the second half of the 19th century.⁸ Here is some of the evidence given by Alfred Ansell of Hull, to the British Royal Commission that investigated fisheries in 1883:

"I have been a smack-owner and fish merchant 26 years. I have made a careful examination of my books for the past few years, and the results show a great diminution in the catch of soles and flatfish. There has been no perceptible diminution in the supply of round fish. The smacks have, however, during the months of December, January, and February, to go much longer distances to catch them."

Mr Ansell was questioned by the Chairman:

"Your vessels fish farther offshore than they formerly did? - Yes.

"What is the reason for that? - The fish falling off on the old grounds, they have been induced to seek newer ones.

"Can you tell us when the first falling off was observed? - It has been gradual."

*Crutchfield in another article mentions the Pacific halibut fishery, the Puget Sound salmon fishery, the British Columbia fisheries, the North American lobster fishery, and the ground fish operations off New England as fisheries whose economic performance has been found to be "dismal".⁷ The decline of the Californian sardine fishery in the 1950's is another example.

Another smack-owner, John Sims, questioned by the Chairman, gave the following evidence:

"Although the total quantity of fish brought into the port has not diminished, you are quite certain that the flatfish have diminished? - I am quite certain of that.

"But as to the round fish, the total quantity brought in is much the same as it used to be? - Much the same as it used to be.

"But there are more vessels employed? - More vessels employed.

"Consequently each vessel does not catch so much? - Consequently each vessel does not catch so much. The vessels are larger, and in some instances they are three times as large, on the average, as they were forty years ago.

"Then one may say that the round fish are not so plentiful as they used to be, though they have not fallen off so much as the flatfish? - No; the trawl is one-third larger.

"Then you may fairly say that the round fish are not so plentiful as they used to be? - Not according to each vessels catch."

Joseph Verrill, examined by the Chairman, said:

"How long have you been fishing? - I have been fishing all my lifetime till these last ten years.

"How did you give over fishing? - Because I made a good thing out of fishing in those days.

"You made your fortune? - Yes: I made what will keep me, but there is no chance of any fisherman getting enough to do that now.

"Why is that? - Because there is not so much fish to catch. There are none on the ground they used to be on when I first went. If I had had in my time the great lines they are shooting now, I should have laden a big boat at once If these men worked the same fishing gear as I worked when I was a young man, they would not see anything alive. They have to have everything as fine again; little hooks, and the snoods as small again, and the nets are like the hair of your head."

On the basis of this - and of course much other - evidence, the Commissioners reported: "It is alleged that although there may be an increase in the total amount of fish brought to the market,

the takes of each boat are smaller, in spite of the improved fishing gear, and that fish are really scarcer than formerly. To decide what amount of truth there is in this view of the case is, in the present state of our knowledge, impossible."

Ten years later, a select committee of the British House of Commons investigated the fisheries. One of the witnesses examined was Mr C.L. Alward:

"Can you tell me whether the average take has increased or decreased, and can you compare it with what is the price at the present time? - Yes, I have the figures for 1892. The prime fish has gone down to 30 cwt.

"In place of what? - In place of 80 cwt. The plaice has gone down from 550 cwt to about 180 cwt, and the haddocks have gone down from 1,000 cwt to about 800 cwt. But bear in mind the great fact that the increase of length of beam, catching power, and better appliances have still to be taken into account, even with this enormous decrease.

"So that you have arrived, have you, at the conclusion that the annual catch per vessel since 1875 has decreased and is decreasing? - Yes.

"Am I putting it correctly to you if I say that while the total catch of fish has remained much the same, the size of the individual fish has very greatly decreased in recent years? - The total aggregate catch in weight, do you mean?

"Yes? - Yes, that is so.

"But the size, that is to say the quality, has greatly diminished, has it not? - In the case of flatfish, yes."*

The 1893 committee reported: "... but when we turn to the great fishing grounds of the North Sea, if your Committee is to rely on the evidence which has been laid before them by all persons interested in the fisheries, whether trawlers or linesmen, whether smack-owners or fishermen, whether scientific experts or statisticians,

* In this exchange, there seems to be some doubt as to whether the witness understood all the questions correctly; but the general drift of his evidence is clear enough.

there seems to be no doubt that a considerable diminution has occurred amongst the more valuable classes of flatfish, especially among soles and plaice. It is true that there will not be found a great falling off in the bulk of these fishes landed on the east coast. But the appliances for catching them have of recent years been greatly increased in size and efficiency, and the fishing grounds have been largely extended in area, trawlers going as far as the coast of Iceland to the north, and to the Portuguese coast to the south. The great falling off too in the size of the flatfish caught on the older grounds of the North Sea is also a matter of universal observation."

The main points that seem to emerge from this evidence are: firstly, the total quantity of fish brought to British ports from the North Sea does not seem to have declined greatly over the period studied; secondly, the catches made by individual boats did decline greatly; thirdly, this decline took place in spite of the fact that the fishing boats had become larger and their equipment more "efficient";* and fourthly, that the average size of the individual fish caught was declining. The effort needed to catch a given quantity of fish was greater than it had been before; in modern terms, the "catch per unit of effort" was falling, though it is impossible to be certain, from the evidence given, whether this decline was due to the fact that **there were fewer, or smaller, fish to be caught**, or whether it was due to the fact that more boats were looking for the same quantity of fish. In short, the development of the fishery had led to increased costs without increased production. This is typical, and is an example of what Crutchfield meant by economic conditions in fisheries becoming unsatisfactory over time. The North Sea fishery had not, however, reached a possible further stage, in which increased effort leads

* The word "efficient" is here put into quotation marks because one might expect that efficient equipment would catch more fish, or catch fish more cheaply, than inefficient equipment. In one sense, the efficient equipment did this; given a fixed fish population to start with, efficient equipment would catch more than less efficient equipment. But in another sense the more efficient equipment did not lead to bigger catches or lower costs; or so it would seem from the evidence here quoted. The purpose of the quotation marks, which will not be used again for this particular purpose, is to draw attention to this peculiarity of the word "efficient" when applied to fishing equipment.

not merely to a decline in catch per unit of effort, but to a decline in the total catch. There did appear to be a decline in the total of some of the highest priced fish; and it is precisely these fish, one would suppose, which would be subject to the most intense fishing.

Why is it that fisheries tend to decline in this way? To answer this question it will be necessary to consider: first, the nature of the fishery resource, looked at simply from the biological point of view; secondly, the possible effects on this resource of attempts by fishermen to exploit it; and thirdly, why it is that fishermen exploit the fish resource in the way they do. This third question will amount to an examination of the economic theory of fishing; and when it has been examined we may be closer to defining some sort of economic goal towards which a fishery might be directed, and also some means by which the fishery might be urged towards that goal.

First, then, the nature of the fishery resource: life in the sea, like life on land, is based on the process of photosynthesis - that process by which plants, and some bacteria, convert light energy into chemical energy. On land, photosynthesis is typically carried on in green plants; and the chemical energy formed in this pasturage supports various forms of animal life. In the sea, photosynthesis is carried on in phytoplankton, minute plants, which, floating in the sea, convert nutrient salts into living matter. The phytoplankton is not spread equally through all the oceans. Nutrient salts - those of carbon, nitrogen and phosphorous are the most important - tend to sink to the bottom of the oceans, where as a source of food they are lost. At certain places on the sea's surface, cold currents from the ocean bed carry these salts to the surface - or, to be more accurate, into the euphotic zone, the upper strata of the oceans which are reached by sunlight and in which, therefore, photosynthesis can take place. In such regions, when conditions are favourable, plankton can grow very rapidly indeed; perhaps at the rate of 200 or 300 per cent in a day.⁹ But phytoplankton has a short life; it can grow rapidly; it can disappear rapidly; the basis on which all sea life rests is itself an unstable, changing entity.

Wherever phytoplankton is found, zooplankton - microscopic animals that feed on phytoplankton - are also found. The plankton is eaten by fish, which are themselves eaten by other fish, and so life in the sea depends on a "food chain" which itself depends upon the plankton pasturage. However, the term "food chain" suggests a degree of simplicity which is misleading. In fact, plankton is not only eaten by small fish; some of the largest eat it too. Plankton is not the only basic "pasturage": seaweeds of various sorts are also a source of food, though a less important one. There is a great variety of life in the sea: in South African waters alone there are some 1,500 types of phytoplankton, some 700 ~~types~~ of zooplankton, 1,000 types of seaweed, 1,300 types of fish, 30 types of marine mammals, and 20 types of sea bird. These are all linked together in a complicated ecological web; some eat each other, some compete for the same food, or for living space, or for breeding grounds; a disturbance in one part of the ecological web may have widespread results. The whole forms a complex, tangled system of relationships, in which many species exist in a delicate ecological balance, where changes in the environment may produce large and sudden changes in the numbers or location of any particular species. Fish, like the plankton on which they depend, are unstable, shifting, unpredictable.

One aspect of this instability of fish populations is the delicate ecological balance, which may, if it is altered, decimate or sharply reduce any particular population. A second aspect is the enormous reproductive powers of fish. In some species, the adult female may lay millions of eggs at one spawn. The herrings are reckoned small spawners - the female lays a mere 100,000 eggs at a time. Populations of creatures that breed at this rate may be decimated, but they can clearly grow rapidly too.

How far are fish populations affected by the efforts of fishermen? There is still a degree of doubt about this. The eminent naturalist T.H. Huxley, examined this question in the 1880's and came to the conclusion that fishing had no effect on the supply of fish: "I believe, then, that the cod fishery, the herring fishery, the pilchard fishery, the mackerel fishery, and probably all the great

sea fisheries, are inexhaustible: that is to say, nothing we do seriously affects the supply of fish. And any attempt to regulate these fisheries seems consequently, from the nature of the case, to be useless."¹⁰

Huxley was probably right for the time at which he was writing. But steam trawling, then in its infancy, has enormously increased man's power to catch fish, and hence to affect fish populations. And apart from the fish that they catch, the heavy trawl nets, dragged across or just above the sea-bed, may damage or disturb the creatures living there, and thus upset the ecological balance on which marine life depends. Since Huxley's day there has been abundant evidence that fishing does affect fish populations. There is perhaps not yet absolutely conclusive evidence that fishing can so far reduce fish populations as to destroy fisheries economically; a shadow of doubt still remains; but most people who have studied fisheries now accept that fishing can seriously reduce fish populations. The experience of the Icelandic fishery in the first third of this century may be taken as an example of the type of evidence that has led most people to accept this:

The Icelandic grounds have for long been prolific fishing areas, especially for haddock, plaice, halibut, and cod. Steam trawling started in these grounds in the early 1890's; and from that time on the efforts devoted to these grounds increased. In the years between the wars, British trawlers dominated the fishery; and between the mid-twenties and the mid-thirties the number of hours fishing by British trawlers almost doubled. When it is remembered that the size of the trawlers grew at the same time, and also that more efficient fishing equipment was introduced,* it is clear that the fish were subjected to considerably increased exploitation. The results of this increased exploitation, on the four main species were as follows:¹¹

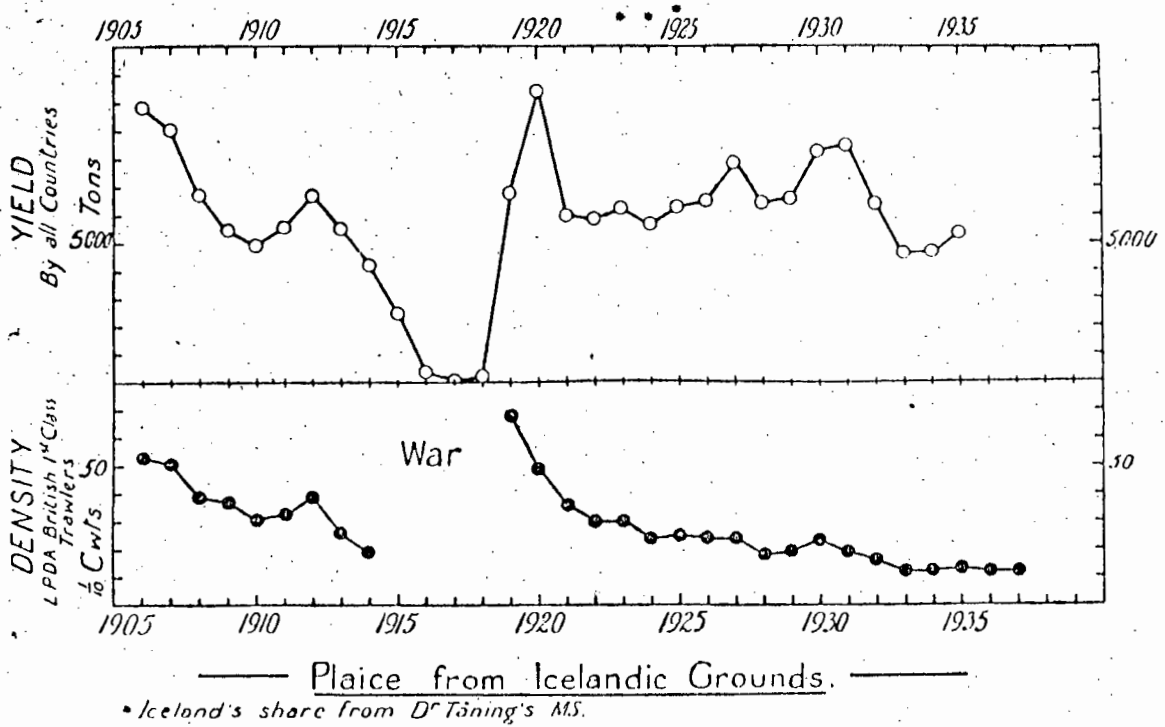
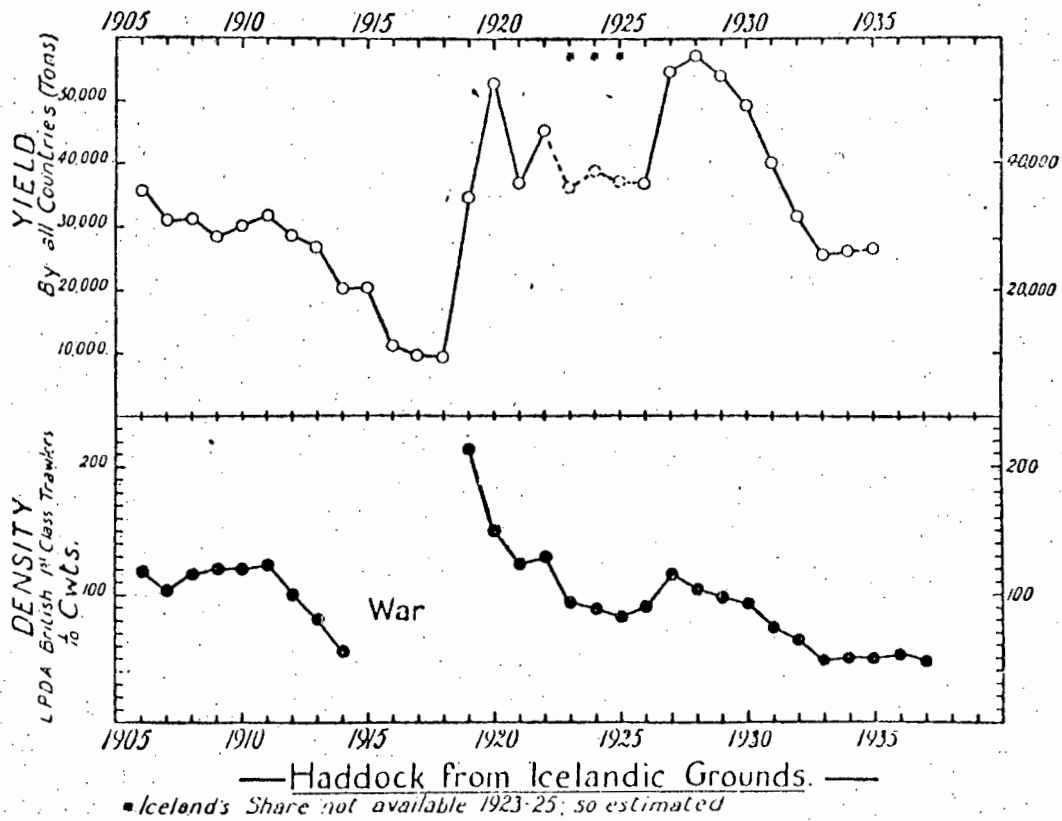
* In particular, the Vigneron-Dahl trawl, introduced in 1923. This was a modification of the otter trawl by which the boards which held the net open gave the net a wider sweep, herding more fish into the net.

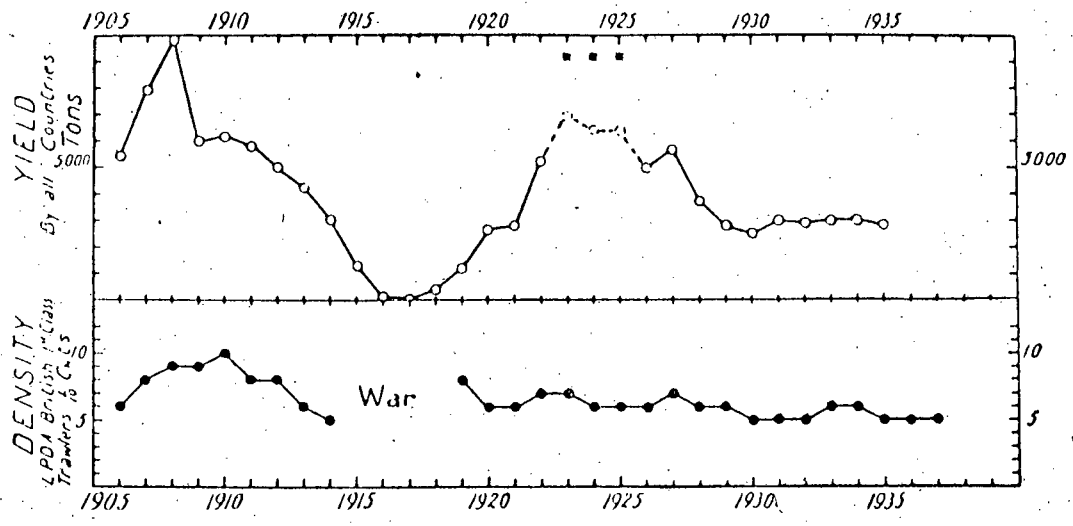
Haddock: from 1905 to 1914 there was a definite and fairly steady fall both in the total catch and in the catch per unit of effort. (The catch per unit of effort has been measured in terms of landings per days absence of British trawlers of "first class" standard - that is, trawlers that met certain standards of size and equipment). From 1914 to 1918, during the war years, very little fishing took place. When fishing started again after the war, both total catch and catch per unit of effort had greatly increased. Thereafter, both fluctuated on a downward trend; and by 1935 both were below what they had been in 1905. (The changes, both for haddock and for the other fish mentioned, are most easily seen on the tables on pages 14 and 15).

Russell's own comment on the figures for haddock is:¹²

"The general conclusion from these figures is that with something like 100 per cent increase in fishing as compared with the period 1920 to 1925, the total yield from 1932 to 1935 was much less than it was in the earlier period. That the density of the stock had decreased is clearly shown by the fall in the landing per day's absence to which we have already referred."

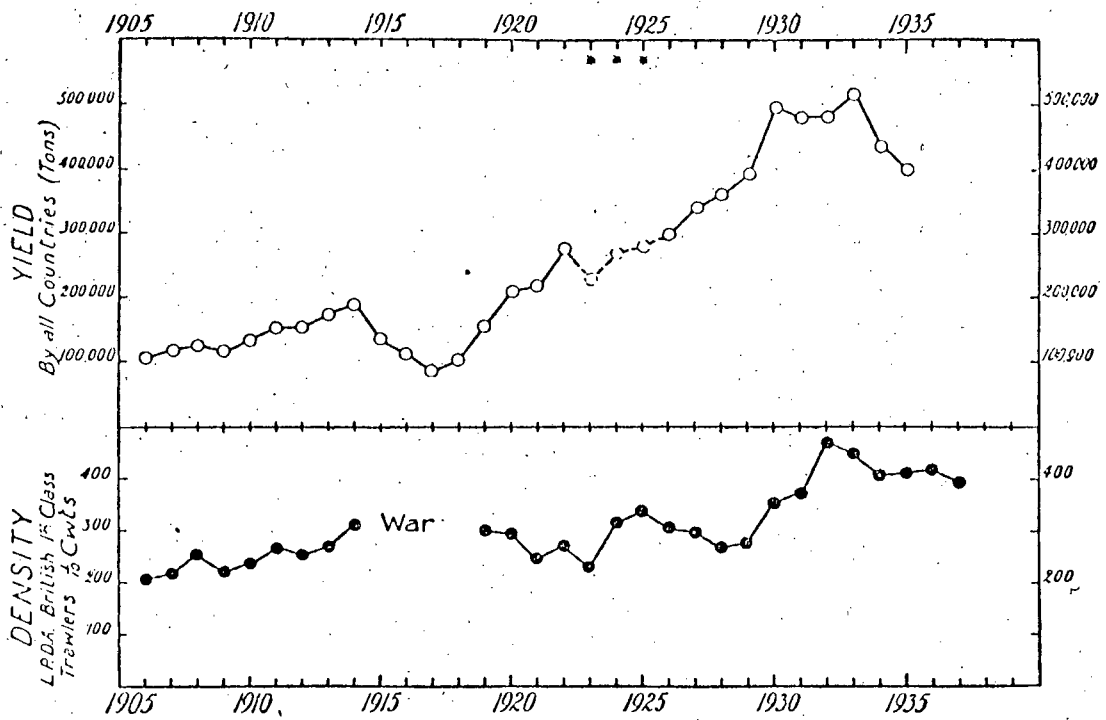
It is indeed a common view among biologists that a fall in the catch per unit of effort is clear evidence that the fish population has been reduced. I am not convinced that this view is correct. On the Icelandic fishing grounds, as Russell himself points out, the effort to catch haddock had approximately doubled over the period under consideration. It might therefore be expected that the catch per unit of effort would fall, whether or not there was a fall in the fish population. A simple illustration may make this clear. Suppose that on a particular fishing ground ten trawlers are at work, and they bring in a total of ten tons a week - that is, each trawler brings in one ton a week. Now suppose that the number of trawlers is increased to twenty. What will happen? It seems that there are two limiting possibilities. One is that each trawler will catch exactly the same amount as before, in which case the total catch will double; the other possibility is that the total catch





Halibut from Icelandic Grounds.

• Iceland's Share not available 1923-1925; so estimated



Cod from Icelandic Grounds.

• Iceland's Share not available 1923-1925; so estimated.

will remain at ten tons, in which event each trawler will catch half a ton instead of one ton. Neither of these two limiting possibilities is very likely.* The first one would only happen if the fish population were so large in relation to fishing effort that there would be just as many fish available to twenty trawlers as to ten; the second would only happen when the ten trawlers caught the entire available catch in a week, leaving no extra for the other ten trawlers - who would thus have to share the available fish, thus reducing the catch of each trawler to half a ton. In real life, what would probably happen is that there would be some increase in the total catch, and some fall in the catch per unit of effort. But this fall in the catch per unit of effort would not be clear evidence of a fall in population. (By fall in population is meant, of course, a permanent fall in population. It is the time element that makes these questions confusing. It is obvious that, at the moment that the catch is lifted out of the water, the fish population has been reduced by the weight of the catch. But if, by next week, or next season, the population has grown back to its original size, then it is reasonable to say that the population has not been reduced. It is here that the enormous reproductive powers of fish are relevant. And perhaps it is helpful to regard fish not as a stock - as is so often done - but as a flow. Provided that, over a reasonable time period - perhaps from the beginning of one fishing season to the beginning of the next season - the outflow is not greater than the inflow, the fish population is not being reduced).

To return to the Icelandic fishing grounds: the figures for plaice are similar to those for haddock. There was a decline both in the catch and in the catch per unit of effort between

* Also, these limits might not hold over time. Thus the immediate result of doubling the number of trawlers might be to double the catch. Later, the larger catch might affect the size of the fish population and lead to smaller catches in succeeding time periods.

1905 and 1914. During the war there was little fishing; when fishing re-started after the war, catch per unit of effort was higher than in any other year during the period under consideration; and total catch rose to more than 10,000 tons - also the highest during the period. Between 1920 and 1935 total catches fluctuated, but the trend was downwards; catch per unit of effort fell fairly steadily.*

Halibut show a generally similar trend, but it is much less marked than that of haddock or plaice. Probably the reason for the difference is that halibut was not a main target of the trawlers. Halibut are large fish, and it is therefore line fishermen rather than trawlermen who fish for them. Russell points out¹³ that it is therefore the landing per days absence of steam liners, rather than trawlers, which give the best clue to changes in the halibut population; and these landings fell considerably during the period: from 10.1 cwt per day in 1922 to 1.4 cwt in 1929. Thereafter it rose slightly, and between 1932 and 1937 the average was 2.8 cwt.

The figures for cod are entirely different. From 1905 to 1914 both the total catch and the catch per unit of effort were rising. When fishing restarted in 1919, both were about the same as they had been in 1914. From 1919 to 1930 they both rose; during the early 30's they fell slightly, but they still remained well above the pre-war figures. (It is also worth noting that the total catch of cod was very much greater than that of any of the other

* At the time he wrote his book, Russell was Director of Fishery Investigations in the British Ministry of Agriculture and Fisheries. He looked at the over-fishing problem from a biological point of view. When catches fell, it was assumed this was because there were fewer fish to catch. An economist would at least have considered the possibility that there had been a fall in demand; and Russell might have made his case logically more water-tight by producing figures to show that fish prices had not fallen over the periods he considers; or that they had not fallen more than other prices; or that the fall in the catch of e.g. halibut in the middle and late twenties was not due to consumers switching from halibut to commoner types of fish. On the other hand, the fall in the catch per unit of effort could not be caused by a fall in the selling price of fish.

fish. In 1930 the cod catch was about 500,000 tons, haddock about 40,000 tons, plaice about 5,000 tons, and halibut less than 5,000 tons. So the cod catch was about ten times as great as the other three put together).

What is one to make of these figures? The jump in the catch of haddock and plaice, after the wartime break in fishing, does strongly suggest that the population had grown while it was being rested. Indeed, it is difficult to account for the jump in any other way. If this is so, it would seem that pre-war fishing must have reduced the population; and the fall in catches during the 20's and 30's would seem to bear this out. But the increase in the catches of cod does cast a shadow of doubt over this explanation. It is known that the waters round Iceland at this time were becoming warmer, and, probably for this reason, the quantity of cod was increasing. It would therefore seem not impossible that the quantity of haddock and plaice were declining for reasons unconnected with fishing; either because the environment had changed in a way unfavourable to them, or simply because cod now occupied more of the ^aavailable living space and ate more of the available food.

So while there is certainly much evidence that fishing can seriously reduce fish populations, and while most experts accept that this does happen, there are some who are coming back to something like the views that Huxley held in the 1880's. Thus Dr Harden F. Taylor has written:¹⁴ "Such statistics of world fisheries as are available suggest that while particular species have fluctuated in abundance, the yield of the sea fisheries as a whole, or for any considerable region, has not only been sustained, but has generally increased with increasing human populations, and there is as yet no sign that they will not continue to do so. No single species so far as we know has ever become extinct, and no regional fishery in the world has ever been exhausted." Those who claim that fishing has little effect on fish populations can argue that in the delicate ecological balance of marine life fish populations often rise and fall without any interference from man. When a fish population in

which human beings are interested - that is, one that is being fished intensively - starts to decline, fishermen become worried, and measures to prevent over-fishing are introduced. After a time, as would have happened anyway, the fish population starts to grow again. This is then held to show that the conservation measures have been successful, although in fact both the original decline and subsequent recovery of the fish population were natural events, unconnected with over-fishing or conservation, that would have happened anyway. There may be something in this line of argument; but so far it appears to be purely hypothetical; there does not seem to be concrete evidence to support it. On the whole, it is impossible to doubt that fishing has some effect on fish populations, and that under certain conditions it can have a very great effect.

Granted, then, that there is some relationship between size of fish populations and the amount of fishing effort expended on them, the question arises: what form does the relationship take? how may fish populations be affected by fishing? To answer this question, one must know something about the way in which fish populations grow.

Although fish populations have been studied for many years, and much knowledge gained about the growth rates of individual fish, mortality rates, breeding habits, and so on, there is still little exact knowledge of the true size of fish populations, or of the way in which fish populations grow or alter over time. Indeed, this information is not of much interest to the fisherman. He is not so much interested in how many fish are in the sea as in how many he can get out; and although the one may be a function of the other, there are more direct ways of estimating the maximum sustainable catch than any which attempts to start by an estimate of total fish population and rate of growth. But even without experimental knowledge, it would seem that certain facts can be inferred about the growth of fish populations.

In the first place, it is clear that when the fish population is very small, growth in the absolute sense will also be very small, simply because the base from which growth takes place is so tiny.

It is probable, of course, that the growth will be large relative to the size of the base, since a small population may lead to huge numbers of infant fish which will grow very fast. (It should be made plain at this point that fish populations are being considered by weight and not by numbers; a comparatively few parents might produce millions of fish fry which would represent a vast increase in the fish population, considered as individuals, but only a small increase, considered from the point of view of weight. Again, it is weight rather than numbers that interests the fishermen).

In the second place, it should be clear that when the fish population is very large, growth will also be slow, because the population is now approaching the point at which the amounts of available food - or some other natural limiting factor - prevent further growth. Between these two points of slow or zero growth, there must be intermediate points at which, if the population is to grow at all, growth must be faster. This suggests that the growth of fish populations must be capable of being represented by a curve; though we have no ideas what the shape of the curve might be:

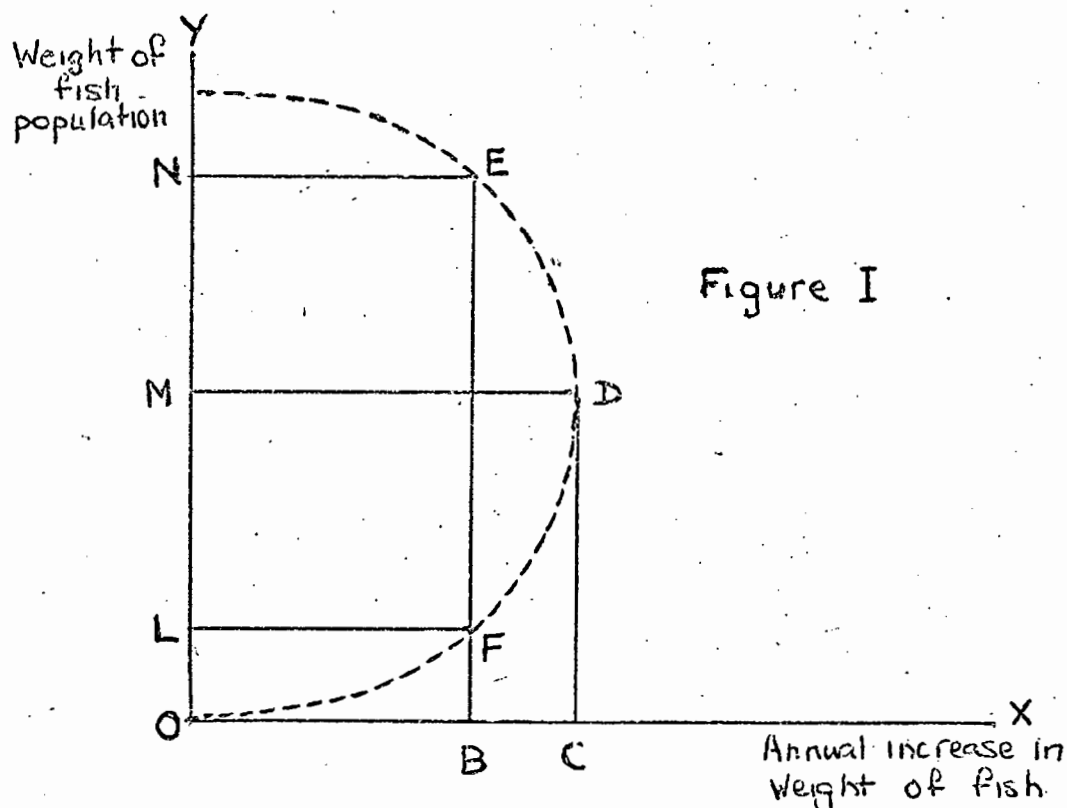


Figure I shows a possible growth curve for a fish population. The greatest rate of growth is OC; and this rate of growth takes place when the population is OM. OC, then, represents the maximum sustainable catch, the largest catch that can be made year after year without permanently reducing the weight of fish. At any other point in the curve, a catch of OC tons a year would cause a reduction in the fish population.

It should be noted that this catch OC takes account only of the fish population and its environment. It takes no account of the price of fish, the demand for fish at that price, fishing costs, or any other human aspect. There is therefore no reason to suppose that OC will coincide with the quantity of fish that is actually demanded from the fishermen who happen to fish that particular fish population. Nevertheless, there may well be some functional relationship between the maximum sustainable catch and quantity actually demanded at the market price. It is clear, at least, that quantity sold cannot, in the long run, exceed the maximum sustainable catch.

If, as is likely, the maximum sustainable catch does not equal the quantity of fish that is actually demanded at the price fishermen are willing to sell at, then clearly it must be either bigger or smaller. Suppose that when quantity OC - the maximum sustainable catch - is produced, demand is unsatisfied. The quantity demanded, at a price consumers are willing to pay and fishermen willing to accept, is larger than the maximum sustainable catch. What will happen? Fishermen may raise their prices, but at the same time they will try to catch more fish. As a result, fishing costs will rise, the fish population will fall, and eventually an equilibrium point will be reached, possibly at a production of OB tons in each time unit. At this point the fish population will have been reduced to OL. The consumer will be worse off, since even with the higher prices he is paying, the total of fish being produced is less than the maximum sustainable catch; the fishermen may or may not be worse off; they are making greater efforts, catching

fewer fish, but being paid more for them. Whether they are better or worse off will depend on whether their total income (fewer fish sold at a higher price) has grown more than their costs. But what is certain is that they could have produced the same quantity of fish with less effort at lower cost at the point E on the curve. It would benefit fishermen as a group to restrict production to some point on the curve above F (if "restrict" is the right word when "restricted" production is ^{-eventually-} larger than unrestricted production). But so long as his revenue exceeds his expenses from any given trip, it will pay each individual fisherman to increase his catch. Under the conditions outlined on the diagram, it will pay the individual fisherman to increase his catch at any point above F on the curve, (for reasons that will be more fully explained later); and each fisherman will know that if he does not increase his catch, some other fisherman will; he cannot conserve the fish stock by himself abstaining.* Finally, it seems reasonable to claim that at point F on the curve even the fish are worse off than they were at point D - let alone point E - since fewer of them are left alive. Neither the consumer, nor the fishermen, nor the fish, have benefitted as a result of uncontrolled competition. Under the circumstances described, the market system does not seem to have worked well.

The second possibility is that the quantity of fish demanded at prices which fishermen are willing to accept is less than the maximum sustainable catch. In this event the outcome is less easy to predict.

* An account of the North Sea fisheries at the end of the 19th century offers an example of this from history: "When trawling first commenced on these (North Sea) banks, large, well-conditioned fish were caught in great numbers. The progress of the years has, however, brought a change in the character of the fish sold. By degrees smaller and smaller fish have been accepted as marketable, so that now a box of small plaice or haddock can find a ready sale, where previously the same class of fish would not have been brought on shore. Fishermen and salesmen alike cry out against this market for small fish, but money is not plentiful, and competition is keen.... It is the most obvious "killing the goose which lays the golden eggs" that probably ever occurred... fishermen are crying out in despair that the methods that they themselves are practising are ruining the fisheries, but they dare not stop because others won't." 15.

Suppose that, in Figure I, the quantity sold each year is OB tons. This quantity could be produced permanently from any population greater than OL. There would be, in fact, a large number of possible supply curves, corresponding to different fish populations; but the quantity OB could be most cheaply produced when the fish population is ON. At populations below ON, the removal of OB tons each year would allow the population to grow until it reached ON. It is true that there is another population, OL, at which the removal of OB tons each year would keep the population constant. But on the face of it it is hard to see why fishermen could be driven to fish the population so hard, when sufficient to supply demand could be obtained more easily from points higher up the curve. So it does seem that free competition might lead to the most economic use of the fishery resource, provided that the effective demand was below the maximum sustainable catch. However, we cannot be sure about this yet; so far we have looked at the question only from the point of view of what would be the most economic relationship between fish population and total catch. We have not looked at the question from the point of view of the fisherman; until we have considered what motives cause him to fish or to abstain from fishing,* we cannot expect to know how much fishing will actually be carried on.

It is worthwhile to ask at this point: under what conditions is it likely that the effective demand for fish will be below the maximum sustainable catch? Effective demand depends on, among other things: the number of people wanting to buy fish; their ability to pay for what they want; the effectiveness of the transport system linking consumers with the fishing ports; and whether or not

* This is really the crux of the problem. But if the fishermen's motivation is to be considered, so many variables are introduced - price, quantity, fish population, amount and cost of fishing effort, together with the time factor - that it becomes difficult to depict the changing relationships on a two-dimensional graph. A multi-dimensional one would seem to be necessary. Anthony Scott, amongst others, has used graphs with several axes to try to demonstrate the relationship between effort, fish populations, landings, and costs.¹⁶ But it seems doubtful if these graphs do much more than show that there is some relationship between these variables.

fishermen are using advanced techniques enabling them to catch large quantities of fish cheaply.¹⁷ Considerations of this sort suggest that it is more likely to be in the poorer and less developed areas of the world that effective demand will be less than maximum sustainable catch. And the history of fishing seems to bear this out. As fishing techniques improve, as the number of people increase, as transport systems spread and industry evolves, so does the ^{consumption of} ~~consumption of~~ fish increase, and the problem of "over-fishing" becomes more in evidence.

How and why does this happen? One way to answer this question might be to elaborate on an approach suggested by Turvey.¹⁸ Turvey's analysis starts with a curve similar to that already shown in Figure I, showing the relationship between the total weight of fish population and the annual increase in weight :

(See Figure II on next page)

In Fig. II when population is OA, the annual increase in weight is $A-A^x$; when population is OC, annual increase in weight is $C-C^x$, and this is the fastest rate at which the population can grow, and therefore the maximum sustainable catch in any one year. As population increases further, growth rate slows; when the population is OE, annual increase in weight is $E-E^x$ (which by chance, is the same increase as $A-A^x$). It is assumed that the environment in which the fish are living is unchanging; in the absence of any fishing by man, population would in time reach OF, and would remain there. If, each year, fishermen caught $E-E^x$ tons of fish, the fish population would be reduced to OE, and would remain stable at this weight, the reduction in population (by fish caught) and the natural increase, just balancing each other.

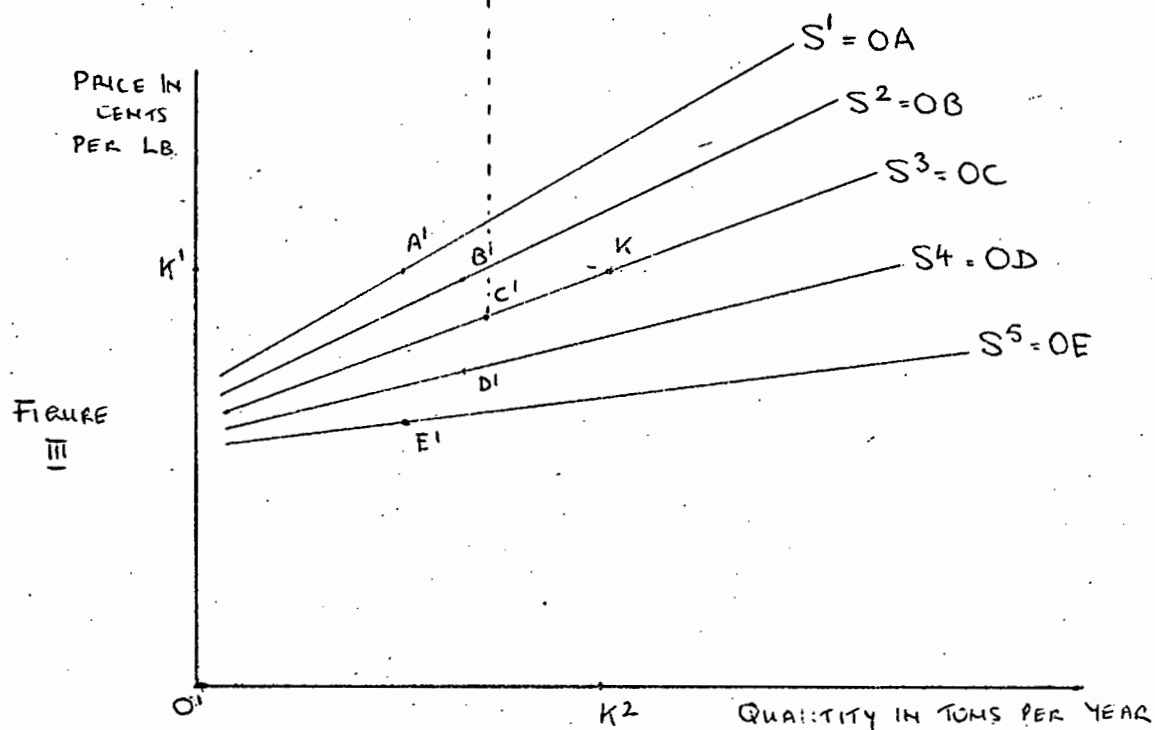
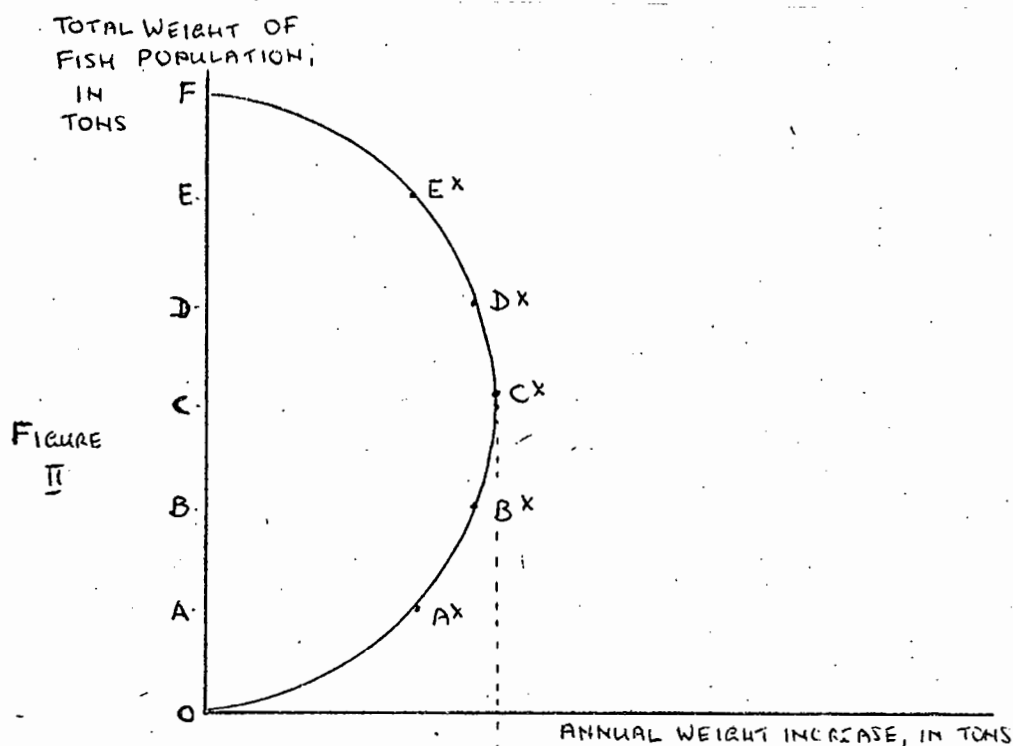


Figure III, immediately below, shows a series of supply curves for different fish populations. Thus if the fish population were OC tons, fishermen would be willing to sell fish at any point along the curve S^3 , according to the prices offered. If price offered was, for instance, K^1 cents per lb., fishermen would want to sell K^2 tons of fish a year. (The "=" signs in Figure III - and in Figures IV - VII, are to be interpreted as meaning "is the supply curve when fish

population is;" e.g. S^3 is the supply curve when fish population is OC tons). But it is clear that if, when fish population was OC tons, fishermen tried to sell more than $C-C^x$ tons of fish in a year, the fish population would start to fall; since the amount is greater than the annual increase in weight of a fish population of OC tons. Similarly, if fishermen sold less fish in the year than the annual rate of increase of that population, population would increase. There is, however, one point on the curve S^3 at which reduction by fishing and natural increase exactly balance: this is the point C^1 ; the distance between C^1 and the vertical axis in Figure III corresponds to $C-C^x$ in Figure II. C^1 thus represents the only point on the supply curve S^3 at which it would be possible to fish permanently, without either increasing or decreasing the fish population. A^1 , B^1 , D^1 , and E^1 are all similar points; thus if population in Figure III were OA tons, then point A^1 on the curve S^1 (corresponding to an annual increase of $A-A^x$ in Figure II) would be the only point at which fishing could continue permanently without a change in population. If one imagines a line joining A^1 , B^1 , C^1 , D^1 , and E^1 in Figure III, this line would represent the various catches which it would be possible to maintain permanently at various levels of fish population. One can also imagine an infinite number of supply curves - S^1 , S^2 , S^3 , up to S^x - lying between and beyond the five curves actually shown.

Now it must be admitted that the supply curves in Figure III have something rather odd about them. A supply curve purports to show "the quantity producers will wish to make and offer for sale at various alternative prices of the product."^{*} This phrase, apparently so clear, contains at least two distinct possible meanings: (1) It might be a statement of contemporary fact: now, at this moment, under existing conditions, these are the quantities producers will wish to offer for sale at various prices.

* See any economics textbook. This definition is from R.G.Lipsey: *An Introduction to Positive Economics* (Weidenfeld and Nicolson, London, 1969) p.96.

(2) It might be a prediction relating to future expectations: these are the quantities producers will wish to sell at some time in the future at various prices. If it is regarded as a prediction, then the supply curve involves an implicit assumption: that all variables that might affect supply are held constant.

Regarded as statements of fact, the supply curves for fish in Figure III are like other supply curves: they show what fishermen will wish to offer for sale now. But they cannot be regarded as predictions, for prediction involves holding other variables constant, and it has already been established that one of the variables - the fish population - will not be constant except at one point on the supply curve. This curious position arises because fish - unowned and individually uncontrollable - are both the producer and the saleable product.

It is difficult to think of another occupation in which exactly the same conditions apply, or in which it would be reasonable to approach the problem in the same way. Grain, it is true, may be either seed-corn or saleable product; but what the cultivator uses as seed is at once withdrawn from the possibility of being saleable product. In fishing there is nothing akin to the saving of seed-corn. Probably the occupation that most closely resembles fishing in this regard is ranching, where land is plentiful and where the cattle might be seen as both the product and the producer. The difference between ranching and fishing is that the rancher has a degree of control over his stock, and can decide how much to sell and how much to keep; the fisherman cannot make this decision in the same way. Fur trapping probably comes closest of all to fishing in this regard.

The peculiarity of the supply curves in Figure III does not mean that their construction is pointless: it means only that their function is limited to the illustration of a theoretical argument, and not to the solution of practical quantitative problems. (Which is, perhaps, another way of saying that they express contemporary fact, but cannot be used as predictions).

To discover what will happen in any given fishery, we have to add a demand curve. Various demand curves are, of course, possible, and will lead to various results. When we have examined a number of demand curves in relation to Figure III, we may be better able to understand why fisheries so often develop in the way they do:

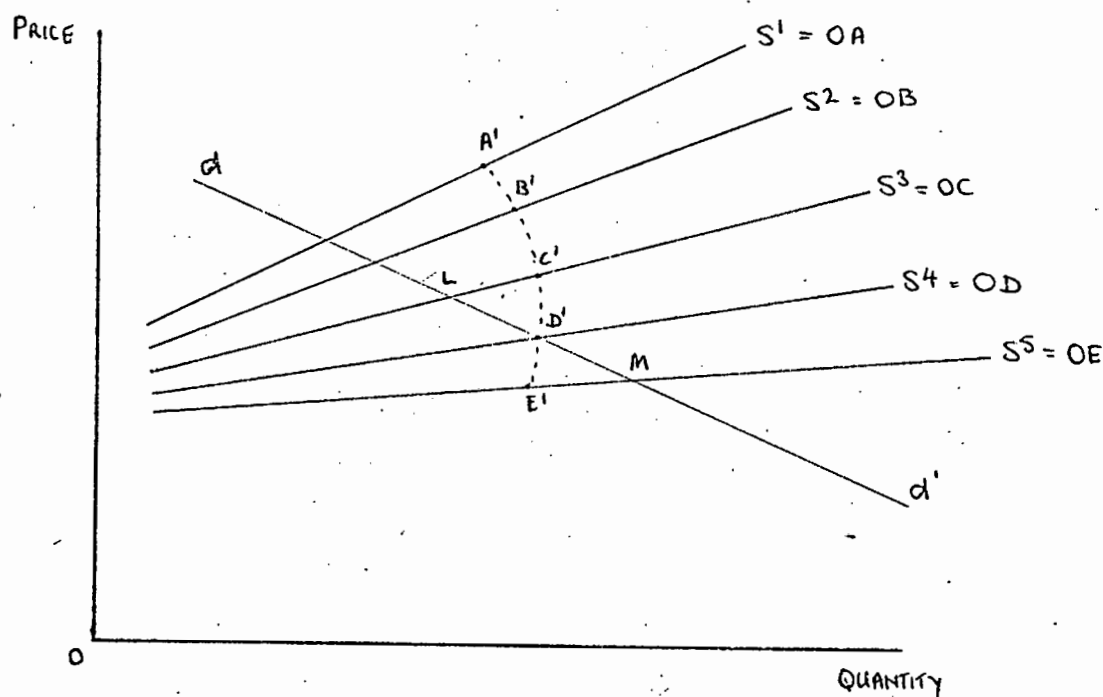


FIGURE IV

Figure IV shows a demand curve $d-d^1$ cutting S^4 at D^1 . Let us suppose this is a fishery in the early stages of its development; so far the fish population has been little exploited; it is still large - OE on Fig. II. Fishermen will try to catch fish up to point M on the supply curve S^5 . But this catch is to the right of point E^1 on S^5 ; therefore it is a bigger catch than population OE can maintain, and population will start to decrease. Suppose that it sinks to OC tons; this is the population at which rate of increase is fastest; whereas the cost of fishing has risen (due to the smaller fish population) so that fishermen are asking higher prices and demand

is now less than it was before. In fact, demand, represented by L on S^3 is now less than the annual increase in fish population. The quantity of fish sold will fall; so therefore, will the quantity of fish caught; and the fish population will start to grow again. Eventually a point of equilibrium will be reached (in this chart, at D^1 on S^4) at which catch and natural increase balance. Provided nothing else changes (in real life, of course, something will change) fishing could carry on indefinitely at this level. It is not chance that the demand curve and the curve $A^1 B^1 C^1 D^1 E^1$ coincide on a supply curve. There are an infinite (or at any rate an extremely large) number of supply curves, corresponding to the extremely large number of possible fish populations; so that wherever the demand curve cuts the curve $A^1 - E^1$, it will be upon some supply curve. It might be added that the point D^1 is the optimum production for this fishery; neither fishermen nor consumers could better their position without harming someone else; and competition between fishermen could be expected to ensure that fishing would be technically efficient. So far, free competition seems to have worked satisfactorily.

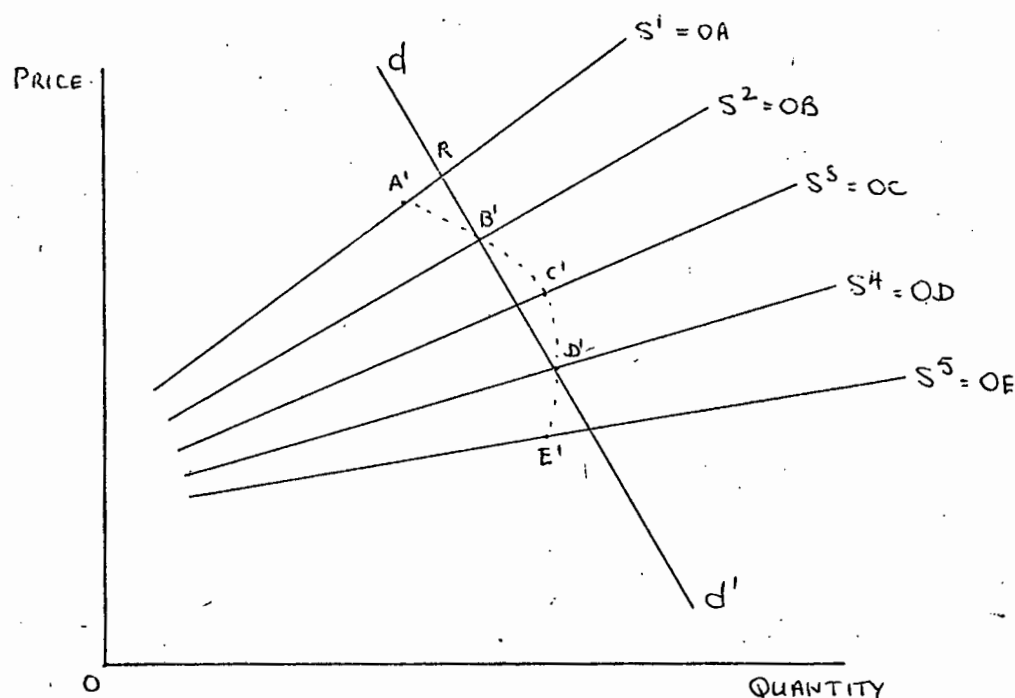


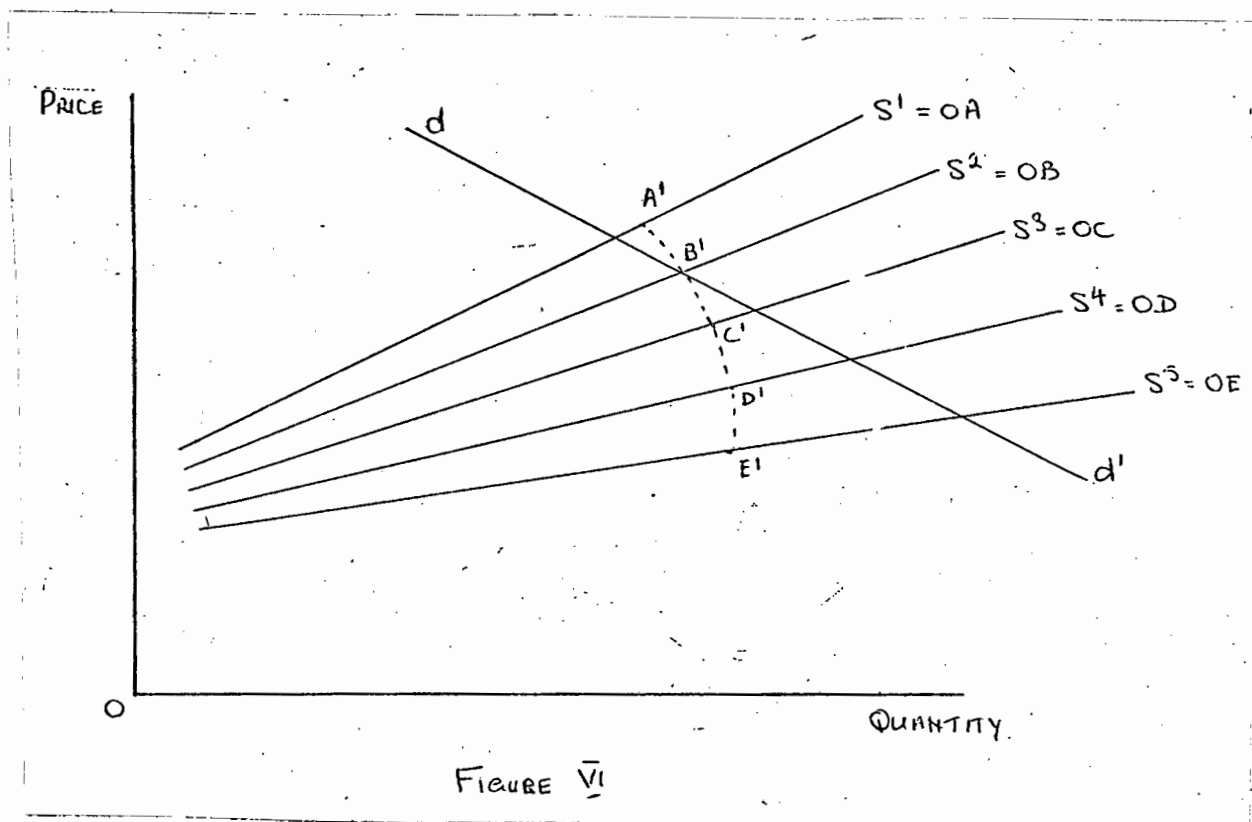
FIGURE V

A different demand curve might produce a different result. In Figure V in which a steeper demand curve represents a more inelastic demand for fish, two points of equilibrium are shown. Suppose again that when fishing starts there is a large population - OE tons. At this population, annual catches are larger than annual population growth. The population might fall to OC tons; annual catches would then be smaller than annual population growth. Finally, (the sequence of events is similar to that in Fig. IV) an equilibrium position could be reached at D^1 on S^4 , and fishing at this rate could continue indefinitely.

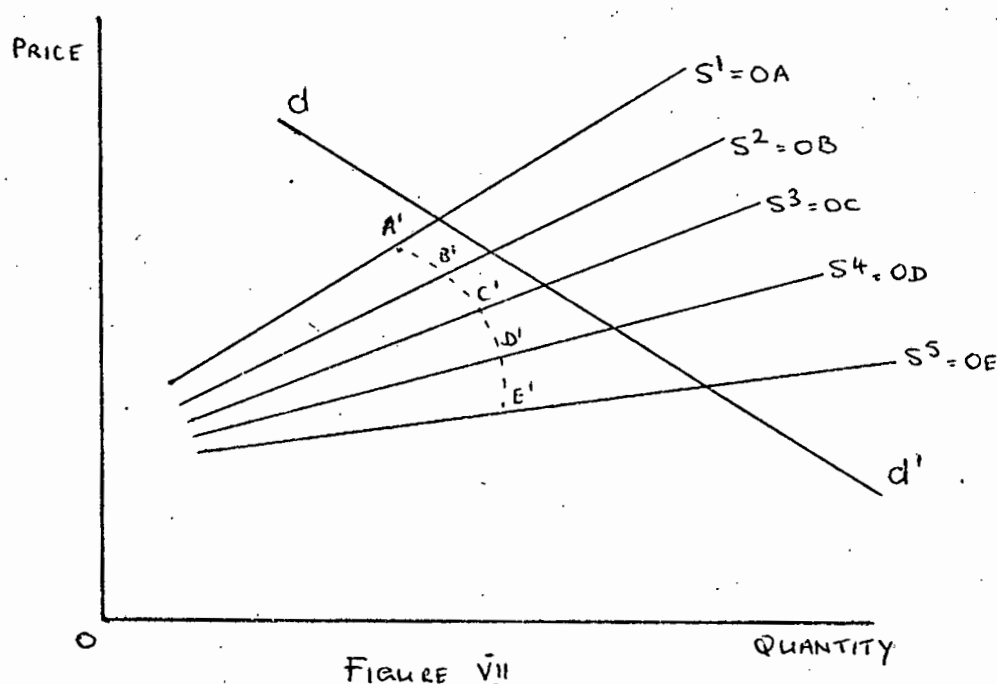
But there is also another possibility. It might happen, through the introduction of a new fishing technique, for instance, that the fish population was sharply reduced. If it were reduced to OB tons, a new equilibrium might be reached at B^1 . But this would not be the same type of equilibrium as that at D^1 . Catch and population could continue at this level; but if for some reason the catch fell temporarily, population would start to increase, and a position would be reached on some supply curve below S^2 at which the amount that could be sold at the market price was less than the annual increase in population. Population would increase further, therefore, and finally the former equilibrium position at D^1 on S^4 would be reached again. On the other hand, if, at the equilibrium position of B^1 on S^2 , catches temporarily increased, a different situation would arise. The market demand above the curve S^2 is for a greater quantity of fish than any population smaller than OB tons can sustain. Fishermen would attempt to meet the demand, and would try to increase the "efficiency" of their fishing methods, perhaps by adopting more expensive equipment. This would still further reduce the fish population and send the cost of fishing (for each unit of fish caught) even higher.

This process would bring into existence a whole new series of supply curves, corresponding to the increased costs of fishing. The supply curves would all move upwards until the curve $A^1 B^1 C^1 D^1 E^1$ met the demand curve again at some point high enough to

establish equilibrium. It might well not be a very long-lasting equilibrium. Costs would be higher than they had been at D^1 on S^4 . (There would have been over-investment in fishing equipment). Production would be less than at D^1 on S^4 . The situation would not be the optimum one either from the point of view of fishermen or of consumers. But free market forces would not increase production or bring down prices. The paradoxical position would have arisen in which apparently the only way to enable fishermen to catch more would be to introduce some form of control which would force them to catch less! (Obviously, as fish population started to rise in response to the smaller catches, the number of fish that could be legally caught could be gradually increased until the desired catch - perhaps the maximum sustainable catch - had been achieved). These considerations suggest that under the conditions portrayed in Fig. V free competition would not always work well.



In Figure VI there is equilibrium at B^1 on supply curve S^2 . When population is bigger than OB tons, catch will be above sustainable catch - e.g. on curves S^3, S^4, S^5 ; so fishing will tend to bring population down to OB tons. But if fishing drives population below OB tons, the demand will be for less than the sustainable catch at that population; catches will fall, population will increase, until finally equilibrium is re-established at B^1 . But although this is a self-adjusting equilibrium, it is not self-adjusting at the optimum catch. At either C^1, D^1 or E^1 fishermen could catch more fish at lower cost. We cannot tell, from Figure VI, which point will be the optimum, either the social optimum or the optimum from the fisherman's point of view; but it is quite clear that B^1 cannot be the optimum. On the face of it it seems likely that C^1 , the maximum sustainable catch, will be the social optimum. A larger sustained catch is, by definition impossible, and since consumers are willing to pay more for the maximum sustainable catch than it costs to produce, they would not benefit by being offered a smaller catch. Fishermen might perhaps benefit by selling a smaller catch at higher prices; but this would be in the nature of a monopoly profit. Here, again, it would seem to be necessary to institute some sort of control if the social optimum is to be attained; it will not be reached by free market forces.



In Figure VII demand for fish is so great that it is above the maximum sustainable catch at any population. What will happen? Encouraged by high prices, fishermen will make greater efforts to increase their catches. Catches will not increase; in the long run they cannot; there may be short temporary increases following the introduction of new techniques; but in the long run **it will** be impossible to make demand and supply meet on the chart as it is. But as fishermen buy more equipment and invest in more "efficient" techniques, their costs will rise. Once again, there will be over-investment in fishing. As a result of this, all the supply curves will shift upwards; finally the curve $A^1 B^1 C^1 D^1 E^1$ will meet the demand curve, and here some sort of an equilibrium may be established. What sort of an equilibrium depends on the shape of the curves; if the final pattern resembled Figure VI, then there would be a stable equilibrium, though with costs higher than the optimum. If the final pattern resembled that of Figure V, then the industry would be liable to recurrent crises whenever demand pushed catches above the sustainable catch at that particular population level.

I think this analysis explains clearly enough why it is that developed fisheries so often run into economic difficulties. In "under-developed" areas, it is unlikely that the primitive methods of fishing will enable fishermen to reduce the fish population seriously; it is also unlikely that there will be a communication system widespread enough and rapid enough to supply a large market. Therefore both demand and supply will be small. As the area develops, fishing techniques will improve, and the growth of an inland transport system will lead to a larger market and greater demand. Then the fishery will follow the course outlined in Figures IV to VII, ending, in all likelihood, with high costs, over-capitalisation, and a smaller total catch than could be produced by less intensive methods of fishing.

I doubt if it is possible, or necessary, to pick out any one "cause" of this sequence of events. It is evident that the

unpredictable nature of fishing plays a part; if fishermen could foresee more accurately the outcome of investment in fishing they would be less likely to burden themselves with capital equipment which ~~turns~~ out to be unprofitable, and yet which has to be used (to the detriment of the fishery as a whole) because not using it would cause the fisherman who bought it even greater losses than using it. But human nature is often hopeful; when the outcome is uncertain, it is a human reaction to hope for the best. The fisherman, when fish become scarce, and prices are high relative to costs, is only too likely to feel he can improve his position by investing in more efficient - and more expensive - equipment. And indeed he can sometimes improve his position, at least for a time; perhaps until other fishermen invest in similar equipment and so cancel out his advantage.

The fact that fish are a common property resource plays its part here. If a fisherman could retain some part of the sea as his own, and ensure that "his" fish stayed on his property, then he could decide to fish conservatively, to be content with smaller catches at low cost. In fact, he cannot do this; if another fisherman invests in more efficient equipment, so must he, or his rival will catch "his" fish.*

*It might be asked: if free competition leads to this sort of inefficiency, would monopoly be better? The answer is, probably yes. A monopolist would aim at maximum net economic yield; owing to the unpredictable nature of fishing, he might not get very close to it, but there would not be economic forces dragging him away from it, as there are in competitive fishing. And he would not make monopoly profits, provided he could not influence prices by reducing production. In the real world he could probably do this only to a very limited extent, because the entrepreneur who has a monopoly of fish still has to meet competition from a variety of competing foodstuffs - notably chicken. The monopolist would probably decide on some "reasonable" rate of fishing and stick to that; Irvin and Johnson seem to have behaved rather in this way when they had a near-monopoly of South African trawling. (The monopoly here considered is not, of course, a sales monopoly, but some form of monopoly in the use of the fishing grounds.)

The demand and supply positions shown in Figures V and VII suggest another reason for over-capitalisation. In most industries, an investment in capital goods will lead to increased production. But in fishing, when demand is unsatisfied even by the maximum sustainable catch, then capital investment and output tend to move, as it were, in opposite directions. This is because ^{in the open sea cannot be owned and} fish are both the product and the "factory" of the fishery. More "efficient" equipment may temporarily increase output but if it damages the "factory" the end result may be an output that is no larger and may even be smaller.

These peculiarities of the fishing industry are sufficient explanation, I think, for the unsatisfactory economic development of fisheries noted in the quotation from Crutchfield on page 5.

But whether or not one agrees as to the ~~exact~~ cause of over-fishing and over-capitalisation in the fishing industry, there is little doubt that it does exist. Free competition does not lead to the best use of the fishery resource, either from the point of view of the biologist, or from that of the economist. Some centralised control of fishermen and the fishing industry would seem to be desirable. Yet, despite its disadvantages, free enterprise does have undoubted advantages, and especially perhaps in an industry such as fishing, in which comparatively small groups of men must operate far from possible supervision. It is obvious that the possibility of profit might be the best way of motivating such men; and this indeed may well be one reason why fishermen's remuneration commonly includes a share of the catch. Is it possible, therefore, to find some middle way between complete free enterprise and total central control: some method which combines the advantages of both systems?

This is a question that has arisen in many industries; and the South African fishing industry is one of those in which an attempt has been made to find an answer. It was in an effort to find this answer that the Fisheries Development

Corporation was founded in 1944. It will be the main purpose of this study to trace the history of the origins and development of the Corporation. An attempt will also be made to evaluate the work of the Corporation: how far has it succeeded in combining the advantages of control with the benefits of free enterprise? By what criteria should its achievements be judged?

In attempting to answer these questions, this study will be chiefly concerned with the period 1944 to 1970 - that is, the first 25 years of the Corporation's existence. (It officially came into being on 1 October 1944).

It would be well, however, before turning to the history of the Corporation itself, to set the study in perspective by an outline of the growth of the South African fishing industry from its early beginning until the establishment of the Corporation in 1944. It is to this aim that the next section will be given.

II. THE GROWTH OF FISHING IN SOUTH AFRICA

1. The Geographical and Ecological Background.

As explained in Chapter I, marine life depends on the nutrient salts found in the sea. These salts are not evenly distributed through the oceans. They tend to sink to the sea floor. But they may be carried along the sea floor by cold currents; and if at certain points these cold currents should approach the surface, the nutrient salts are carried up with them.

There are four points on the earth's surface where cold currents carry large quantities of nutrient salts into the euphotic zone and so form areas of "sea pasture". They are off the coasts of Peru, off California, off North West Africa, and off South West Africa; and in each of these places fishing industries have grown up.¹⁹ Off the South West African coast, it is the cold Benguela Current that bring the nutrient salts to the surface; and it is in this area that more than 90% of the fish landed in South Africa are caught. Another current, the warm Agulhas current, moving south-eastwards along the southern coast of Africa, carries nutrient salts over the Agulhas Bank. This is, however, a less productive area; many varieties of fish are found, but not the great concentrations of the West Coast.

Two further aspects of the West Coast fish "pasturage" are worth mention. The first is that as a fishing area it would be richer still if the continental shelf of Africa were not so narrow, because the shallow seas of a continental shelf make it less likely that dead plankton and other nutrients will sink to a depth where they can no longer be used for food. The second aspect is the unstable nature of sea "pasturage". There can be large "swings" in the amount of plankton available;²⁰ this can lead to rapid changes in the delicately poised ecological balance of the marine populations which feed on the plankton and on each other.

NB
 The rise and fall of fish populations would matter less to the fisherman if he were equally interested in all fish. But, in fact, of the 1 300 species of fish that are to be found in South African waters, only 30 are of economic importance; and of these 30, only six - pilchard, anchovy, mackerel, hake, snoek and rock lobster - make up 90% (by value) of the South African catch. ²¹ This means, therefore, that the South African fishing industry has a rich, but narrow and unstable base.

2. The Nature and Divisions of the Fishing Industry.

One of the difficulties in any exposition of the fishing industry is its lack of homogeneity. It embraces a number of activities which, apart from the fact that they are based on the exploitation of marine products, may have only tenuous connections with each other. And if "fishing" is to be defined as the catching of fish at sea, and the bringing of them to shore, then only a small part of those working in the fishing industry are actually engaged in fishing; far more are concerned with the processing, marketing, and transportation of the fish, or with the building and maintenance of fishing boats, fishing tackle, and harbour installations.

The products of the industry, like its activities, are varied. They include fresh fish, quick-frozen fish, and tinned fish, all destined for human consumption; fish oils, which may be used as food, or in industry; and fishmeal, which may be used as fertiliser, or as stockfeed.

In more detail, the South African fishing industry can be broken down into six divisions, as follows:

1. Coastal fishing, including:
 - Purse-seine-net fishing for pilchard, etc. *
 - Hand-line fishing
 - Coastal trawling for soles
 - Rock lobster fishing
 - Prawn fishing
 - Diving for perlemoen and oysters

2. Ocean fishing, including:
 - Ocean trawling for stockfish etc.
 - Tuna fishing.

3. Whaling

4. Sealing

5. The collection of guano

6. The exploitation of seaweed.

It would be possible to write a history of each of the sub-divisions here mentioned, and a complete account of South Africa's marine-based industries would indeed require such an account. For the purposes of this thesis, however, it will be better to ignore all but the more important divisions. Therefore nothing will be said about:

(a) Prawn fishing. This was only a small-scale activity during the period 1944-1970, the period covered by this thesis. In 1970 the total catch was 400 metric tons, valued at R354 000.²² In the same year, the total catch

* Purse-seine-net fishing - which will be referred to in future as "shoal fishing" - was classed as a form of coastal fishing even as late as 1970 (in the Du Plessis report). When it began in South Africa in the 1940's most of the fishing was in fact done fairly close to the shore. Since then boats have had to go further to find catches; shoal fishing can now hardly be classed as "coastal fishing."

for the whole South African fishing industry was more than 1 130 000 tons, and valued at more than R70 000 000. (The ^{prawn} catch has grown greatly since 1970).

(b) Similarly, the total catch of perlemoen was less than 400 tons in 1970, and valued at about R65 000. Figures for oysters for that year are not available, but they certainly are of little importance when set against the total value of the industry's products.

(c) Tuna fishing was thought to be on the brink of promising developments in the early 1960's; but the expected developments did not occur. In 1970 the tuna catch was said to be "insignificant" and was valued at only R5 000.

(d) The exploitation of seals, guano, and seaweed is not only a small-scale activity, when compared with other forms of fishing; the activity is unlike other forms of fishing, and will therefore not be considered here.

(e) The position of whaling is rather different. The total value of whale products in 1970 was in the neighbourhood of R2 000 000, which was not insignificant, though certainly only a small part of the product of the whole fishing industry. But whaling was carried out from only one shore-based establishment, at Durban, and was geographically far removed from the main centres of the South African fishing industry. Its techniques, and its products, differ from those of any other branch of the industry. It would not be helpful to consider whaling in this survey.

The activities that remain for consideration are therefore hand-line fishing, coastal trawling for soles, etc., rock lobster fishing, ocean trawling for hake etc., and shoal fishing for pilchard, etc. It will be well, before looking at their history, to indicate the nature and the importance of each of these branches of the fishing industry, as they exist today.

Hand-line fishing, though of diminishing importance in the fishing industry, is still carried out by many small-scale concerns along the coast.* Hand-line fishermen are often poor; they have no organised institutions to represent them as a body; statistics on their activities are not satisfactory. They use many different types of boats, often small ones, sometimes dangerous. Generally they confine their fishing to the coast, but some of the larger boats go out for 30 miles, and even quite small boats will fish up to ten miles from shore. Snoek is probably the most valuable single product of the hand-line fisheries; but shark, kabeljou, geelbek and many other species are also caught. In 1970 the total catch of hand-line fishermen was estimated to be 20 000 tons and was valued at R1 500 000.

Coastal trawling for soles and other demersal (bottom-dwelling) fish takes place on the Agulhas Bank, on the West Coast bank (near Dassen Island) and off Walvis Bay. About 90% of the catch is caught within 12 miles of shore. Trawling consists essentially of dragging a large net, shaped in the form of an open-ended sack, across or just over the sea-bed. In the old form of "beam trawl" the neck of the sack was kept open by means of a beam which held the sides apart. In the more modern "otter trawl" the neck of the sack is kept open by two "otter boards", flat pieces of wood about the size of doors, which are attached to the net in such a way that the pressure of the water, as they are dragged through it, keeps them apart.

In 1970 about 70 boats were engaged in coastal trawling; total catch was 2 200 tons, valued at more than R1 million. Some coastal trawlers are owned by individuals, others by coastal

* The name "hand-line fishermen" is perhaps somewhat misleading, since many of these fishermen use nets as well, often beach-hauled seines. The name "hand-line fishermen" is best understood as referring to small groups or individuals whose fishing is usually carried out from small boats close inshore.

trawling companies. In either event the product is sold through the marketing organisations of the big ocean trawling companies.

The basis of the rock lobster industry is the Cape rock lobster (*Jasus lalandii*), which is found in concentrations off the West coast of South Africa and South West Africa. The rock lobster lives generally in shallow water, but the fact that it prefers rocky areas or areas of sea-bamboo makes the use of trawl-nets impossible for the catching of rock lobster. It is therefore caught by means of ring-nets or traps. The ring-net is merely a net loosely fixed to a metal hoop. Suitably baited, it is lowered to the sea-bed. When it is pulled up, any rock lobster which may have been attracted to the bait fall into the net and are brought to the surface. The trap is a somewhat larger device; so that while the ring-net can be worked from a dinghy and hauled up by hand, the trap requires a larger boat equipped with winches.

Using these methods, more than 7 000 tons of rock lobster, valued to the fishermen at about R2 500 000, were caught in 1970. Of this, by far the larger part was exported. Frozen tails (of which 90% were exported to the United States of America) were sold for more than R10 000 000. The marketing side of the rock lobster industry is well organised; the catching side much less so; and many experts are disturbed by the number of immature rock lobster which are brought up by the traps or ring-nets, and which despite a certain toughness of constitution, may die even if thrown back into the sea.

Ocean trawling is mainly for hake (*Merluccius capensis*), also known as stockfish. Hake, voracious hunting fish related to cod, are found all round the coasts of Southern Africa, but generally beyond the 12-mile limit, and often up to 300 miles out; the biggest hake fishing grounds are

off the Cape West coast and off the coast of South West Africa. In 1970, some 93 000 tons of hake was caught by South African trawlers; the value of the catch was about R7 000 000. The value of other ocean trawled fish was R1 800 000. The nets used for ocean trawling are larger than those used for coastal trawling, and the method is slightly different, since the nets are generally trawled at a little distance above the sea bottom. In 1970, there were about 60 registered South African ocean trawlers. The total value of the fleet was then estimated at R20 000 000; the boats were of many different types, some old, some modern. A few were fitted with quick-freezing facilities.

Ocean trawling in South Africa was controlled in 1970 by three big firms - Irvin and Johnson, with 44 trawlers; Sea Harvest Corporation, (jointly owned by Pescanova, a large Spanish fishing company, Southern Sea Fishing Enterprises Ltd., and Imperial Cold Storage) with 12 trawlers; and Amalgamated Fisheries, (a wholly owned subsidiary of an English parent company), with four trawlers. The catch was mostly sold on the home market, and was worked into a variety of packagings. Only Irvin and Johnson had their own marketing organisation. The other two companies distributed through agents.

The purse-seine net method of fishing was only introduced into South Africa on a large scale after the Second World War. The object is to surround the fish with a ring of nets which are drawn closer until the fish are so closely packed that they can be scooped up or pumped into the ship. This technique can only be used for fish that swim close to the surface. In South Africa the main species caught in this way are pilchard, anchovy, maasbanker, and mackerel. The fish are found in great shoals all along the west and south coasts of Southern Africa, from Cape Frio to Mossel Bay and beyond.

Purse-seine net fishing, or shoal fishing, is now the biggest single branch of the South African fishing industry. In 1970 there were some 240 "pilchard boats", with a book value of R37 000 000. Many of these boats were expensive, modern, and efficient. The catch in 1970 was more than 1 million tons, and was sold for about R13 000 000. The fish was either tinned, or made into fishmeal or fish-oil. The processing was carried out at some 20 factories (total value R28 000 000); two factory ships (total value R9 000 000) were also used. The products of this branch of the industry in 1970 were:

236 000 tons of fishmeal, valued at R25 000 000;

66 000 tons of fish oil, valued at R 8 000 000;

and tinned pilchards to the value of R12 000 000.

The total value of production was therefore R45 000 000.

The table on the next page gives in summarised form the information about the main branches of the fishing industry which has been included in the preceding paragraphs. All the figures have been extracted from the Du Plessis report.

TYPE OF FISHING	FISH CAUGHT	WHERE CAUGHT	FISHING FLEET	CATCH 1970	VALUE OF CATCH	PRODUCT 1970	VALUE OF PRODUCT
HANDLINE FISHING	Snoek and others	All along the coast	Many boats often small	25000 tons (snoek 5000)	R3-5m, snoek R2m	As for catch	
COASTAL TRAWLING	Soles etc	Coastal banks	70 boats value R1m	2000 tons	More than R1m	As for catch	
ROCK LOBSTER FISHING	Cape Rock Lobster	Off the west coast	Dinghies and larger boats	7000 tons	R2-5m	Frozen tails	More than R10m
OCEAN TRAWLING	Stock-fish and others	Up to 300 miles off W.coast	60 boats value R20m	$\pm$ 100000 tons	$\pm$ R9m	As for catch	
SHOAL FISHING	Pilchard Anchovy Maasbanker Mackerel	Along W. coast	240 boats val.R37m & factory ships	More than 1m tons	R13m	Tinned fish, f/meal f/oil.	R45m

3. The Periods of South African Fishing.

The story of fishing in South Africa, from the landing of Van Riebeeck to the end of the Second World War, may conveniently be divided into five periods:

- (i) The establishment of a fishing community at the Cape, 1652 - 1806.
- (ii) The growth of hand-line fishing from 1806.
- (iii) The growth of trawling from 1875.
- (iv) The establishment of rock lobster fishing from 1900.
- (v) The growth of shoal fishing from 1940.

These are the divisions used in the Du Plessis report.

The date 1806 is perhaps somewhat artificial since although it marks the beginning of permanent British occupation of the Cape, it is of no particular significance to fishing. It is helpful, however, to distinguish between the earlier, more generalised types of fishing, and later periods in which more specialised types of fishing began to appear; and 1806 is as good a date as any to start making this distinction. "Hand-line fishing" is taken to include not only the fishermen who use hand-lines, but also all those small-scale fishing enterprises which used to be found round the South African coast - and to some extent still are - and which use simple equipment from open boats operating close inshore to supply a market which is mainly local. Further, it should be borne in mind - indeed it is obvious from what has already been written - that the successive periods are not in any way exclusive. The growth of trawling from the 1870's did not mean that hand-line fishing came to an end; the growth of shoal fishing from 1940 did not prevent trawling from continuing; each successive type of fishing was overlaid on the previous one, but did not displace it.

4. The Establishment of a Fishing Community at the Cape.

Although the aim of the Dutch East India Company in establishing a settlement at the Cape was to supply passing ships with fresh provisions, the Company was more interested in fresh vegetables than in fresh fish.²³ Van Riebeeck from the earliest days of the settlement encouraged fishing to supplement the scanty rations of his garrison. He also attempted to start the export of whale oil and sealskins, though his efforts in these directions met with little encouragement either from India or from Holland.²⁴ Nor were the first "vryburgers" encouraged to expend their energies on fishing; the company policy was opposed to private initiative in any event; and in particular it was felt that the "vryburgers" should not engage in any occupations that would distract them from their main task of agriculture.

Thus Van Riebeeck's diary of February 21st, 1657, contains the following entry regarding the vryburgers who were permitted to farm at Groeneveldt (on what is now the Liesbeeck): "They may also fish in the rivers with angling rods, nets, or other equipment - whichever they prefer - but at first not for the purpose of selling, but only to get as much as they require for themselves, so that agriculture may not suffer, which is the company's main concern..."²⁵

However, fish was needed to feed the local population, and later, as the "vryburgers" won more freedom, they were able to catch and sell fish. From 1670 Malay slaves began to arrive from the East; many of them were already expert fishermen.* By the end of the seventeenth century, therefore, the tradition of a Coloured fishing community was already being started. Its growth was hampered by the small market;

* As slaves, they were allowed to fish on Sundays; some slaves were employed by their masters as fishermen; and slaves who won their freedom often set up as fishermen on their own account. 26

in 1706 there were hardly more than a couple of thousand people - including the garrison, convicts, and slaves - who were available to eat fish. Nevertheless, Peter Kolb, writing in 1705, could paint quite a lively picture of coastal fishermen at work.²⁷

"The Hottentots, in every kind of fishing, out-do all the Europeans about the Cape. They know not that there was ever time when their ancestors had not some art of fishing. They fish both in the sea and in rivers. Many of 'em are fishermen by profession and maintain their families by the trade. They take fish by the Angle, the net, the spear, or pointed rod, and by groping and tickling. At the angle they are very expert; and know the best baits for most sorts of fish. Before they became acquainted with Europeans, their hooks for angling were crooked bits of their own iron. But now they are pretty well provided with European fish-hooks. The Europeans at the Cape own readily that the Hottentots cast and draw a net with much more dexterity than they

"The Hottentots swim from the shore to the rocks, and from the rocks they swim, loaded with fish, back to the shore. And they are the best and boldest swimmers of all the people I ever saw or heard of. But their manner of swimming is extremely surprising, and I know not that they are followed in it by any nation in the world. They swim erect, their necks quite out of the water, as are likewise their arms, which they extend upwards and with which they balance themselves. But how they paddle with their legs I could never learn. They look when they are swimming, as if they are walking upon firm ground. And (which is further a matter of surprise) they swim at a prodigious rate. In raging seas, running mountains high, they fright themselves with no apprehensions of danger; but, on the contrary, swim or rather dance forward with the greatest cheerfulness and security; rising and falling with the waves like so many pieces of cork."

Peter Kolb's account is not, perhaps, to be taken seriously. In any event it is clear that the "Hottentot" fishermen, whatever their ability as swimmers, were not at this time the only suppliers of fish at the Cape. Thus Simon van der Stel, when he had retired into private life, had a five-year contract to supply fish to the Company - a contract which he shared with Johannes Phijffer.²⁸

As the settlement spread, new groups of fishermen appeared. But few succeeded in making a good living as fishermen; company regulations and the smallness of the market defeated them. By 1795 there were, perhaps, 200 fishermen at the Cape.²⁹ Fishing was more or less confined to Table Bay and occasionally False Bay.

5. The Growth of Handline Fishing from 1806.

NB
When the British occupied the Cape at the end of the eighteenth century, they removed the Dutch East India Company's legal restrictions on trade, including the restrictions on fishing.³⁰ But the market was too small for these relaxations to lead to any marked increase in the number of fishermen. By 1830, indeed, the number of fishermen seems to have been no greater than it was when the British first arrived.³¹ It was not until the discovery of diamonds in the 1860's and gold in the 1880's, and the building of railways to exploit these discoveries, that the industry had an opportunity to expand. The number of hand-line fishermen did grow; so did the quantity of fish they caught; their methods, on the other hand, changed little.

Thus in 1895 a writer gave the following account of hand-line fishermen at the Cape:³²

"All along the coast we find men who make a precarious living by the most primitive ways of catching fish and gathering oysters and other shellfish. Their occupation has made them most observing regarding the ocean's products....

"There are only three well-established fishing centres in the colony, viz. Cape Town, Port Elizabeth and East London....

"The usual way of fishing all round the coast is line-fishing, from the boat at more or less distance from the shore; and most of the fish supplying our markets for fresh consumption are produced by this means. Another method of securing fish is with the drag-net. The operations in this case are always carried out from the shore, and a most mixed batch of fish is brought to land, harders, springers, etc., being mostly caught in this way. This mode of catching is most destructive to spawn and small fry of fish.....

"The present stock of fishermen are Malays or Bastard Natives, with here and there a sprinkling of Europeans; and the methods employed by these are precisely the same as those used by the first fishermen introduced by the Dutch East India Company."

The Fisheries Committee of 1892³³ obtained some figures for the fishing industry at the Colony. There were, it said, 296 fishing boats in use along the coast between the Clanwilliam area and Port Elizabeth; these were manned by 1 366 fishermen, of whom 141 were White.

"The largest fishing station under one control is that at St. Helena Bay, where from 50 to 60 boats and from 600 to 700 men are employed, of whom about 240 go out in the boats; at Cape Town the number of boats is about 100 and is gradually increasing to meet the demand. At Kalk Bay 17 are in use. The other fishing stations are of less importance.....

"In addition to supplying the local markets, and the export trade with Mauritius, the following quantities of fish are

despatched by rail from Cape Town and Port Elizabeth to the interior:

"From Kalk Bay, about 36 tons of fresh fish per month to Bloemfontein and Kimberley.

"From Cape Town, six to twelve tons daily of salted fish, mostly to Paarl, Worcester, Kimberley, and Bloemfontein, besides small quantities of fresh fish.

"From Port Elizabeth, about six tons a month of fresh fish to Kimberley, Beaconsfield, and Bloemfontein.

"These figures do not represent a large industry, partly owing to the want of a market. A witness remarked: 'If the supply is small, the fish command a good price, but as soon as there is a good supply they fetch nothing.'"

To complete the picture of the hand-line fishermen of the 1890's, it might be added that they do not appear to have been skilled or careful in the handling of the fish once they had caught it; and this is an accusation that has been made against them also in later reports.

The report of 1895³⁴ says: "The most delicately flavoured fish is not exempt from the general custom of being thrown into the bottom of the boat to soak in bilge water and blood for half a day until landed, when it is thrown anyhow on to the dirty beach, handled and re-handled at will, and finally half-baked on a dirty cement floor, in wind, sun, and dust, until sold; and, as a rule, smoked and cured fish is got up in the most crude and slovenly manner..."

This style of fishing continued through the early decades of the twentieth century. At Union, the responsibility for the protection of fish was given to the Provincial authorities; and it was not until the late 1920's that the Union government began to take an interest in the

development of the fishing industry. By the middle 1930's a report stated: "As in the old days fishing was carried out near the coast, so it is done today, with little alteration except that now motor boats are used too; and numerous Whites and Coloureds find their sole livelihood therein."³⁵ In fact, at this time, about nine-tenths of South African fishermen were engaged in this coastal fishing. But they caught less than half the fish landed at South African ports. These unorganised, scattered communities, using primitive fishing methods (less than 10 per cent of their boats had motors in the thirties) were far less productive than they would have been if they could have used the new methods of trawling that had been developing since the end of the nineteenth century.

6. The Growth of Trawling from 1875.

It was the steam engine which made possible the great development of the fishing industry which took place in South Africa at the end of the nineteenth century and the beginning of the twentieth. The steam engine had a two-fold effect: it increased the catching power of fishermen, and it increased the size of the market. Put into a boat, the steam engine allowed much larger catches to be brought ashore; it was not merely that the steam trawler could draw the trawl-net more easily over the fishing ground than could a sailing vessel; the steam trawler was not dependent on favourable winds to get it to port before its perishable catch began to deteriorate; it could therefore fish further from its port. And put onto wheels, the steam engine could carry the fish quickly inland; it made a much bigger market available in which to dispose of the larger quantities it caught.

Probably the earliest steam trawlerman in South Africa was Mr J. Searle, of Port Elizabeth, who fitted trawl nets to a steam tug and made a small profit by supplying soles and other fish from the Agulhas Bank to the local market.³⁶

This was in the 1880's. About the same time, attempts to trawl with a sailing vessel based on Cape Town were not successful - further evidence of the superiority of steam for this purpose.

Perhaps it was these private ventures that woke those in authority to the possibilities of enlarging the fishing industry. At any rate, there were two Cape Government enquiries into the fishing industry during the 1890's; and the upshot of the second one, which urged scientific research into fishing potentialities, was the appointment, in 1896, of Dr J.D.F. Gilchrist as South Africa's first marine biologist.³⁷ A year later a specially built research ship, the 176 ton "Pieter Faure", arrived and began a series of investigations on the Agulhas Bank, in which over 1 000 square miles were examined and charted.³⁸

The research work of the "Pieter Faure" attracted the attention of the large British fishing concern run by Richard Irvin, who had recently converted his fishing fleet to steam. As a result, George Irvin, Richard Irvin's son, was sent to Cape Town to investigate the possibilities. He reported favourably; and before long had started a small trawling business based on Cape Town. He found no difficulty in catching fish; selling them was another matter. The market was small and easily glutted; and the train service to Johannesburg was too slow to get his fish to Johannesburg in good condition; it was not until 1905 that the railway could be persuaded to send fish by fast goods train to Johannesburg. Once it had begun to do so, Irvin was able to build up an effective marketing organisation.

Meanwhile, another fishing pioneer, Charles Ocean Johnson, had come to South Africa from Sweden with a small steam trawler. Unable to compete against Irvin in Cape Town, he moved to Durban, though retaining some interests at

the Cape. In 1910 Irvin and Johnson decided to amalgamate. They then had four trawlers, together with a cooling shed and a smokery at Cape Town. During the following years, they steadily built up their business, and eliminated or bought out competitors. George Irvin has described how they did this:³⁹

"..... I came to South Africa (in 1902) with two up-to-date trawlers. I had previously paid a short visit and gone carefully into the records of the Government experimental trawler, the "Pieter Faure". About a dozen fishing concerns were then working along the coast either with trawlers or steam line boats or smaller craft. The condition of the industry was bad and gradually became worse, so that heavy losses were incurred.... There was no order or control of distribution, and when the weather was fine along the coast, all the ports railed their surplus catches to Johannesburg, causing, every now and again, severe gluts with corresponding financial losses... My own firm lost three-quarters of their capital within two years, and my people in England strongly advocated closing down while we had sufficient funds to pay our trade liabilities.

"Johnson and I then came together because I had built up a considerable sales organisation and had lost a trawler, so that we had not sufficient regularity of supplies, while Johnson had more than sufficient catching power for his requirements.

"Shortly after this one of the biggest fishing concerns went into liquidation and offered us their assets. Johnson and I felt if we could take same over, that together with our own catches we would have about 50% of the total fish supplies, which might be sufficient to enable us at least partially to regulate supplies and put the industry, generally, on a better footing. We had by then both realised that unless distribution could be regulated the industry was doomed.....

"The success of the scheme was uncertain, as, although we were convinced we could regulate our own catches, our competitors, handling altogether probably an equal quantity, might easily have nullified our efforts by continuing the old haphazard practices. Luckily for us, one or two of our remaining competitors saw the wisdom of the move and assisted us in the early stages and later, when the advantages of the scheme became apparent, they co-operated wholeheartedly with us.

"Shortly, our plan was to send up-country all the East London fish not required for coastal sales, and make up the balance of our up-country requirements from the fish caught at Cape Town. Any surplus would thus occur at Cape Town, where we organised facilities for cold-storing, salting, and curing fish, for the latter of which there was a market in Cape Town and the Western Province....

"By this time we had stopped losses and begun to make moderate profits, without increasing normal prices, in fact, our Cape Town prices were not altered for ten years at least. That our prices were not high is proved by the fact that our competitors, although benefitting equally with us in the arrangements made, were eventually not very successful, and, with the exception of some Durban companies, they all subsequently sold their businesses to us at the book value of their then remaining assets.....

"We had established a system of distribution in this country which was much superior to that of Great Britain or to any other country with which I have been able to make comparisons. At no stage was our fish exposed until it was delivered to the fishmonger for sale, generally the same day, and the interference and cost of middlemen and speculators was altogether avoided. The above procedure allowed us to transport fish to Rhodesia and other centres, which would not have been possible with the methods

employed in Britain and other older countries.....
Incidentally, our method of controlling and distributing supplies, which I believe is unique, is peculiarly difficult to operate because one experiences daily variations in catches, whereas with maize, wheat and butter, where control has been tried, the supply, broadly speaking, only varies monthly or seasonally."

By these methods during the first forty years of this century the firm of Irvin and Johnson gradually built up an overshadowing position in the trawling industry. In ocean trawling, their control was virtually complete; in coastal trawling there were still independent trawlers, but their catches, almost without exception, were sold to Irvin and Johnson. According to the Board of Trade and Industries, the firm was by the early 1930's producing at least half of all the fish landed in South Africa.⁴⁰ There were - not unnaturally - complaints that the firm was using its strong position, and especially its control of distribution, in a monopolistic manner. It seems, however, that the firm exercised its monopoly powers in a not unreasonable way. It would allow clients to buy elsewhere small quantities which it could not itself immediately supply. But it was alleged that a client who bought too much from independent suppliers might find himself threatened with a refusal by Irvin and Johnson to supply him. Since Irvin and Johnson was the chief, and only dependable, source of supply, this was a threat that the fish merchant could not ignore.⁴¹ But Irvin and Johnson's policy, as explained, rested essentially on controlled marketing. This degree of monopoly was - it is reasonable to accept - the reason that in the late 1930's the South African trawling industry was both profitable and efficient, in marked contrast to the poverty-stricken condition of the hand-line fishermen.

7. The Establishment of Rock Lobster Fishing.

The rock lobster industry is based upon the Cape rock lobster (*Jasus lalandii*), popularly known as the crayfish. It is found all along the west coast of South Africa and South West Africa, not evenly spread, but concentrated, and often thickly concentrated, in areas where local conditions are suitable to its growth. It is a bottom dweller; it is found only in shallow water, and prefers rocky bottoms or areas of sea bamboo. Two other varieties of rock lobster, besides *Jasus lalandii*, are found off the South African coast; but they are of little economic importance.

Gastronomically, the rock lobster has had a somewhat curious history. A hundred years ago the White people of the Cape regarded it as useful for bait and as suitable food for Coloured farm labourers;⁴² they did not regard it as a delicacy, as so many do today. The industry was built up, therefore, not on local demand, but on its export overseas as a luxury item. The luxury nature of its product has been both an advantage and a disadvantage to the industry; an advantage, because it has enabled exporters to get high prices; a disadvantage, because a luxury market is often an unstable market, liable to sudden changes, which have, in fact, more than once caused grave crises in the industry.

It is believed that John X. Merriman was the first man to attempt the export of canned rock lobster, in 1874.⁴³ He engaged in canning a number of products, of which rock lobster was one. But, probably because he found he could not combine these business interests with his political career, he soon sold the business. His successor was successful enough on the technical side to win a bronze medal at the exhibition in Philadelphia in 1876; in other ways he was less successful, and the business collapsed.

Renewed attempts were made to start the export of rock lobster in the early 1890's. France was the market chiefly

aimed at. But the methods used were not technically satisfactory, the product was poor and variable, and therefore hard to sell. When French prices fell, the export market collapsed, and there was little activity for several years.

It soon revived. In 1902 a rock lobster canning factory was built at Saldanha Bay, to be followed shortly afterwards by factories at Mout Bay and Woodstock. In 1904 rock lobster to the value of more than £5 000 were exported, chiefly to France, but also some to the ~~South African Republic~~ ^{Transvaal Colony}. In the years that followed, rock lobster prices rose, new factories were opened, and the quantities exported increased. In 1909 the exports of canned fish from the Cape (most of it was rock lobster) was over 800 000 lb in weight and valued at more than £20 000.⁴⁴ By 1913 there were fifteen factories canning rock lobster.

The decade of the twenties was one of varied fortunes for the rock lobster industry, but on the whole was a period of consolidation and growth. Setbacks included the heavy fall in value of the French franc during the 1920's, which reduced the prices paid to South African exporters; and signs that the rock lobster were becoming scarcer. To help deal with this "over-fishing" problem, the rock lobster canners formed themselves in 1928 into the "Crayfish Cannery Association", of which the chief aim was to restrict production by means of a quota, thus, it was hoped, both preserving the rock lobster and preventing further falls in prices. But despite these efforts prices continued to fall; so did the number of factories (from 15 in 1920 to 11 in 1930), the number of people employed, and the total wage bill. On the other hand, the quantity produced increased, from about 4 million lb in 1922 to about 4.6 million lb in 1932; and South West Africa, which had produced only 97 000 lb in 1922, was producing 2.4 million lb in 1932. Despite falling prices, figures of this nature meant that the total income earned by the industry during this decade increased.

In 1930 the export of frozen tails began; these exports increased rapidly; in 1933 more than 3 million lb, valued at £150 000, were exported.⁴⁵ The demand from France was growing, and for a few years the industry expanded. But in the early 30's it suffered a heavy setback when France first banned and then put a quota on rock lobster imports, which greatly reduced South Africa's export market. A natural result was a search for new markets; and a new one - the United States - was discovered. An investigation into the United States market had been made long before - in 1909⁴⁶ - and with discouraging results. But in 1936, for the first time, refrigerated cargo space direct to New York became available. There were difficulties over quality. The New York Food and Drug Administration announced that it was not satisfied with South African rock lobster, and was considering banning it. The South African government introduced a law for the inspection of rock lobster for export (Act 9 of 1940), which, it was hoped, would allay the American fears. However by this time the outbreak of war had completely altered the situation. South Africa had lost her biggest market in France; export to America became virtually impossible; and the export industry in rock lobster would have collapsed entirely had it not been that Britain was prepared to accept a certain amount of tinned fish.⁴⁷

Thus by 1940 the potential of rock lobster for export had been clearly demonstrated; markets had been found, if not yet fully exploited; technical problems of canning and inspection had been overcome. But the war had thrown export arrangements into disarray: the trade would have to be built up anew once the war was over.

8. The Early Development of Shoal Fishing.

The existence of large numbers of pelagic fish suitable for canning had long been known at the Cape. So had the methods for catching them. In 1889 an American schooner, the Alice, had visited Cape Town, and had caught large quantities of

fish with a purse-seine net. The colonists had seen this event not as an opportunity, but as a warning. Such wholesale methods of fish catching must quickly deplete the stock, it was thought; and a law forbidding purse-seine fishing was hurried through the Cape Parliament.⁴⁸ In 1893 this law was repealed;⁴⁹ but it was to be nearly half a century before purse-seine fishing started again.

One of the factors that encouraged South African entrepreneurs to consider exploiting the shoals of pilchard, maasbankers, mackerel and anchovy off the west coast was the growth of the purse-seine fishing industry on the west coast of the United States. Some industrialists in the 1930's did investigate whether the rather similar conditions off the west coast of Africa could not be exploited in the same way. But it seemed then that the rather limited local market (already flooded with Norwegian and Japanese canned fish) would not offer sufficient opportunities of profit from this low-priced commodity.⁵⁰

The start of the fishmeal industry was another encouraging factor. In the early 1930's, experiments at the Stellenbosch-Elzenburg College of Agriculture had shown that there would be a demand for stock feed made from fishmeal, and that this could become a valuable aid to South African agriculture.⁵¹ By 1934 four fishmeal factories were in operation: of these, three (one at Cape Town and two at Lambert's Bay) made fishmeal from the refuse of rock lobster canneries, while one, at Mossel Bay, used small sharks and fish refuse. (The investigators at Elzenburg had also considered making fertiliser from fishmeal, but had concluded that the product would be too expensive to make production worthwhile).

It was the difficulties of rock lobster canners in the 1930's that finally started small-scale canning of shoal fish on the west coast of the Cape Province. Quite apart from

the difficulties of marketing rock lobster, there began to be, about this time, a scarcity of rock lobster in the more heavily fished grounds at the southern end of the west coast. Some rock lobster canners were therefore ready to start canning other varieties of fish; pilchards were particularly suitable for this purpose. In addition, there were in South Africa at this time some former Italian fishermen, now naturalised South Africans, who had experience of purse-seine fishing in the Mediterranean. It was a group of these ex-Italians who made themselves lampara nets and supplied the former rock lobster canneries with pelagic fish.

A wider market became available as a result of the war that broke out in 1939. The Union government wanted tinned snoek, maasbanker, and mackerel as food for the armies; later pilchard was added to the list.⁵² In addition, Britain was also keen to import canned fish. At first canning was carried out in the rock lobster canneries; later, as demand grew, new factories were built, one at Laaiplek, and another at Velddrif. In 1943 the Minister of Agriculture appointed a committee to investigate fish canning; the committee reported in the same year that fish canning appeared to have considerable growth potential, and that the authorities should take steps to encourage this industry.⁵³

So by the early 1940's there was a nucleus of fishermen with experience in purse-seine fishing, there was growing experience in the techniques of fish canning, and there existed factories to process the food both into human food and into fishmeal. The industry was poised for further advance.

9. Early Research.

Scientific fishery research in South Africa may be said to have started with the appointment of Dr J.D.F. Gilchrist in 1895 as Marine Biologist at the Cape. Two years later the Cape Government bought the first South African research ship,

"Pieter Faure"; and from 1897 to 1904 the "Pieter Faure" was used to investigate the potential of the Agulhas Bank, of which it was reported that "it swarms with marketable fish." In fact, the "Pieter Faure" was able to prove the existence of marketable fish by making a profit on its research work: and this profit was used to establish a marine biological station and aquarium, opened at St. James in 1902.

But the depression of the early years of the 20th century put a damper on research, and in 1904 the marine survey work was discontinued, not to be re-started again until 1920, when, with a new survey ship, the "Pickle", Dr Gilchrist investigated the West Coast grounds around Dassen Island. Later private firms co-operated in this research, and valuable new trawling grounds were opened. Another aspect of fisheries research began in 1925 with the appointment of the Fishing Harbours Commission. The Commission examined fishing harbours, and between 1926 and 1928 issued a useful series of reports on them.

In 1929 the Division of Fisheries was established as part of the Department of Commerce and Industries. One of the division's tasks was fisheries research, and in fact practically all research work done between 1929 and 1944 was done by the Division of Fisheries (Dr C. von Bonde, then Director of Fisheries and Head of the Division of Fisheries, told the Select Committee that investigated the fishing industry in 1944 that practically all the fisheries research work done in South Africa from 1928 had been done under his control).⁵⁴

Most of this research work consisted of the investigation of new fishing grounds. In 1930 a new research ship, the 313-ton "Africana" was made available to the Division; but only for six months in each year. For the other six months,

despite the Director's protests, the "Africana" was used by the Department of Defence for hydrographic surveys. One important piece of research during this period that was not a survey of fishing grounds was the savings-trawl investigations carried out over the Agulhas Grounds.⁵⁵ These investigations showed that by correct regulation of mesh sizes it was possible to allow small fish to escape the trawl, with beneficial results to the fishery resource. These investigations led to the introduction of mesh regulations in the following year (1935), which, while initially opposed by commercial fishermen, was later accepted by them.⁵⁶

Perhaps it is worth adding a few words on early fishery statistics. From 1897, Dr Gilchrist began collecting figures of catches by inshore fishermen; but the figures were not complete, and no figures of trawled fish were obtained. Statistics continued to be collected in this way until 1929. (During the latter part of this period the figures were collected by the Provincial Administration). Up to this time, the figures collected were so incomplete as to be "almost valueless."⁵⁷ In 1929 the Division of Fisheries took over the collection of statistics; but lacking funds for the purpose, it too was unable to produce satisfactory statistics. The attempt to gather figures from inshore fishermen was given up in 1930; figures for trawled fish were obtained from Cape Town, Mossel Bay, Port Elizabeth, and East London. In addition to these trawl figures, there was a record of the non-trawled fish landed at the Cape Town fish market between 1932 and 1939. (It was kept by the market superintendent, Mr G.E.Greening). These were the only statistics that had been collected with any sort of regularity between Dr Gilchrist's appointment in 1895 and the establishment of the Fisheries Development Corporation in 1944.

In summary, it would be correct to say that by 1944 a good deal of research work had been done in the surveying of fishing grounds and the establishment of fishery potential. Beyond this, little had been accomplished. As the Director of Fisheries told the Select Committee in 1944, more research work in many directions was required.

10. Fish Distribution

The next five sections will consider certain aspects of the fishing industry as they existed in the decade before the establishment of the Fisheries Development Corporation in 1944. This section will deal with the distribution and marketing of fish.

 In every country methods of distribution must be influenced by geography, history, the customs of the people, and by other factors. In South Africa, the method of fishing, the type of port to which the fish is brought, the fish eating habits of the population, and the distribution of the population are all factors that influence the distribution of fish.

To look first at the method of fishing: large-scale fishing concerns, with boats that can go considerable distances to look for fish wherever they can be found, can ensure something like regularity of supply. The small coastal fisherman, on the other hand, cannot go far to look for fish; he is dependent on the fish coming to him, and when this does not happen, he can produce nothing. Therefore his production is irregular, influenced not only by the seasonal changes, but by day-to-day variations in the weather and in the availability of fish. It would be reasonable to expect that a distribution system that depends on a regular supply would differ from one that has to cope with an irregular supply.

To consider next the type of port at which the fish are landed: some are brought to large ports - Cape Town, Port Elizabeth, Durban - with cold storage facilities, available supplies of ice, and with rail connections to inland markets. Other fish are landed at small coastal villages, where there are no means of storing the fish - apart from the possibility of drying or salting them - and no rail links with the interior.

As to the fish eating habits of the population: it was estimated, in the 1930's, that South Africans ate, on the average, $4\frac{1}{2}$ lb. of fish per head per annum. This might be compared with per capita consumption in the United States of America (16 lb), the United Kingdom (41 lb), or Norway, admittedly a country with an unusually large consumption, (70 lb).⁵⁸ The comparatively low South African figure was due partly to the fact that the Bantu, making up slightly over two-thirds of the total population,* ate virtually no fish. As to the White population - whose average per capita consumption, it would seem, must have approximated to the United States average - they were scattered, often thinly, over a wide area; the greatest concentrations of White population tended to be in the mining and industrial areas of the interior, hundreds of miles from the nearest seaport.

Under these conditions, two quite distinct methods of wholesale distribution had grown up in South Africa. The first was that of the ocean trawling companies, controlled by Irvin and Johnson, and already described in the quotation from George Irvin's memorandum given in an earlier section. The essentials of this distribution system were: radio communication between the ports and the trawlers, enabling the shore establishments to know in advance what fish to expect, and to direct the trawler captains to a certain extent in what fish they were to catch; landing only at

* In 1936 there were 6 596 000 Bantu in a total population of 9 588 000.

the larger ports, principally Cape Town, Port Elizabeth, and East London; rail the catches from Port Elizabeth and East London directly inland, except for those fish needed to supply the local market; and using Cape Town, with its facilities for storing and preserving fish, as a "reserve" port, able to send large quantities when the other ports could supply little, but able to send small quantities and store the rest when the other ports could supply much. This distribution system also made use of fast goods trains, insulated trucks, and agents and storage facilities in the large inland centres.

NB The second system of wholesale distribution was that which had grown up to deal with the fish landed by small coastal fishermen. This was a much more haphazard affair. At the larger ports an assortment of buyers or potential buyers would wait at the quayside - middlemen with customers near or far, retailers, buyers for factories, hawkers. The fish were sold when landed for what they would fetch; it could happen that early arrivals would get good prices, while those who came later would find their fish hard to sell.⁵⁹ In the coastal villages, fishermen generally sold their catches to owners of lorries, who would then distribute them locally.

There was a variety of retail distributors. In the Cape Peninsula, about half the fish sold were sold by hawkers. In Durban, fish was sold direct to the public at two municipal markets.⁶⁰ Everywhere, fish were sold by fishmongers, by fish and chip shops, sometimes by butchers; hotels, boarding houses, and hospitals sometimes

bought directly from the wholesalers.*

Officials of the Department of Commerce and Industries who investigated the distribution of fish in 1935 came to the conclusion that in general there were no more than two middlemen between the producer and consumer; and commented that, considering the complexity of fish distribution, this could not be considered excessive. There were, however, complaints about the system of fish distribution; the nature of these complaints, and the extent to which they were justified, will be considered in a later section.

11. Fish Prices.

It is far from easy to make a satisfactory estimate of fish prices in the decade before the establishment of the Fisheries Development Corporation. There are several reasons for this. Fish is not a homogeneous product; different varieties of fish are sold for different prices; and there are variations within the same variety - in size and in condition. These variations are difficult to quantify. Also, fish, as a highly perishable product of often irregular production, is subject to variations in price following local and temporary changes in ^{supply} ~~demand~~. Therefore the very nature of the product and the conditions of its sale make it difficult to arrive at a fair average price.

* Dr H.M. Robertson adds this note on fish distribution in the Cape in the 1930's:

"At this date fish and chip shops were very sparse. I remember noticing and remarking on this myself on arrival in Cape Town in 1930. And I found that few as these were, they were ill-patronised, and that a number had started and had closed down again for lack of custom. The hawker's fish-carts, however, in the southern suburbs of Cape Town were remarkably efficient and distributed to the door (or rather to the street outside) with very moderate mark-ups. You just had to be content to let the fish-horn regulate your times of fish-purchases. Butchers did sometimes supply fish, but health regulations did not allow them to do so from the same premises as those from which the meat was sold."

But there is a further difficulty, based on human weakness. Much of the available evidence for fish prices in the 1930's and 1940's is based on evidence given by witnesses to commissions or committees which investigated the fishing industry. These witnesses were for the most part interested persons; some were fishermen, anxious to show that they received too little for their catches; others were middlemen, anxious to prove that they did not make undue profits; others represented consumers who were keen to see prices reduced. It is hardly suprising that there was a good deal of conflict of evidence, of which it is easy to give examples. For instance, Mr J.F. Stubbs, representing wholesale fish merchants at the Cape, told the Select Committee on the Fishing Industry Development Bill that the price of fish had not increased since before the war.⁶¹ (He was speaking in 1944). On the other hand, Dr.J. Wesley Forbes, representing the Coloured Advisory Council, told the same committee that fish had been "much cheaper" in pre-war days than it was in 1944, that the price had become so prohibitive that poorer people were unable to afford their usual supplies, and that if contrary evidence had been given to the committee he would disagree with it.⁶² Sometimes the discrepancies could take an amusing form. The same Mr J.F. Stubbs told the committee that a medium-sized rock lobster could not be sold for more than 6d, and that the low price of rock lobster was largely due to the fact that Afrikaans-speaking people would not eat it. A member of the committee put it to him that in fact lorry-loads of rock lobster were sold at the largely Afrikaans-speaking Strand at from 2/6d to 3/- each. Mr Stubbs replied: "I am not surprised, although I would like to say that I have a relation in the Strand by the name of Morkel and he does not like crawfish!"⁶³

So much for the difficulties of arriving at a reasonable estimate of fish prices. The board that investigated the fishing industry in 1935 did make an attempt to estimate fish prices at nineteen centres throughout South Africa.⁶⁴

Retail prices per lb varied widely - 4½d. in Mossel Bay, up to 10d. in Kimberley - but the general impression left by the figures was that fish sold at about 7d per lb. (And when fish prices were controlled during the war, 7d per lb was in fact the controlled retail price).

The board itself admitted that its figures were to be treated with caution. They referred to fish sold by dealers. They ignored the fish sold cheaply by hawkers to poor people. Equally, they ignored the more expensive fish, such as soles, which might fetch double the price charged for stockfish.

On the whole, the estimate made by the board in 1935 may be accepted as a fair one for the decade '34 - '44; it is certainly the best available; and the price controller's fixed retail price during the war years would tend to give it some support. But it is no more than a rough approximation; probably some fish was sold for very much less than 7d per lb; and certainly some was sold for very much more.

12. Condition of Labour.

There are a number of criteria by which the conditions of workers may be judged; two convenient ones are wage levels and housing standards; evidence on both these subjects was given to the committees which investigated the fishing industry in 1935, in 1939, and in 1944.

The 1935 report found that the trawling industry had fairly satisfactory pay scales, ranging from £9 a month for the lowest-paid deck-hand, to £26 a month for a skipper.⁶⁵ Earnings of other fishermen were more difficult to estimate, partly because their earnings were irregular and varied with their catches. In bad times, earnings could be £2 a month; in good times, £20. Coloured fishermen in rock

lobster and snook areas earned between £50 and £80 a year; White fishermen at Gansbaai earned between £75 and £130 a year; but this was exceptionally high for inshore fishermen. In general, the earnings of fishermen were described in the report as disturbingly low.

By 1944, when the Select Committee on the Fishing Industry Development Bill produced its report, it was generally considered that fishermen's earnings had considerably improved during the previous decade. Nevertheless, there was some conflicting evidence - or apparently conflicting evidence - as to what the earnings actually were. Mr H. Abao, of Irvin and Johnson, told the committee: "The fact is that most of the boat owners are actually prosperous, and that the earnings and living conditions of many fishermen compare favourably with those of workers in other industries, and farm labourers."⁶⁶

Mr Abao gave figures showing that trawler skippers could earn up to £983 a year (a figure which included food supplied and c.o.l. allowance), and trimmers - the lowest paid trawlermen - from £245 to £270. The earnings of line fishermen were substantially less: up to £506 for skippers, and between £91 and £120 for the lowest paid fishermen. Even though the line fishermen's earnings did not include food given to them, Mr Abao admitted they were low; but he added that it was their own fault, because "they do not put their backs into it."

Mr P.E. Rousseau of Marine Products Limited, an inshore fishing company operating six boats from Kalk Bay, told the committee: "Men on these inshore fishing boats are paid a minimum wage of £2-10s a week, plus food allowances, plus a bonus on catches. The skippers are paid a minimum of £6 a week plus a bonus on catches. These wages are paid whether the boats are at sea or not."⁶⁷ Mr Rousseau added that his men earned about £230 a year each, his skippers about £550.

Similar evidence was given by other witnesses who could be regarded as representing or sharing the management point of view. Mr C.H. Gaggins, of the South African Frozen Rock Lobster Packers' Association, said that rock lobster fishermen on the West Coast could earn from £25 to £30 a month if they were industrious, while the "lazy type" could earn £5 a month.⁶⁸ Mr C.H. Trautmann said Hout Bay fishermen could earn £20 in a good week of trek-netting, and over the eight month season averaged £4 a week. During the remainder of the year they could earn extra money fishing for rock lobster and snoeking. And a memorandum submitted by the Wholesale Fish Distributors claimed that "the average income of every fisherman in the (Cape) Peninsula is at least £5 per week throughout the year, (i.e. at least £260 per annum) plus the use of fish for consumption in their own households."⁶⁹

These figures were to a large extent supported by witnesses speaking on behalf of the fishermen. Thus Mr S.J. Levin, speaking for the fishing communities of Velddrift, Laaiplek and Dwarskersbosch, said: "The fishermen consider that they are today making a reasonable living. Average earnings of fishermen in this area for the past couple of years are estimated to have been between £150 and £200; skippers have earned more."⁷⁰ Mr F. Tallie, who accompanied Mr Levin, added that before the war fishermen had earned less, perhaps £100 instead of £150 a year; and since 1936 he thought that earnings might have increased about four times over. Coloured fishermen, he said, earned as much as White fishermen.

Even the representatives of the Trawler and Line Fishermen's Union, who maintained that fishermen were exploited, did not complain about their wages. Thus Mr E. Eggors, a deck-hand on an Irvin and Johnson trawler, said he earned 10/9d a day, though his monthly earnings depended on how

often he went out. "We do not complain about the actual wages, but we have excessive expenses in regard to gear." His specific complaint was that he had to buy a new pair of sea-boots, costing from 25/- to 30/- every week. Asked if he really bought 52 pairs of sea-boots a year, he replied: "Yes, on account of the inferior boots we get today. I have myself experienced the seams of the sea-boots bursting the first time I put them on."⁷¹

All this evidence on wages suggested that in the late 30's and early 40's fishermen were reasonably well off. But there was other evidence that suggested a rather different conclusion. In 1936 the Rev. A.D. Luckhoff, the Secretary for Poor Relief of the Dutch Reformed Church, investigated the incomes of European fishermen at Velddrift.* Mr Luckhoff found that although just over five per cent of the fishermen earned £150 a year or more, very nearly four-fifths (78.4%) earned £30 a year or less, and nearly two-fifths (37.5%) earned £15 a year or less.

Another witness to low earnings was the Rev. F.H. Gow, who told the Select Committee in 1944 that fishermen at Saldanha Bay, most of whom were catching for the canning factory there, could earn £80 in a good year, but less than half of that in a bad year. Mr Gow added that another unsatisfactory aspect, (although it is not strictly relevant to the question of wages) was that the fishermen worked for only nine months of the year;⁷² during the remaining three months idleness encouraged them to drink.

If we now turn from considering earnings as a criterion and consider instead housing, the evidence points to bad conditions rather than good. The 1944 Select Committee was told that at Saldanha Bay fishermen's houses were in bad condition and over-crowded; sanitation was poor, and there

* His conclusions are quoted by Mr J.C. Bodenstein of the Department of Social Welfare in an Appendix to the report of the Select Committee of 1944.

was no water supply; many people had to buy water at 3d for a paraffin tin of it. At Stumphose Bay the housing was described as "bad"; at the Strand fishermen lived in the slum area of the town; at Hawston most fishermen's houses were "dilapidated pondokkies"; at Port Nolloth every house occupied by a fisherman was "unfit for human habitation"; at Lambert's Bay the Village Management Board had constructed 64 sub-economic houses for fishermen, but it was estimated that 100 more would have to be built before the remaining pondokkies could be destroyed.

A memorandum submitted to the Select Committee of 1944 by the Department of Public Health reinforces the view that living conditions of fishermen were bad. The memorandum points out that coastal fishing villages had grown up near fishing grounds, without regard to land communications, water supplies, and similar amenities:

"As a rule, these villages are reached by sand tracks, and the resultant isolation has a disastrous effect on the feeding and housing, and through it on the health and industry of the inhabitants, leaving them, as we know them today, an indolent, improvident, and intemperate group of people.... Housing is as a rule primitive in design, and mainly consists of rough stone, lath, and plaster, or reed-walled shacks with thatched roofs. These houses are rarely proof against the elements which rage along our coasts, and are invariably badly lighted and ventilated as well as overcrowded. Food supplies are confined to those which can be gathered from the sea, with bread, maize, and rice as the starch supply; tinned foodstuffs providing an expensive variation. Poor soil and lack of water-supplies make the cultivation of vegetables impossible, and for the same reason neither cows nor goats are kept. The available foodstuffs are therefore only sufficient to satisfy the demands of hunger, but lack the essentials to promote health. Employment in the fishing industry is limited by the elements to about 100 days per year, thus leaving more than two-thirds of the year to

enforced idleness. This, together with the isolation previously referred to, is responsible for the self-satisfied indolence which has become a common characteristic of these people."⁷³

This evidence on the condition of labour in the fishing industry contains on the face of it certain contradictions. Most of the evidence on earnings suggests that fishermen were fairly well off, although there was some conflicting evidence to suggest that fishermen were poor. By contrast, the evidence on housing seemed to indicate that fishermen were living in very poor circumstances. Can these two lines of evidence be reconciled and summarised so as to produce some kind of coherent picture? The answer would seem to be that they can, provided it is borne in mind that the evidence itself had a considerable spread both in time and space. To consider first the spread in time: it seems that fishermen's earnings increased considerably between the mid-thirties and the mid-forties.* Therefore while we may accept the evidence of Mr Luckhoff on the low incomes of Velddrift fishermen in 1936, there is good reason to think their earnings were considerably greater by the mid-forties. (Mr Tallie thought four times greater). As to the spread in space: this simply means that the lack of homogeneity in the fishing industry was reflected by marked differences in the earnings of workers in different sections of it. Fishermen who worked for the trawling companies earned quite good wages; those who worked for crayfish or canning factories, or for inshore fishing enterprises with reasonably well-equipped, probably motorised, boats, were also relatively well off. But beyond this were the scattered coastal fishermen, sometimes hardly more than casual workers, sometimes

* See, for instance, the evidence of S.J. Levin and F. Tallie to the Select Committee in 1944, where it was stated that fishermen's earnings had increased, and that catches at Laai-plek were four times as big in 1944 as they had been in 1936. (S.C. 4-'44, paras. 878 - 887).

living in remote and isolated villages; these were often badly paid, badly housed, and badly fed. They were not the sort of people to give evidence before committees; they lived (according to the memorandum of Mr J.C. Bodenstein of the Department of Social Welfare) in "deplorable social and economic conditions" and in "abject poverty".⁷⁴

13. Capital Investment in the Fishing Industry.

The capital goods of the fishing industry would include harbour works, boats and boating equipment, factories producing canned fish, fishmeal, or fish oil, and the warehouses and refrigerated stores used in fish distribution. Perhaps one might even go further than this and consider the boat-building yards in which fishing boats were built, or the refrigerated trucks used by the South African railways to carry fish, as part of the capital equipment of the fishing industry. The difficulty with the last two is that boat-building yards can build boats other than fishing boats, and refrigerated trucks can carry products other than fish; and it is difficult to know how much of their value should be ascribed to the fishing industry.

A somewhat similar difficulty arises in regard to harbours. It might be possible to form an estimate of how much money had been spent on the building of harbours in South Africa between the landing of Van Riebeeck and the year 1935; but the sum, even if it could be reduced to 1935 prices, would not have very much meaning; nor would it be easy to decide how much of it should be regarded as capital investment in the fishing industry, and how much as investment in other forms of shipping. Still, even if no satisfactory figures can be given, it is necessary to say something about investment in harbours, because lack of harbour facilities has been an important factor - at times perhaps the most important factor - in holding back the development of the fishing industry; and because supervision of the expenditure

of funds allocated for fishing harbour development and maintenance has become one of the most important functions of the Fisheries Development Corporation (The allocation of these funds is a function of the Department of Industries and the Department of Finance of the Central Government. The Fisheries Development Corporation is paid by the Department of Industries for its supervisory services in this regard).

In the early 1930's, according to the report of the Board of Trade and Industries, fishing harbour facilities in South Africa were poor, except at some of the main ports; and the lack of harbour facilities was among the greatest obstacles to the development of the fishing industry. The Board considered that it was not only the existing harbours that needed to be developed; there was also need for the establishment of "refuge harbours" for boats caught by bad weather far from their home ports. The Board recommended that the government should spend between £500 000 and £1 million over the next ten years in the provision of better harbour facilities.⁷⁵

In fact, the government spent about £500 000 on improvements to fishing harbours over this period;⁷⁶ but this was far from enough to satisfy those engaged in the industry. In 1944, Mr H. Abao, a director of Irvin and Johnson, put the lack of "harbour facilities, low-level quays, power, water, and transport" at the head of a list of factors limiting the expansion of the fishing industry. And the South African Federated Chamber of Industries claimed, about the same time, that government attempts to improve the facilities of South Africa's fishing harbours so far had proved to be "feeble in the extreme."⁷⁷

A more direct way of estimating the amount of capital invested in the fishing industry at any given time would be to consider the number of fishing boats in use. Such figures

as are available need to be treated with some caution, partly because the figures themselves may not be accurate, but chiefly by reason of the fact that the size and cost of the boats are just as important, from the point of view of estimating capital invested, as the number of boats. For this reason it is useful to take into account also the estimated value of the boats; but in fact the estimates of value made at different times vary in a way that suggests that not too much reliance may be placed on them either.

In 1892 the committee that investigated the fishing industry reported that there were 296 boats operating round the coasts of the Cape Province; of these, 148 were operating from the Cape Town district.⁷⁸

Professor J.D.F. Gilchrist, the marine biologist appointed by the Cape Colonial Government in 1895, estimated that in 1899 the boats and gear engaged in the fishing industry in the Cape were valued at £13 000. A year later, there were seven trawlers and 361 sailing and rowing vessels operating off the Cape coast.⁷⁹

The Board of Trade and Industries that investigated the fishing industry in 1935 reported on the number of boats that had been engaged in fishing in 1931: there were 1 458 registered fishing boats, of which 1 134 were rowing or sailing boats (the rowing boats were used mainly for cray-fishing), 300 were motor boats, and 24 were steam-driven. Ninety per cent of the motor boats were under ten tons. The Board estimated the value of these boats at about £300 000, (The Board added that if the value of canning and fishmeal factories, cold stores, smokeries, and so on were also included, then the total capital investment in the fishing industry was in the neighbourhood of £1 000 000).⁸⁰

In 1940 the Director of Fisheries reported that the Department of Commerce and Industries had held a census of fishing boats. The census showed a total of 1 864 fishing boats operating from South African ports. Of these, 21 were steam boats, 458 motor boats, and 1 358 rowing or sailing boats. The steam-boats were valued at £206 594, the steam line-fishing boats at £34 622, motor boats at £212 902, and rowing and sailing boats at £16 701, making a total of £472 719. To this might be added £23 637 for fishing gear, according to the Department of Commerce and Industries. And in 1948 there were 2 219 fishing craft, valued at about £2 000 000.⁸¹ These were made up of 30 steam trawlers, 2 steam line-boats, 699 motor boats, 238 sailing and rowing boats, and 1 243 dinghies.

In addition to these figures, the reports of the Director of Fisheries give figures for the number of boats operating from Cape Town during certain years in the 1930's, and also estimates of their value. Thus in 1935 there were 302 inshore fishing boats operating from Cape Town, valued at a total of £83 400. (The boats include snoeking cutters, line-fishing boats, cray-fishing boats, dinghies, open fishing boats, and "cargo boats"; it is not clear what is intended by cargo boats, but since the 9 cargo boats were only valued at a total of £14 500 they could not have been very large boats, and certainly not coasting vessels). In 1936 the total number of boats had increased slightly - to 309 - but the valuation had increased considerably, to £120 900. In 1937 there were 279 boats valued at a total of £113 272; in 1938 215 boats valued at £119 730; and in 1939, 296 boats valued at £76 220.⁸² It will be noted from these figures that the number of boats varies sharply, and that there is little correlation between the number of boats and their valuation. A likely explanation of this is that the larger - and therefore more expensive boats - sometimes happened to be fishing from Cape Town when the count was made, and at other times had moved to other ports. If this is so, the figures would

not have much value in giving an indication of the total South African capital investment in fishing boats.

The Director of Fisheries also gives figures for the number of trawlers operating; and these are perhaps better indicators of capital investment, especially since some figures are given for the total number of trawlers working from all South African ports. The figure given for 1935 - twelve trawlers valued at £200 000 - refers to Cape Town only. But the report for 1936 comments that the expansion of deep-sea fishing had continued, that there was now a total of 23 trawlers operating from South African ports (of which 14 came from Cape Town), and that of these 23, more than half were more than 250 tons gross, and were fitted with echo sounders. The 1937 report contains no mention of the number of trawlers operating, but the report for 1938 says that a bigger trawling fleet - 25 trawlers - had brought in a record catch that year. Irvin and Johnson had bought two new trawlers, each of more than 300 tons gross; and the National Trawling and Fishing Co. were also believed to be ordering new boats. The report comments: "The year under review has therefore been one of considerable capital outlay in the deep-sea fisheries." The following year - 1939 - the government began commandeering trawlers for war purposes, and the war made any further investment in trawlers impossible.

If we now turn to consider factory construction as an indicator of capital investment, the evidence is even more scattered and unsatisfactory. Yet there seems little doubt that some building of factories and warehouses was going on even in the early thirties, soon after the depression years, and that development, in this sense, quickened later in the decade. Thus in 1933, the Silverman brothers, founders of the Saldanha Bay Canning Company, built a cold store at Saldanha Bay;⁸³ in 1934 a new rock lobster canning plant was built at Hondeklip Bay;⁸⁴ in 1937 the Lambert's Bay Canning Company built a new cold

store;⁸⁵ in the same year South Africa's first modern fishmeal factory started production at Cape Town docks;⁸⁶ and in the early 40's more than £40 000 was spent in establishing fish processing plants at the Berg River mouth.⁸⁷

These rather sketchy facts are supported by the evidence of those who were leading the industry at the time. Thus Andrew Ovenstone told the Select Committee on the fishing industry in 1944: "Prior to the war, the physical and economic obstacles to any considerable development in fish processing seemed almost insuperable, but during the war, when fundamental economic considerations have not weighed to the same extent, private enterprise has been quick to avail itself of its opportunities and development has been rapid."⁸⁸

Mr H. Abao, the managing director of Irvin and Johnson, told the committee that before the war his company and the National Trawling and Fishing Company had built up a considerable export business to Australia in cured fish. "We also established a canning factory to absorb surplus catches. That was just at the beginning of the war."⁸⁹

And Mr W.R. Skeeles, of the Association of Chambers of Commerce of South Africa, told the committee: "The fishing industry today is in a state of flux. There are large developments going on. Fish liver oil alone is a new development that has taken place. Facilities are cramped, to say the least, yet it has developed to a very considerable extent until it is now an important South African industry. I speak of the fish liver oil industry alone. I have been through Velddrift and Stumpnose and Paternoster and those places, and I found there is a considerable amount of competition between the different fishing interests. I found a canning factory going up at Velddrift by one interest and very closely watched by another which is considering putting up another factory within measurable distance..."⁹⁰

It is a pity that more complete figures are not available to give a clearer picture of the amount of capital investment that took place. But statistics on the fishing industry have been inadequate; and the lack of them about this time was a source of repeated complaints by the Director of Fisheries.⁹¹ So it is not surprising that when Dr J.G. van der Horst, then Chairman of the Board of Directors of the National Trawling and Fishing Company, was asked in 1944 whether he could tell the Select Committee how much, approximately, had been invested in the fishing industry, he replied: "No. I doubt whether you would get a complete return. I remember returns were submitted in respect of all fishing boats. This information is not incorporated in the census returns unless three or more persons are employed in a factory. I do not know to what extent the census gives a complete return."⁹²

A later witness, Mr H. Abao, managing director of Irvin and Johnson, was a little more specific. He mentioned that the Director of Fisheries had estimated the total investment in the fishing industry at £1 400 000 (of which boats represented £473 000 and fishing gear £23 000). Mr Abao thought the actual investment was more than this. He said the assets of his own company alone were £1 000 000. "That figure of £1 400 000 is definitely an under-estimate," he said.⁹³

The most revealing figures on capital growth at this time are those collected by Mr F.P. Spooner, then General Manager of the Fisheries Development Corporation.⁹⁴ He concluded that the total market value of shares held in the South African fishing industry in 1939 was £2 350 000; in 1944 this figure had risen to £3 430 000, and in 1947 to £10 000 000. No doubt only part of this increase was due to increased investment; the shares themselves increased in value too. It is perhaps worthwhile to give Mr Spooner's figures in more detail: (all figures in £000's).

	TRAWLING INDUSTRY		NON-TRAWLING INDUSTRY		TOTALS FOR WHOLE INDUSTRY	
YEAR	Subscrib- ed Capital & reserves	Market value	Subscrib- ed capital & reserves	Market value	Subscrib- ed capital & reserves	Market value
1939	950	1 575	725	775	1 675	2 350
1944	1 100	2 050	1 175	1 380	2 275	3 430
1947	1 550	3 150	3 765	6 950	5 315	10 100

These figures are of interest, not only because they show that considerable growth took place in the industry as a whole, but also because they indicate which section of the industry was growing fastest. The market value of shares in the trawling industry doubled between 1939 and 1947; but the market value of shares in the non-trawling sector increased almost nine times over. No doubt this was due to the very rapid growth of the pilchard and maasbanker fisheries.

How should this somewhat fragmentary evidence be summarised to give a picture of capital development in the fishing industry between 1934 and 1944? About £500 000 was spent on improvements to fishing harbours. The size of the fishing fleet grew, from 1 458 boats in 1934 to 2 219 in 1948 (comparable figures for 1944 are not available). The estimated value of the fishing fleet grew, from £300 000 in 1934 to £2 000 000 in 1948, (although some of this increased value must have been due to the general rise in prices). The value of fishing factories, cold stores, etc., was estimated at £300 000 in 1934; there is no comparable figure for 1944; but there is evidence that building was taking place, and it is clear that a larger fishing fleet would need increased shore establishments to process the catch. The evidence all suggests that in the decade before 1944 considerable capital development was taking place in the South African fishing industry.

14. Early Moves to Control the Fishing Industry.

It will be best to begin this section with a brief outline of the main conservation methods by which the authorities

may attempt to control the activities of commercial fishermen. They fall into seven groups:

(1) Limiting the catch. This may be done directly; in which event the authorities forbid any further fishing for the year once a designated weight of fish has been landed. Or it may be indirect; as in the case of South African rock lobster at present: there is no restriction on the number of rock lobster that may be landed, but there is a restriction on the number that may be exported.* This has a similar effect; the method chosen is a matter of administrative convenience.

(2) Limiting the exploiters. If only a few individuals or firms are allowed to fish, this may have the effect of limiting the catch. Of course, the firms might expand their fishing efforts. But equally, they might realise that increased fishing effort would not lead to increased profits, and so might agree amongst themselves to limit their catches.

(3) Limiting the capacity to exploit. This method might be combined with (2). If the number of exploiting firms, and the capacity of each firm to exploit, were limited, this would in effect amount to a limitation of the catch.

(4) Limiting the equipment and techniques of fishing. The most important example of this type of limitation is in the control of mesh sizes. Nets with large meshes allow small and immature fish to escape; this is one of the most used methods of control.

(5) Setting a minimum size for fish that can be legally caught. The aim of this is the same as (4) - to prevent immature fish being caught. It is, however, more difficult to enforce. It cannot be enforced at all with shoal-fish,

* There is, of course, control of who may sell rock lobster.

which are caught thousands at a time. With line-caught fish the limitation is at least theoretically enforceable; but by the time the fish has been hooked and hauled up, it is probably so badly injured that it is likely to die anyway; hence it hardly matters whether it is ~~caught~~^{kept} or thrown back into the sea.

(6) Limiting the catching season. This may be used as a method of limiting the total catch, or it may be regarded as a method of protecting the fish during the time when they are, for instance, spawning, or during times of the year when they have lost condition or are otherwise not at their best from the fishermen's point of view.

(7) Limiting catching areas. Essentially, this aims to provide the fish with sanctuaries in which they may breed without disturbance, and from which the fishing grounds may be re-stocked.

These then were the methods available to the authorities to control fishing. But in fact they were scarcely used before 1940. The Act of Union put the protection of fish - together with the protection of game - in the hands of the Provincial authorities. But with one important exception, to be noted later, the Provincial authorities hardly used their powers. By the end of the 1920's, the central government began to take an interest in the developing fishing industries, and in 1929 the Division of Fisheries was established. It was, however, only a research body; it had no administrative powers. As was pointed out by the Board of Trade and Industries in its 1935 report, no then existing authority was really responsible for the control of the fishing industry; hence there could be no satisfactory policy.

However, the Provincial authorities did take some steps to control fishing. In 1920 it was forbidden to catch rock lobster smaller than 4 inches in carapace length. The length

was reduced to $3\frac{1}{2}$ inches in 1933. In 1927 rock lobster sanctuaries were declared, and also closed seasons for rock lobster. The most important measures were the minimum mesh sizes imposed on the trawling industry by a series of proclamations in 1933, 1936, and 1937. The general aim of these regulations was explained by Dr J.M. Marchand of the Division of Fisheries, in an article published in 1934:⁹⁵

"There is no modern fishery method that plays a larger role in the decimation of a commercial fishery than intensive and unrestrained trawling..... The results of only a comparatively short period of fishing on a large scale by the trawl method are already becoming manifest in many parts of the world..... Fortunately by proper control it is possible to maintain the yield... experience has shown again and again that unless control relating to conservation of the fisheries is exercised by governmental authorities, the commercial fishermen and interests are the last to wake up to the realisation that they have crippled or destroyed their own livelihood. Proof of this peculiar lack of observation and foresight is to be found in the opposition to and denunciation of any protective fisheries legislation that may be promulgated."

The article goes on to describe savings-trawl experiments carried out on the Agulhas Bank, and attempts to convince commercial fishermen of the need to use larger mesh sizes. It was finally laid down - in Regulation No. 151 of 1937 - that Agulhas Bank trawlers should use nets of minimum mesh 3 inches, and trawlers for hake should use nets with a minimum mesh of 4 inches.

Whether or not the fishermen of the 1930's lacked foresight and denounced protective measures, there is no doubt that as the 40's approached they were becoming aware of dwindling fish resources. This is clearly shown in the evidence given to the Board of Trade and Industries in the mid-thirties.⁹⁶

There it was stated that whereas in earlier years a four-hour trawl on the Agulhas Bank had produced from six to ten baskets of soles, now a similar trawl only produced from two to four baskets. The same applied to stockfish. Trial trawls by the research ship "Africana" had brought up between 30% and 50% of immature fish; in commercial fishing, it was thought, the proportion of immature fish was even higher. (a growing proportion of immature fish is, of course, normally coupled with a falling catch per unit of effort). Also many coastal fishermen told the board that catches were falling. This evidence of fishermen cannot be supported by statistics, since the statistics then available were (in the Board's words) "insufficient and unsatisfactory". But the Board accepted the fishermen's evidence as correct; and there can hardly be a doubt that fishermen thought that catches were falling, and would accordingly be the more ready to accept some form of regulation designed to protect the fish stock. (Although, naturally enough, perhaps, the fishermen tended to blame the scarcity of fish on anything but their own activities: on sea-birds, seals, nets set in tidal rivers or lagoons, pollution, changes in currents, even the hunting of whales - it was claimed that whales had previously chased smaller fish towards the shore, now that there were fewer whales they no longer performed this "service").

The Board recommended that the central government should take a more active part in the control of the fishing industry, and that a Department of Fisheries should be created, to deal largely with research and the correlation of statistics, but having power also to deal with all other fishing matters of national importance. Under the Board's proposals, the Provincial authorities would have continued to enforce the fishery regulations; but the proposed division of functions is not absolutely clear.

Five years were to pass before the government acted on the Board's proposals; but when it did act, it went rather further than the Board had suggested. The Sea Fisheries Act of 1940 repealed the section of the South Africa Act which

vested protection of fish in the Provinces, and gave to the central government the legal responsibility for developing and administering policies for the control of the fishing industry. It gave the government the power to proclaim sanctuaries and closed seasons, to license fishing boats and factories, and to prohibit the dumping at sea of fish or fish offal.

These new powers produced only a few immediate results. The acts of 1940 to protect rock lobster were hardly more than repetitions of the regulations regarding carapace length and sanctuaries already promulgated by the Provincial authorities. Also, the period August to November was declared a closed season for snoek. Apart from this, little was done by the government about the fishing industry during the early 1940's. The war had begun; there were other things for the government to think about. However, by 1940 the legal basis for the control of the fishing industry had been laid; and some commercial fishermen had become at least partially aware of the need for some government action to protect their livelihood.

III. THE BILL OF 1944 : AIMS AND VIEWPOINTS.

1. The Demand for Action.

Action by elected parliaments sometimes take place as a result of pressure from officials or from leaders in society; but often too it reflects feelings or desires among ordinary members of the electorate. The question therefore arises: who wanted something done about the fishing industry in 1944, and why? It is in any event necessary to ask this question, since any attempt to estimate the "success" of the act of 1944 must to some extent depend upon what people at the time expected the act to give them, and how far they got what they wanted. This chapter therefore will be concerned with the hopes or desires of the people affected by or interested in the bill: the officials responsible for the fishing industry, the people engaged in the industry, experts in economics or public administration; and this particular section will concern itself with the feelings of the man in the street - or, more accurately, the housewife in the grocery shop - towards the fishing industry.

There is no reason to think that housewives in the 1930's and 1940's were particularly concerned about the price of fish. Letters to newspaper editors often give a clue to the state of public opinion; the files of the "Cape Times" between 1935 and 1945, do not appear to contain any letters from housewives protesting specifically about the high cost of fish. There are, however, certain reports which suggest some degree of dissatisfaction. Thus in 1938 Mr Madeley raised the question of high fish prices and alleged destruction of fish in the House of Assembly.⁹⁷ He said that Irvin and Johnson exercised a monopoly in the supply of fish and that the retailers were being compelled to keep up prices or to forego supplies. In Johannesburg there was a ruling price of 8d per lb for fish. It was possible to supply fish at 4d per lb and for everybody to make a profit, said Mr Madeley. The fishermen themselves did not profit from

the monopoly exercised by Irvin and Johnson, and earned "very minimum" wages. Mr Madeley wanted an enquiry into the high price of fish.

A representative of Irvin and Johnson replying in the columns of the "Cape Times" to Mr Madeley, said that if some places in the interior could not get fish, this was because of transport difficulties; Irvin and Johnson had no monopoly, he said; it was "absurd" to claim that fish could be sold profitably at 4d per lb, and trawlermen - the only fishermen employed by Irvin and Johnson - were paid fair wages. Mr Madeley had confused trawlermen with inshore fishermen, said the spokesman.

Whatever the rights and wrongs of the dispute, it seems likely that Mr Madeley's attack was based on a feeling among at least some people that fish prices were unnecessarily high, and that the cause of high prices was the monopolistic middleman.

The rise in fish prices during the war no doubt contributed to the feeling that fish cost "too much." Price control of fish was instituted in September 1942,⁹⁸ but did not apply to all fish. Thus on May 5th, 1943, the "Cape Times" reported: "Before the war snoek could be bought at the boats for £3 an hundred or 1s. each. Today they cost £12 an hundred or 5s. each. It can thus be seen that snoek is unobtainable in Cape Town fish shops where the maximum price is fixed at 7d per lb." And on July 31st of the same year the "Cape Times" reported: "Lots of inshore fish such as hottentots or silver fish that before the war fetched 1s., were being bought today by retailers from the boats for 3s. 4d."

A report early in 1944 gives an example of the sort of feeling that seems to have grown up about fish prices. On the 19th of January the "Cape Times" reported that fishermen at Gansbaai had landed 15 000 geelbek during the previous

few days, and had sold them for about £2 200. The report went on: "It is considered here* that in Cape Town the fish could have been retailed to give a total return of between £20 000 and £25 000." The inference of this report was clear: that some middleman was making a very large profit. The report was followed a few days later by a letter from Mr H. Goodspeed of Stubbs Fisheries, Cape Town, who wrote:⁹⁹ "Observe how, by inference alone, the proper psychological atmosphere is created by which the consumer and any interested authority is led to believe that vested commercial interests probably account for the alleged enormous gap between the producer and consumer prices, namely £22 000.... The core of the psychological atmosphere lies in the fact that the fishermen reaped £2 200, and that in Cape Town these catches could have been retailed for the enormous sum of £25 000. In point of fact, a great portion of this catch was actually sold in Cape Town, and Gansbaaiers who both catch and transport the fish know this full well.

"Every established fish merchant here can prove that these Gansbaaiers refused to sell their transported fish here under 4d and 4½d per lb cash by the lorry load, and that they actually received this excessive price for their fish. The wholesaler has to handle, cold storage, accept weight losses and distribute this fish, also take responsibility for any indifferent quality owing to deterioration on the long journey from Gansbaai. The retailer in turn has to clean, trim, slice, package, and deliver this fish, at the controlled price of 7d per lb. Both parties have to provide the usual credit facilities. Now, therefore, does an article costing 4d to 4½d per lb in bulk, sold at 7d per lb cut and sliced, which is said to have realised £2 200 in the first instance, sell for £25 000 at the controlled price? The answer of course is that the latter figure is an absolute phantasy...

"Nevertheless, the correct atmosphere has been created that someone has made an enormous profit, and that that someone is neither the producer nor the consumer."

* That is, in Gansbaai.

One may infer from Mr Goodspeed's letter that there existed at this time a feeling among members of the public that excessive profits were being made in the fish trade, and that fish prices were unnecessarily high; and one may further infer that fish merchants knew about this feeling and were anxious to change the "atmosphere" of public opinion.

One other piece of evidence gives a clue to the feelings of housewives about fish at that time. On March 3rd, 1944, at a meeting of the Cape Town branch of the National Council of Women, Mrs A. Jolly criticised the Fisheries Development Bill then before Parliament. It seemed doubtful, she said, whether the passing of the Bill would result in cheaper fish or a more plentiful supply. 100

These reports, taken together, do suggest a certain climate of opinion regarding fish: that prices were unnecessarily high; that fish merchants were making undue profits; that there was inefficiency among some fishermen; that others engaged in monopolistic practices to keep up the price of fish - sometimes even throwing fish back into the sea in order to create an artificial scarcity.

All these points were brought up in parliament during the debate on the bill of 1944*; and it is reasonable to assume that in bringing up these points, members were to some extent at least giving expression to the feelings of their constituents. Some examples to substantiate this will now be given.

The question of fish prices were brought up by Mrs Bertha Solomon. She said that evidence had been given to the Select

*The debate began on May 9th, and is reported in Hansard 49, cols. 6949 - 6982 and 7102 - 7160. I have not thought it necessary to give the column references to all the parliamentarians' remarks quoted in this section.

Committee that the cost of carrying fish from Cape Town to Johannesburg was 2d per lb. "The trawling companies said it was more, though their own figures seemed to bear out 2d per lb. Suppose it was 3d; the retail price of fish in Johannesburg is 7½d per lb, though I often have to pay 8d or 9d. (And soles, which cost no more to catch, are 1s 4d per lb). But the trawling company's representative did not consider the price difference very big!.... If the bill is to succeed, the price of fish must not rise; the Minister should if necessary use his powers under section 28 to control fish prices; but I hope the industry will see the writing on the wall and give consumers a better deal." And Mr Kentridge added: "As far as cheap fish to the public goes, private enterprise has failed."

The complaint that middlemen make excessive profits amounts to the claim that distribution charges are too high. This point was in part made by Mrs Solomon in the quotation just given. Mr Erasmus also spoke about the failures of distribution - "just look at the primitive way in which we conveyed and iced our fish."

The alleged inefficiency of the fishing industry was also mentioned by Mr Erasmus. He said: "..... it is necessary that the whole fishing industry should be rationalised by more effective and more modern methods of catch and refrigeration and propaganda. It was thought that we were backward, but I think the Select Committee was astounded to see how backward we really were in comparison with such countries as the U.S.A....."

The point about the fishing industry being a monopoly was mentioned repeatedly in the debate (though it could only be held to be valid as regards the trawling section of the industry, and there is even some doubt about that). The Rev. Miles-Cadman gave his version of the history of Irvin and Johnson - the gradual ousting or buying out of competitors, persuading the Imperial Cold Storage Company not to enter the fishing industry, the attempt to ensure a one-channel

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distribution system controlled by Irvin and Johnson. He went on: "The time of true competition is past, and the day of the monopoly combines and the cartels has come. The great unities which limit output, which arrange the price of products to their own advantage, without reference to the well-being of the consumer.... are with us.... The Association of Chambers of Commerce has admitted, in an editorial article, that the "financial, industrial, and distributive practices of the capitalist system have not invariably aimed at maximum production"..... If a monopoly were justifiable, would it not be better that the monopoly authority should be the state, and not some hidden band of profit-makers?"

Mr Erasmus said that private interests had retarded progress in the fishing industry in order to keep up prices. "It was proved that the two existing companies had neglected their duty towards the consumer." Mr Burnside said that "the fishing market in South Africa has for many years been built up on a policy of great scarcity."

The accusation that fishermen deliberately threw fish back into the sea in order to keep up prices was another recurrent theme in the debate (though the accusation had been denied by the fishermen themselves). Mr Miles Cadman said: "Destruction of fish to keep up prices does take place. A week or two before Easter of this year the "Sario" of Cape Town took a full catch back to Robben Island and tipped every fin over the side to satisfy some senseless regulation... Anybody can go and talk to the skipper and he will remove the doubt all right...." Mr Erasmus said: "It was a very great shock to me to discover at one stage such a great quantity of fish was thrown back into the sea with a view to controlling the price. It was a shock to me to find out that what had been so often alleged did take place on a large scale."

Mr Burnside said, "I know that on occasions tons of fish have been thrown back into the sea," and supported his remark by a not entirely convincing account of how fish were being

thrown into the sea off East London. And Mr Hayward, rather more cautiously, said that although the stories of dumping fish had been denied, he believed there was a "modicum of truth" in them.

Mrs Solomon also brought up the question of better conditions for fishermen; so did some of the other speakers; and this was, as it were, a minor motif running through the debate. But the general tone was that fish ought to cost less than it did - or certainly that it should not cost any more than it did - and that the cause of high prices might well be either that the fishing companies were not efficient, or that the biggest company used its monopoly position to keep fish scarce and expensive. To summarise and put the whole thing in its simplest form: what most ordinary people seemed to want - so far, that is, as they were interested in fish at all - was in having more fish available at a lower price. From the consumers point of view, the success of the bill would have to be judged largely by how far it succeeded in doing this.

2. The Overt Aims of the Bill.

The bill had, of course, more aims than simply cheap fish. But these aims were not apparent in the text of the bill itself. They were well expressed during the parliamentary debate by Mr F.C. Erasmus. Mr Erasmus was a member of the opposition; but he was the opposition's main expert on fisheries; he had been a member of the Select Committee which had investigated the bill in detail and at length; and he was a supporter of the bill, even though he criticised certain aspects of it, and more especially the decision by the Minister to exempt the trawling side of the industry from the plan whereby the Fisheries Development Corporation was to control the distribution of fish. The chief aims of the bill, according to Mr Erasmus were: 101

1. To develop the great undeveloped fish supplies along the coasts of South Africa.
2. To increase the consumption of fish at a lower price to the consumer.
3. To ensure a fixed economic price for fish, and to prevent fluctuations in the fish market.
4. To stabilize the whole fishing industry as far as the catch is concerned, as far as the processing is concerned, and as far as the marketing is concerned.
5. To encourage a more settled way of living among fishermen; and
6. To try to remove the shocking social conditions under which some fishermen lived.

Some of these aims would appear to be conflicting; some are obscure, notably point (4). Despite this, Mr Erasmus seems to have given a fair account of the objects of the bill, as they were seen by those who introduced it.

At the same time, Mr Erasmus' account of the aims of the bill is somewhat superficial; it is the sort of account that would satisfy a member of parliament or a political meeting. A much deeper analysis of the aims of the bill is given in the memorandum presented to the Select Committee on the Fishing Industry Development Bill by the Department of Commerce and Industries.¹⁰² This memorandum represents the thinking of the senior public servants who were actually responsible for government control of the fishing industry; and they had probably had to do more thinking about this particular subject than any other group of people in South Africa. In order to understand the aims of those actually responsible for drawing up the bill, it will be necessary to quote from the memorandum at some length.

The memorandum began by drawing a parallel between the conditions of the fishing industry in South Africa and the conditions of free enterprise capitalism in general during the depression of the 1930's: "In the period between this and the last war, we witnessed in most Western democracies highly efficient industry working at low costs and making large profits, on the one hand, and, on the other, vast numbers of unemployed. This was evidenced in the case of the United States of America, where during the period in question, industry was operating at a level of efficiency unsurpassed in the history of mankind, yet in that very country unemployment numbered between 10 and 12 millions. This state of affairs has been the subject of close examination by present day economists and social thinkers, and some of the most eminent among them have come to the conclusion that the experience in this respect of the great industrial democracies during this period was no mere accident, but the inevitable consequence of uncontrolled private enterprise operating under the spur of efficiency under modern conditions of prolific productive power.

"This paradox of efficiency and distress going hand in hand is reflected very strikingly in the fishing industry of this country - only in this case the distress is in the form of sub-economic earnings and not unemployment. Here we have a few powerful companies working at a high level of efficiency and earning large profits, yet employing less than 10 per cent of those engaged in the industry. The fact that unemployment, as such, hardly exists in the industry is due to its character, where the great mass of fishermen are not wage earners subject to dismissal, but operate for their own account and therefore directly subject to adverse market conditions. (Evidence has been led to the effect that a large proportion of the fishermen are at present relatively prosperous. This is accepted, but their prosperity is due entirely to war-time conditions

arising out of the fact that the Government has requisitioned a large number of trawlers normally engaged in fishing. With the return of these trawlers to the industry, the market will again be fully supplied with fish and the prices realised by the inshore fishermen are bound to fall to levels which, as in the past, will merely provide a sub-economic livelihood to those fishermen if they are not in some way supported by Government intervention).

"The parallel existence of highly efficient industry on the one hand, and large numbers of unemployed or sub-economic workers on the other has given rise to state relief schemes which in their most pernicious form have become known as the policy of the dole. Furthermore, it is pretty clear that if private enterprise is to be left uncontrolled and unaided by governments, this policy of the dole will be perpetuated in the economic system of the Western democracies.

"The idea underlying the Bill before the Committee is to get away from this policy, and instead to reconstruct this particular industry, namely the fishing industry, in such a manner that not only will the highly prosperous concerns be permitted to continue under reasonably profitable conditions, but in addition that those who have been living under sub-economic conditions will be able to obtain a just reward for their efforts having due regard to their station in life. In contra-distinction, therefore, to the policy of the dole, this Bill seeks, as far as is practicable, to substitute in respect of the fishing industry a policy of full employment at reasonable living standards."

This quotation explains, as it were, the philosophy behind the bill, as seen by the officials of the Department of Commerce and Industries. Some points seem to be worthy of comment.

In the first place, the difficulties of the fishing industry are not seen as being due to the peculiar nature of the fishing industry itself - namely, that the raw material on which it is based is a common property resource incapable of being privately owned. This peculiarity is not even mentioned - understandably, perhaps, since Scott Gordon's pioneering article on "The Economic Theory of a Common Property Resource" did not appear until some ten years after the memorandum now under consideration had been written. On the contrary, the memorandum suggests that the difficulties of the fishing industry are typical of the difficulties of all industries in the Western democracies.

Secondly, the memorandum seems to imply that just as efficiency and distress go together in industry as a whole, so they go together in the fishing industry. But this analysis of the South African fishing industry of the early forties is surely open to question. The memorandum does not define economic efficiency, but it does accept that the trawling companies were working at a "high level of efficiency". What is the evidence that the inshore fishermen - that 90% of the fishing labour force which produced less than half the total fish supply - was efficient? One would have thought that the mere production figures would have been enough to show that the inshore fishermen, compared with the trawlers, were inefficient producers. The true position in the fishing industry at the time was not efficiency and distress going together, but an industry divided into two sections, one of which - the trawling section - was efficient and prosperous, and the other - the inshore fishermen - was inefficient and in distress. (Admittedly the inshore fishermen's position was for special reasons better in 1944 than it had been in 1934).

Thirdly, the requisitioning of a number of trawlers during the war had added a new element to confuse those who were trying to understand what was really happening. The disruption of a part of the most efficient section of the

industry did not lead to greater distress; on the contrary, it led to a relative degree of prosperity for the inshore fishermen who had previously been distressed. This curious result is attributed, in the memorandum, to the fact that the reduction of output caused by the requisitioning of the trawlers had caused fish prices to rise. No doubt there is some truth in this explanation. But not all fish prices rose. The Board of Trade and Industries had estimated the average price of fish in the early 30's as somewhere in the region of 7d per lb., and this was actually the price at which fish was controlled during the war. Certainly some fish caught by inshore fishermen escaped price control; but not all, as witness the incident of the 15 000 geelbek caught by the Gansbaai fishermen in January 1944. So perhaps an additional reason for the wartime prosperity of inshore fishermen may be needed; and the reason may well be that the reduction in the number of trawlers led to an increase in the catch per unit of effort for the remaining fishermen.

If it were true that the South African fishing industry included a small, efficient, and prosperous section - the trawling industry - and a large, inefficient, and distressed section - the inshore fishermen - then what would be a "solution" of this "problem"? One "solution" would have been to allow market forces free play under competitive conditions. The result of this "solution", if the theory of the common property resource is correct, would be a trawling industry reduced to distress despite its efficiency. A more acceptable solution might have been some form of government action to reduce the numbers and capacities of the inshore fishermen. This would have led ultimately to an increase in the catch per unit of effort by the inshore fishermen, and so to an increase in their prosperity. But it is not clear what effect this "solution" would have had on the total quantity of fish caught.

However, the memorandum did not propose to adopt either of these "solutions". The solution proposed was that the government should assume overall control of the entire industry; it should allow the "highly prosperous" section of the industry to continue, but should reduce it to "reasonably profitable conditions"; and by a reallocation of the "excess" profits obtained, directly or indirectly, from the trawler operators, should subsidise the inshore fishermen, in ways to be explained later, and should thus ensure them a "just" reward for their efforts "having regard to their station in life". It is not clear what a "just" reward might have been; but it does seem that those who drafted the memorandum did not see the distress of the inshore fishermen as being due to their inefficiency, but rather to "adverse market conditions". By this was presumably meant the fact that inshore fishermen found it difficult to sell their catches profitably because many of them lived in remote villages with poor transport facilities to profitable markets.

The "solution" proposed in the memorandum would indeed have solved the "problem" of the fishing industry - provided that the "problem" was seen as being only the low standard of living of the inshore fishermen. If, on the other hand, the "problem" was seen as being "not enough fish" or "too expensive fish", then "solutions" of quite a different nature would have been required.

The remainder of the memorandum by the Department of Commerce and Industries was an explanation of how the Bill would achieve its objects. The Bill, it was said, could be divided into three main sections:

- (1) The registration of fishermen and fishing boats.
- (2) The establishment of the Fisheries Development Corporation.
- (3) Special powers given, nominally to the Governor-General, in fact to the Department of Commerce and Industries, to control the fishing industry.

The registration of fishermen and fishing boats was explained simply as being necessary if social benefit schemes for fishermen were to be undertaken. "It can be stated that definitely in this connection, that if this country is to embark upon comprehensive schemes of social security, it will not be possible for it to bring such schemes into operation without the preparation and maintenance of a national register; so that the provisions of this measure for the registration of fishermen can be largely looked upon as a step, limited to the fishing industry in this case, but in anticipation of the more comprehensive step, namely, national registration."

The Fisheries Development Corporation, it was explained, would have as a main object "the provision of various types of services for the benefit of the inshore fishermen." To enable it to provide these services, the Corporation would be given power to trade in and process fish. The provision of services for inshore fishermen was to be known as the "A" power of the Corporation, and was to be financed through "A" shares. The power to trade in and process fish was to be known as the "B" power of the Corporation and was to be financed through "B" shares. The two powers were quite distinct, but were inter-related. The memorandum gave this explanation of the inter-relation:

"While there has been a large volume of support in evidence for the primary objects of the Corporation, namely, those under which services will be supplied to inshore fishermen, there has been a great deal of hostility to the extension of the secondary powers, conferring the right to trade and process. In this connection it should be pointed out that it is in respect of the primary objects of the Corporation, that private enterprise has hitherto failed to provide the requirements of the industry, and it can also with confidence be said that no private enterprise would be prepared to undertake the primary objects of the Corporation without in

addition being given powers to process or deal in fish. This is so because the extension of the services envisaged under the "A" powers of the Corporation would not by themselves, under existing conditions in the industry, be profitable to any such undertaking. The provision of these services would entail a heavy capital outlay for the benefit of a large number of men who have no financial means, and who, in many instances, have developed intractable characteristics. Any undertaking, therefore, which provides these services, and which at the same time has no control over the earnings of the fishermen through ability to trade and process would find it extremely difficult, if not impossible, to recover payment for the services rendered. It becomes imperative, as a consequence, if these services are to be supplied to the fishermen, that some control should be exercised over their earnings by the institution providing the services; and this can only be done by conferring upon such institution the power to trade and process, if the services rendered are to be placed on an economic footing. It is for this reason, therefore, that the Bill extends to the Corporation the power to trade and process; for without such powers the services provided under the "A" provisions would have to be subsidised by Government, thereby defeating the intention of the measure to make the industry self-supporting and not dependent on relief measures."

NB

The memorandum then went on to explain how the Corporation would provide these services for the inshore fisherman. The explanation amounted to a suggestion that the Corporation should provide the capital and the management needed by the industry. The Corporation would provide "boats and gear, sheds, premises and plant for the handling and treatment of fish and fish products, refrigeration or ice-making plants, transport, and in addition, the services of management.... in addition the Corporation would provide amenities to the fishermen such as housing, water supplies, etc."

In some places, the memorandum suggested, the Corporation would be able to organise fishermen's co-operatives; the proposed services could then be supplied direct to the co-operative - presumably either at a fee or in return for a share of the catch. But it was recognised that most inshore fishermen could not easily be organised into co-operatives; so an alternative form of organisation was proposed: groups of eight to twelve fishermen, using a boat leased by the Corporation. (The lease might either be directly to the group as a whole or to a "boat-owner" who would be in charge of the group and control their activities.)

"Where organisations of this description are sponsored, it would probably be advisable for the Corporation itself to purchase the fish landed from the boats and to arrange for the handling, treatment, and disposal thereof....

"With the larger catches expected under the proposed schemes, however, fish would in all probability be caught in excess of the requirements of the areas in the immediate vicinity of the small catching centres; and in such circumstances, some effort would have to be made to link up the surplus supplies from such centres with the main artery supplying the distant inland areas. This would be necessary in order to avoid gluts being left on the hands of the co-operative societies or of the Corporation in such outside fishing centres.

"It is with this object in view that it is proposed that a large distributing company should be formed with headquarters in Cape Town. This company would then canalise the sale of all fish whether derived from the trawling companies, from inshore fishermen in Cape Town, or from the surpluses of the outlying centres. Such a step would necessitate a division of the assets of the trawling companies in such a manner as to segregate their distributing from their producing activities. The assets normally employed in the distributing side of their business could then be taken

over by the central distributing company, as also the personnel normally engaged in the conduct of the distributing activities of these firms. By way of payment for the transfer of these assets to the distributing company, the large trawling firms would receive shareholdings in such company, in which the Corporation would, as representative of the inshore fishermen, also take a holding."

The memorandum then goes on to explain that although the trawling companies would have the largest number of directors on the board of the proposed distributing company, the Corporation or the Government would be in a position to exert ultimate control over the prices and policy of the company, by virtue of the special powers conferred on the Governor-General - as will be made clear later.

This second, fuller, and more detailed description of how the Department of Commerce and Industries expected the Bill to work shows a point of view quite distinct from the first part of the memorandum, which outlined what might be called the "philosophy" behind the Bill. The first part suggested that the primary object of the Corporation would be betterment schemes for the inshore fishermen - housing schemes, water supply schemes, and so on. These schemes were to be financed by the secondary activities, which would include a re-organisation of the industry and a reduction of the trawling section of it from being "highly prosperous" to being no more than "reasonably profitable." The suggestion seemed to be that the prosperous trawling firms were to be milked for the benefit of the depressed inshore fishermen.

The second explanation first of all expands the original "milking" idea, then introduces a completely new aspect. In fact, two quite distinct lines of approach are suggested:

(1) The proposal to form a central distributing company. The word "form" is perhaps a little misleading here, since the

distributing organisation already existed, having been built up by Irvin and Johnson. What was actually proposed was that Irvin and Johnson be expropriated as far as their distributing assets were concerned, and that they be compensated for their loss by being allowed a share in, but without effective control of, the assets they had formerly both owned and controlled. Final control of the new company would rest with the Corporation or with Government, and they could use this control to make the necessary finances available to pay for the proposed betterment schemes.

(2) The second, and new, suggestion is that the reorganisation of the inshore fishing industry by the Corporation would make that industry profitable; if this happened, the betterment schemes would be paid for out of the profits of inshore fishing; and inputs of capital and managerial skills into inshore fishing would make for bigger profits in the inshore fishing industry, as well as better conditions for the inshore fishermen; and all this, apparently, without an increase in the price of fish to the consumer.

The memorandum does not make it really clear which of these two approaches was intended. It may well be that both were held in view; and there was, logically, no reason why both should not have been used at the same time. The Corporation might have made a profit out of running a central distributing company; it might have also, and simultaneously, made a profit out of a reorganised inshore fishing industry. But it is also fair to add that, while centralised fish distribution did offer reasonable prospects of profit, there was little reason to suppose that the inshore fishing industry could have been made profitable by any reorganisation of the lines suggested in the memorandum.

Finally, the memorandum explains the rationale behind the special powers which the Bill proposed to give to the

Governor-General. These powers were to compel any fishermen or fishing enterprise to sell all fish landed within a particular area to the Fisheries Development Corporation, at prices to be fixed by the Governor-General. But another clause allowed the Minister of Commerce and Industries to permit any private enterprise to contract out of the provisions laid down by the Governor-General, on such terms as the Minister might decide. The effect of these provisions was tantamount to a system of licensing, according to the memorandum. Under them, all fishing enterprises could be compelled to sell their catches to the Fisheries Development Corporation, at prices fixed by the Government. But after the regulations requiring forced sales had been passed, it was intended that large private firms should be offered exemption from these regulations, on condition that they accepted such regulations as the Department of Commerce and Industries might require. In this way actions which the Department considered to be in the interests of the industry as a whole could be forced on individual firms; or at least very strong pressure could be put on them to do what the Department wanted.

It may be asked why this somewhat roundabout method of enforcing regulations was adopted. Would not a straight-forward system of licensing have been better? The reasons for the course actually proposed were explained in the memorandum: "Dr Bernard Price, * in his evidence before the Committee, advanced a scheme for the licensing of private enterprise subject to the imposition of conditions upon such enterprise. In essence (the Bill) provides such licensing powers, although in a manner more adapted to the fishing industry, and probably less ruthless than that envisaged by Dr Price. The scheme advocated by Dr Price was based upon Government imposing its conditions upon industry through a system of licensing, or of the withholding of a licence if any particular enterprise refused to accept the Government's conditions. In the fishing

* Dr Price's views are set out in Section 7 of this chapter.

industry, however, it is quite conceivable, for instance, if Government were to attempt to impose conditions upon Messrs Irvin and Johnson, that that company would decline to carry out the conditions; and in such circumstances Government would be placed in a very invidious position, for it would either have to compromise with Irvin and Johnson, or would have to issue the licence to a competitor, thereby destroying the valuable assets which Irvin and Johnson had built up over a number of years. Under the provisions of (the Bill) on the other hand, which, as stated, could be regarded as tantamount to the provisions of licensing, the consequences upon an established undertaking in the industry such as Irvin and Johnson need not be so severe; for, at worst, Government could demand that the company hand over its catches of fish to the Corporation at fixed prices which, because of the general applicability of such prices, could not be at a level which would force Irvin and Johnson out of business."

The plan which the Department of Commerce and Industries had for the fishing industry may therefore be summarised as follows:

- (1) The Government was to take very considerable powers to control the whole industry; Government would not have the power to order specific sections of the industry to carry out instructions, but its power to force fishing companies to sell at fixed prices would enable Government to put great pressure on any group that did not "toe the line."
- (2) This control would largely be exercised through, or at least on the advice of, the Fisheries Development Corporation, which occupied a central position in the whole scheme, and was seen as fulfilling two specific functions.

(3) Firstly, the Fisheries Development Corporation would organise, finance, and to a large extent manage the inshore fishing industry. It would do this either through fishermen's co-operatives, or through small groups of eight to twelve fishermen working one boat - a boat which might have been leased to them by the Corporation. The Corporation would be able to influence the fishermen to accept its control through its ability to fix prices and compel fishermen to sell to the Corporation only.

(4) Secondly, the Corporation would organise and run a central selling organisation which would buy, distribute, and sell all sea fish, however caught. Again, it would have the power to compel all fishermen to sell only to and through this central selling organisation.

NA
(5) The money to finance these undertakings would be obtained originally from the Government or from public shares; but the enterprise would ultimately be paid for by the profits made on the better-managed inshore fishing industry as well as from the profits of the central selling organisation.

(6) Some of these profits could be used for housing schemes and similar plans for the social betterment of fishermen.

Set out in this way, the scheme does have a certain coherence. Its basic weakness was that there was little reason to suppose that a centrally controlled inshore fishing industry would be more profitable than the somewhat haphazard industry that then existed. So the Corporation would have been compelled to use its profits from the controlled selling organisation to support the inshore fishermen. This would have virtually amounted to taking part of the profits from the trawling industry and distributing them among the inshore fishermen. Nor is there any reason to think that all this could have been combined with cheaper fish. However, all this is mere conjecture. The scheme as envisaged by the

Department of Commerce and Industries was never, in fact, put into operation, so we cannot know what might have happened if it had been. One of the reasons why the scheme was not implemented was that other people interested in the development of the fishing industry had different ideas on how it should be organised. To some of these ideas we shall now turn.

3. Views of the Department of Social Welfare.

The Department of Social Welfare was interested in the Bill because the "deplorable social and economic conditions prevailing in most of the fishing villages of the Union"* were its direct concern. A memorandum¹⁰³ by Mr J.C. Bodenstein, Controller of Settlements in the Department of Social Welfare, pointed out that most inshore fishermen lived in "abject poverty". There were, according to Mr Bodenstein, two reasons for this:

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- "(a) The shore buyer of fish, usually also the lorry owner, paid extremely low prices for fish, i.e. when compared with those paid by the public;
 - (b) The boat owner's share of the fish caught, as compared with that received by the crew, was out of all proportion to the services rendered or the capital invested."

Mr Bodenstein produced no figures or other evidence to support either of his reasons. He considered that the proposals of the Bill would deal adequately with the disparity between the low prices paid to the fishermen and the higher prices paid by the public. No doubt he was here referring to the proposed centralised distributing organisation to be run by the Fisheries Development Corporation; but perhaps he had not fully considered the high cost of transporting a perishable product from

* The words are quoted from Mr Bodenstein's memorandum.

remote villages or the difficulties of administering a centralised distributing organisation in a scattered and thinly populated countryside. On the other hand, he considered that the proposals in the bill would do nothing to reduce the boat owner's share of the fish caught (rather it would have a contrary effect, because the registration of boats would make it more difficult for new boat-owners to enter the fishing industry, and would therefore give existing boat-owners a degree of monopoly).

"In order to rectify the position...., the Bill should be amended to provide for the regulation and control of the conditions of employment between boat owners and crews, or, as an alternative, which is favoured by me, the Bill should make provision whereby the Corporation or an associate company shall have the sole right of using boats or nets for fishing purposes in a controlled area. Mr Bodenstein went on to point out that the arrangement - which in fact fell little short of full state control and management of part of the fishing industry - would allow the Fisheries Development Corporation to control the fleet of boats in a controlled area as a unit, would enable it to equip the crews with modern boats ("whereas the private owner is not in a position to do so") and make it more easily able to enforce conservation regulations, since the crews would be operating directly under the Corporation.

It is not necessary to go any more deeply into Mr Bodenstein's proposals, since they were not acted on and do not find legal expression in the Bill as finally passed. Their main interest, I think, lies in the fact that they suggest there were some people who wanted a good deal more centralised control in the fishing industry than the Bill itself proposed.

4. The demand for research.

Section 9 of Chapter II contained a brief review of the fisheries research that had been done in South Africa up to

1944. Although a considerable effort had been made, what had been accomplished amounted to little more than demonstrating the potential of certain fishing grounds on the South African coast. This was in itself perhaps a not inconsiderable achievement; but a great deal more research was needed if the industry was to have the best chance to develop satisfactorily. There were, in fact, large gaps in the research effort; and the simplest way to demonstrate this is to list the various types of research that are of interest to a fishing industry. There are six main types,¹⁰⁴ which, with their sub-divisions, may be set out diagrammatically:

I. Basic research

- A. Fishery potential
 - (i) Population dynamics
 - (ii) Biology
 - (iii) Ecology
- B. Environmental studies
 - (i) Plankton studies
 - (ii) Physical oceanography
 - (iii) Chemical oceanography

II. Research into fishing techniques

- A. Fish habits
- B. Catching methods

III. Research into fish farming

IV. Research into processing.

- A. New products
- B. Processing methods
- C. Social aspects

V. Research into related aspects

- A. Harbour design
- B. Marine geology
- C. Meteorological research

VI. Economic research

- A. The place of fishing in the economy
- B. Economic aspects of I-V

Basic research into fishery potential includes the study of the number of fish, the way in which the fish population increases ("population dynamics"), the life cycle and habits of particular species ("biology"), and the interaction between fish species and the environment in which they live ("ecology"). A second branch of basic research is the study of the environment in which the fish live: plankton studies, studies of currents and water temperatures ("physical oceanography"), and studies of the salt content of water and the trace elements to be found in it ("chemical oceanography").

Research into fishery techniques involves on the one hand a study of fish species from the point of view of seeing how advantage can be taken of their habits in order to catch them more easily; and on the other hand, the study of the actual techniques used in fishing - traps, nets, lines, echo-sounders, trawls, and so on.

Research into fish farming involves the study of ways in which to breed or cultivate fish, as opposed to simply hunting them. A start in this has been made in South Africa: some examples of research into fish farming were the attempts to breed oysters at Knysna, and the attempts to develop rock lobster hatcheries - both described in Chapter VI. The methods of fish farming differ greatly between species, so that this is a varied field of research.

Research into processing involves the development of new products ("fish sticks", introduced in South Africa in the middle 50's, are an example), the study of processing techniques (such as canning) and the study of social problems resulting from processing techniques, notably pollution.

The "related technical aspects" of harbour design, marine geology, and meteorology, are all of obvious interest to fishermen. Economic research into the fishing industry involves such questions as the industry's needs for capital and labour; the potential market for its products; the extent to which different local communities depend on fishing for a livelihood;* and so on. Finally, the fields of research indicated earlier have an economic aspect; they can be studied from the economic point of view and they then become part of economic research.

In the early 1940's, if one is to judge by the evidence given to the Select Committee that investigated the Fishing Industry Development Bill in 1944, there was a general awareness among those interested in the fishing industry of the need for research, and also a general feeling that not enough research had been done or was being done. Thus the South African Federated Chamber of Industries submitted a memorandum to the Select Committee in which it said: "In the opinion of the Chamber any real development of our inshore fisheries must be based on adequate research into the quantities, whereabouts, habits, and conditions at various seasons, of inshore fish. Such research has up to now been sadly lacking, the work of an under-staffed and under-equipped Division of Fisheries having been barely sufficient to deal with trawled fish and crawfish problems."¹⁰⁵ Mr G.E. Williamson, one of those who presented the memorandum, was questioned by a member of the committee about this, but denied that it was unfair to the Division of Fisheries to say that research had been "sadly neglected." He added: "From a practical point of view the Division of Fisheries has not

* This may seem a curious field of economic research. But there is a feeling among some South Africans that any group which has for a long time carried on some activity has a traditional right to carry on that activity and ought to be protected from attempts by other groups to take over that activity. This also has a racial significance: some work is "traditionally" done by Whites, other work is "traditionally" done by Coloured people.

really been in a position to assist by making literature accessible to us. I must quite honestly say I do not think the Division of Fisheries has been of any assistance in the canning of fish in this country."¹⁰⁶ Dr J.G. van der Horst told the Committee that the extent of South Africa's fishery resources were not known because sufficient research had not been done: "We know that we have fish on certain grounds, good fishing grounds, but are these comparable to the big fishing grounds in Europe and America? No one can say because it is all research work which has still to be done."¹⁰⁷ The South African Food Cannery Council submitted a memorandum which mentioned the "lack of marine research", and continued: "The Council feels that an essential preliminary to any attempt seriously to develop the fish canning industry in South Africa, or even to maintain it at its present war-time level, must be a scientific investigation of the Union's resources of the types of fish suited for canning."¹⁰⁸ Other examples of this point of view could be quoted from the memoranda submitted or the evidence given to the Select Committee. These representations did not arouse much reaction from members of the committee, and there was comparatively little discussion of the subject.

However, from quite a different source there is even clearer evidence of the desire among fishing industrialists at this time for more research work to be done. On December 21, 1943, a meeting was held at the offices of Division of Fisheries to discuss the establishment of a Fisheries Research Board. Those present included representatives of the University of Cape Town, the Low Temperature Research Laboratory, and several fishing enterprises, as well as officials of the Division of Fisheries. As a result of this meeting, a memorandum on fisheries research was drawn up for the consideration of the Select Committee on the Fishing Industry Development Bill. The memorandum was apparently

submitted to the Committee, but was not printed in its proceedings. *

The memorandum was drawn up by a committee formed under the chairmanship of the Director of Fisheries, and was sponsored by the following commercial interests and institutions:

- Concentra (Pty) Ltd
- The Division of Fisheries
- Irvin and Johnson (SA) Ltd
- The Low Temperature Research Laboratory
- Marine Products (Pty) Ltd
- The National Trawling and Fishing Co. Ltd
- Ocean Products (Pty) Ltd
- S.A. Food Canners' Council (Fish Industry Section)
- Union Smokeries (Pty) Ltd
- Vitamin Oils (Pty) Ltd

The University of Cape Town was also involved in the preparation of the memorandum, but its name was not included amongst the list of sponsors as there had not been time to submit the memorandum to the University Council for detailed endorsement.

The memorandum drew attention to the "serious position" which the industry faced because of "lack of essential data concerning our marine resources and their exploitation," and went on: "This crisis has its origin in the serious

* There is a reference on page X of the committee's report to a memorandum submitted by the "Fisheries Research Advisory Board". This is no doubt the memorandum in question. The fact that it was not printed in the committee's report is perhaps indicative of the committee's comparative lack of interest in the question of research. A copy of the memorandum was sent to the Council of the University of Cape Town, and was preserved in its files. I am grateful to Dr H.M. Robertson for drawing my attention to this memorandum.

understaffing of the Division of Fisheries in past years, and has reached its culmination in the virtual extinction of the Division's activities during the past four years. Much lost ground has to be made up, and the rapid and immediate expansion of fisheries research on a much broadened basis is deemed essential if the demands of the expanding industry are to be met."

The memorandum went on to indicate some directions in which research was needed, with reasons why each type of research was important to the industry:

"1. The study of oceanography and marine biology. The significance of detailed long-range studies of sea temperatures, ocean currents, salinities, plankton, and of the life histories and inter-relationships of marine organisms generally is often not fully recognised. Major issues, however, have not infrequently been directly influenced by such fundamental studies. A few examples can be given. Thus: (a) The discovery of the presence of tuna species in, and their confinement to, an intrusion of warm water off Oregon, U.S.A. has had much to do with the development of an industry there which packs up to 14 million pounds of albacore* per annum. (b) The discovery by Hickling that there is a relationship between the survival rate for young hake and spring surface temperatures has made possible the prediction of hake yields in any one year from a knowledge of temperature data for earlier years. The possible importance of this for the South African stockfish or hake fishery is apparent. (c) In the North Sea, the migrations of herring in any one year have been found to be dependent to a great extent on the nature, concentration, and movement of certain plankton species. This knowledge has greatly benefitted the industry, since it has facilitated the location of the most fruitful fishing areas from year to year. The possible role of plankton studies in the development of our own sardine and maasbanker fisheries is sufficient on its own to justify a complete investigation of this field.....

* A type of tuna.

"2. The surveying of new fishing grounds. The Division of Fisheries has throughout its existence been engaged in the surveying of our fishing grounds. These survey operations are arduous and time consuming and must be considered a permanent feature of the Division's activities.... Two major problems are of immediate urgency:

(a) A survey of the incidence of sardine or pilchard schools in South African waters. The establishment of a large scale fish meal, fertiliser, and fish oil industry in South Africa is conditional upon the establishment of a sardine or pilchard fishery. The sardines found off South Africa are very similar to, if not identical with, those of the North American Pacific coast, which form the basis of an industry which catches 500-800 million pounds of fish per annum, and produces approximately 180,000 tons of fish meal and 23 million U.S. gallons of oil. Attempts to start a similar industry in South Africa have been hampered amongst other things by lack of adequate data concerning the abundance and condition of the fish at different times of the year about our coasts. The collection of such data and the testing of modern methods of catching are considered of great importance because of the magnitude of the development which might possibly result, and because of the urgent need for the exploitation of every source of protein for animal and human nutrition in the Union.

(b) Survey operations to extend fishing to more northern waters: During the past few years there has been a considerable increase in the output of South African canned fish, but the quality has been such that it is extremely doubtful whether it could compete in world markets.... It seems essential that a search for high quality canning fish be undertaken. Australia, with a similar object in view, commenced some four years ago a survey of the abundance of larger pelagic fish in the warm waters off her east coast, and today the work is bearing fruit in the shape of

a cannery operating on blue-fin tuna.... Tuna fish in Australia were previously looked upon as extremely rare.... Tuna fish are known to be present in South African waters, but until survey operations with suitable equipment are carried out, there is no means of knowing whether they are in sufficient numbers to form the basis of a tuna canning industry.

"3. The study of fishing technique: The yield per unit of effort in the fishing industry is largely dependent upon the technique used. Thus in California, the change over from lampara to the purse seine and ring net resulted in the catch of sardines being more than doubled per unit of effort. At the present time, the seine nets in use by our inshore fishermen for catching sardines and maasbankers have a catching power far inferior to the long since abandoned lampara net of the Pacific coast of California..... The 35 boats and some 300 fishermen of Velddrift catch annually about 4 000 000 lb, which is not much more than half the quantity of fish (7 000 000 lb) landed by the average Californian purse seine boat and her crew of 12..... The serious study of fishing techniques is an urgent necessity if the projected Fisheries Development Corporation is to have proper guidance in the provision of facilities for our inshore fishermen."

The memorandum went on to stress the need for other types of research as well: the study of fish preservation, processing, and transport; the study of fish by-products - meal and oil, vitamins, enzymes - and marine products such as oysters and seaweed; and the study of bird and seal populations in relation to their effect on fish supplies. (There were, according to the memorandum, immense numbers of seabirds along the West coast, chiefly cormorants, which ate enormous quantities of young fish); finally, the memorandum pointed to the lack of statistics on South African fisheries, and claimed that this lack was a serious handicap to the Division of Fisheries.

This comprehensive memorandum, supported by several firms and institutions involved in the fishing industry, does show that there was at that time a considerable body of opinion within the fishing industry that realised the importance of research, and hoped that the bill then under consideration would encourage more research. This conclusion is reinforced by the evidence on the need for more research laid before the Select Committee, and already referred to. One can say, therefore, that more and better research was one of the aims of at least some of those interested in the proposed bill.

There is, however, another point of interest in the memorandum. It suggests that knowledgeable people within the fishing industry foresaw far more clearly how the industry was likely to develop than did the politicians or even the public servants responsible for the form the Fisheries Development Bill took. Much of the discussion in the Select Committee, and in parliament, was about the powers of the trawling companies, the dangers of monopoly, and the poverty and weakness of the inshore fishermen. In the event, the development of the fisheries turned the industry, as it were, upside down; the "rich" and "monopolistic" trawling companies became the struggling poor relations of the industry; the "demoralised" and "impoverished" inshore fishermen became shoal fishermen - at least, some of them did - and it was the rapid development of this side of the industry and the great increase in the output of fish-meal and fish oils, that was the most significant aspect of the South African fishing industry in the decades following the passing of the Fishing Industry Development Act of 1944. These developments were clearly foreseen in the memorandum, which referred to the establishment of a large-scale fish-meal and fish oil industry, and asked for a survey of sardine and pilchard schools as a "major survey problem" of "immediate urgency."

5. The Views of Mr George Irvin.

Mr George Irvin, one of the founders of the firm of Irvin and Johnson, wrote a memorandum on the proposed Bill for the Select Committee. Part of this memorandum, in which he explains how Irvin and Johnson built up their distributing organisation, has already been dealt with. But there are other points of great interest in it; no one had more practical experience of the fishing industry than he; on the other hand, he had been retired from the industry for more than 20 years when he wrote the memorandum, and had therefore no axe to grind; he could look at the industry objectively.

One of the points he made explained a basic difficulty which had hampered the growth of the inshore fishing industry: "South Africa, especially the towns want fresh fish daily. If their requirements were, for instance, 100 tons weekly, we were compelled, in order to assure some regularity of supplies, to provide trawlers and steam line boats with an average catching power of, say, 80 tons, and depend on small boat fish for, say, 20 tons. When, however, the weather was good enough for the small boats to catch, say, 20 tons, the large vessels, working on the same coast and enjoying the same good weather, landed probably 120 tons, or more than our total requirements. The small boat fish had, therefore, to be sold at low prices to the few local customers not requiring regular supplies." From this analysis Mr Irvin concluded that the best chance of building up inshore fishing was not in the supply of fresh fish for sale to the public, but in supplying canning factories and fishmeal plants, for here regularity of supply was not so important as in the fresh fish trade. (In making this recommendation, Mr Irvin showed himself to be a clear-sighted prophet; it was in fact in the catching of fish for canning and for reduction to fishmeal that the fishing industry made its most rapid post-war advances).

*Not to be used for private purposes
at a share of the profits of the company*

On the other hand, Mr Irvin was quite opposed to the proposal that the Fisheries Development Corporation should control a centralised organisation for the distribution of fish. "I understand the draft Bill asks for powers to take over the entire distribution of fish. I know no country where this is done. I say emphatically that there is no country where this is less necessary than South Africa, because of the great efficiency of the existing system here. Irvin and Johnson's success did not come from their greater knowledge of the catching side of the business, but from the signal success they made of fish distribution. Looking at the matter from every standpoint, and leaving out, for the moment, the Government's past failures in handling less difficult products, I would seriously ask the following question: Why should the fish caught by Irvin and Johnson's vessels be entrusted for sale to an entirely inexperienced seller, when they themselves, with their experience, have made such an outstanding success of the distributing and selling end of the business?"

Mr Irvin warned of the dangers of overfishing. "My opinion, for what it is worth, is that the grounds worked in my time, including the Agulhas Bank, were showing signs of depletion. There were only eight trawlers working the whole coast, and yet the choicest fish, namely soles and kabeljauw, were showing signs of falling off in numbers and size.... The fact that about eight trawlers showed signs of thinning out the very large area we had on the South Coast was extremely disturbing. Whether my judgment on the matter was correct I cannot say, but I felt that the position might become precarious, and consequently arranged for some of our trawlers to prospect for new grounds or extensions of the old grounds.... Not only the trawling grounds, but line fish, particularly 74's and Kabeljauw, showed unmistakable signs of thinning out.... About the time I left the business the new grounds on the West Coast were just being started, and I cannot say what their lasting qualities are likely to be, but in view of what was beginning to happen on the South

Coast, I think that aspect of the matter should be carefully considered and investigated."

In the event, Mr Irvin's view proved to be well grounded. The West Coast Fisheries were in fact built up on fish canning and fish-meal; the Fisheries Development Corporation did not take over the centralised distribution of fish; and the danger of over-fishing has in fact become evident as catches have grown.

6. Views of the Professional Economists

Three professional economists wrote memoranda for the benefit of the Select Committee, and one of them, Professor S.M. Frankel, then Head of the Department of Economics and Economic History of the University of the Witwatersrand, appeared in person to explain his views. Professor Frankel's main point was that while monopoly in itself was undesirable, the creation of a monopolistic body, not in itself directly responsible to parliament, but drawing its monopoly powers from the state, was perhaps even more undesirable.

"I may say quite frankly that fifteen years ago I was in favour of the setting up of semi-autonomous bodies of this kind. It was fashionable then to suggest them. My experience now convinces me that such bodies are a danger to the economy, because they are not subject to the incentive of competition, to challenges by the electorate or consumer, or to changes in Government policy. Their actions are inviolate and they possess an undue degree of power.... It appears to be lightly assumed in this Bill that the efficiency of the services rendered by the new Corporation can be taken as a matter of course.

There is no provision at all for the protection of consumers against an increase in the price of fish or in regard to the

conditions under which it can be obtained. Indeed the Bill appears to me to be an attempt to finance social improvement from the revenues to be obtained from the Corporation through its participation in the catching, distributing, processing and marketing of fish and fish products.... I fail to see how in practice this will not tend to lead to a rise, rather than a fall, in the price of fish.

..... In passing, I may remark that it is very doubtful whether the principle should be entrenched in our legislation that social conditions should be improved by the grant of monopoly powers which may finance such improvement at the expense of the consumer.... Social improvement should be financed from the Consolidated Revenue Fund and raised by taxation from the people as a whole, or it should flow naturally from bringing about increased efficiency and earning power of the workers and producers in any particular industry....." 109

One may accept, no doubt, that there was some force in Professor Frankel's criticism of the measures proposed in the Bill. When it came to suggesting what could in fact be done to improve conditions in the industry, he was cautious. He had, he said, no special knowledge of the fishing industry. But he was clear that monopoly in the fishing industry, as elsewhere, was at least potentially an evil. "Any action which is restrictive to output or endeavours to raise the price of fish by monopolistic restriction of the supply of fish or the prevention of competition should be prohibited." However, Professor Frankel did not say that there were any monopolistic practices in the fishing industry, or that such practices had raised the price of fish. He admitted that he had no knowledge of these matters. He felt that the first step needed was a "detailed modern examination" of the fishing industry. Professor Frankel was examined at some length by the Committee; in the questions asked, and the answers given,

it seemed to be accepted on both sides that the conditions of the inshore fishermen were bad, and that free competition was desirable; it was nowhere suggested that the poverty of the inshore fishermen might be directly due to the fact that inshore fishing was competitive, and the relative prosperity of the trawlermen directly due to the fact that the trawling industry was monopolistic.

Commerce

Professor C.G.W. Schumanⁿ, Professor of ~~Economics~~ at Stellenbosch University, gave somewhat guarded support to the Bill.¹¹⁰ He, too, disclaimed any special knowledge of fishing. He agreed that a strong case could be made out for the proposed Fisheries Development Corporation, provided it could be shown that fishing resources could be more extensively exploited than private enterprise had done, that there had been monopoly in the industry, that rationalisation would improve the efficiency of the industry, or that existing conditions in the industry had led to fishermen living in socially undesirable ways. At the same time, he thought that the proposed Corporation should be subject to strict Government control; and the exact form in which it was to be established was much less important than the quality of the men who would be in charge of it. "If there is any reason to believe that the right men are not available, the Bill had better be dropped for the present." Once again, these comments were sensible and pertinent, but, like Professor Frankel's, they made no mention of the economic differences between the fishing industry and most other industries.

The third economist to submit a memorandum to the Select Committee was Professor W.H. Hutt, then Professor of Commerce at the University of Cape Town.¹¹¹ Professor Hutt was well known as an advocate of free competition and the market system; he was likely to oppose anything that smacked of monopoly, and indeed, he was opposed to the Bill. He protested against it "as a self-appointed representative of the consumers, for consumers are always inarticulate in such

matters, whilst their interests ought not only to be considered, but to be, indeed, a paramount consideration." Professor Hutt considered that the aims of the Bill - more fish, cheaper fish, and increased employment in the fishing industry - were unlikely to be achieved by the measures proposed. Only one clause in the Bill - that conferring the power to fix a maximum price for fish - seemed likely to tend towards lower fish prices. "For the rest, the Bill seems throughout to consist of clauses conferring the power only to reduce production, to restrict output, and to raise prices by the fixing of minimum prices. I submit, therefore, that in the interests of the development of our reputedly enormous fishing resources, and because it will be so desirable in the post-war years to open new channels of employment, that the Select Committee should present an adverse report on the Bill as a whole, in order to enable the introduction of new legislation in the following session with a view to (a) removing the barriers to the entry of further capital and labour into the industry, (b) increasing the efficiency of the marketing of fish, and (c) generally making a contribution towards the solution of the malnutrition which we all recognise as a major curse with which we, as a nation, are afflicted."

Professor Hutt added that he had no objection to a state-promoted Corporation entering the fishing industry, provided it was given no special privileges. A Corporation might benefit the industry by demonstrating to private enterprise how to catch or sell fish more efficiently; but it could only do this if it competed with private enterprise on equal terms, not if it was a semi-private monopoly. The remainder of Professor Hutt's memorandum was a more detailed criticism of certain clauses of the Bill, and an elaboration of the methods by which competition might be introduced into the fishing industry. There is no sign that he had any doubts that free competition in the industry would lead to the most economical use of the fishery resource.

7. Dr Bernard Price on Licensed Monopolies.

One of the more economically interesting ideas put before the Select Committee was Dr Bernard Price's scheme for state-licensed but privately-run undertakings; such undertakings, he suggested, might combine the advantages of centralised control and free enterprise.¹¹² Dr Price had been General Manager and Chief Engineer of the Victoria Falls Power Company, at that time the largest power supply undertaking generating electricity from coal in the British Commonwealth. The Company supplied electricity to mining companies and municipalities on the Witwatersrand; it was, explained Dr Price, a private company working for profit, but under strict government control which ensured that the company could not retain monopoly profits, but was forced to share them with the consumer. Unlike the professional economists, Dr Price was not opposed to monopoly as such. To him, it was largely a question of size. In some industries, the optimum size of firms is small; therefore monopolies will not arise, and competition among small firms will lead to efficiency. In other industries, the optimum size of firms is large; it may be so large that there is room for only one economically efficient producer in the industry. When this happens, it is undesirable to try to enforce competition; the monopoly must be accepted, but government should control the monopoly in such a way that the profit motive still operates, and in a way to benefit both the producer and the consumer. The method by which this could be achieved, said Dr Price, was through a licensed monopoly. The Victoria Falls Power Company was a case in point. In return for its licence, which conferred on it the monopoly right to supply power to the Witwatersrand (with the exception of the Municipality of Johannesburg) the company had to agree to supply power at a fixed price, which it was not allowed to exceed. But if, by efficiency and good management, it succeeded in bringing costs of production - which included a reasonable profit - below the fixed price, then, under the terms of its licence, the company must divide

this extra profit between itself and the consumer in an agreed ratio. By this arrangement the government ensured that the consumer got a reasonable share of the benefits following from efficient management; the profit motive - the best spur to efficiency, according to Dr Price - was maintained; and the producing firm was able to operate at its optimum size. Dr Price suggested that after suitable study, and with such modifications as might be necessary, a similar system might be extended to other industries. If it were true that private enterprise had failed to exploit the fishery resources of South Africa to the best advantage, then some such arrangement should be considered for the fishing industry.

It is clear that there would have been certain complications in applying Dr Price's proposals to the fishing industry. They assume one large producer, or at most only a few. There was one large firm in the fishing industry, but there were also a large number of small-scale fishermen. Were they all to be licensed, and if so, could the terms of their licences have been supervised and enforced without an army of officials? Again, there were only a few buyers of the Victoria Falls Power Company's product; the buyers of fish are multitudinous; would not this complicate the scheme? And perhaps most difficult of all; fish is not a homogenous product, and its condition varies from day to day. Electricity can be measured out in exact units; each unit is like any other unit, and a unit supplied on Friday is the same as a unit supplied on Thursday. There are many types of fish; prices vary with demand and supply, to some extent with changes in fashion, and are also affected by day-to-day changes in the condition of the fish, which may only remain saleable for a few days unless specially treated. But all these were difficulties of detail. If they could be overcome, there were obvious attractions in Dr Price's proposal.

This, at any rate, appears to have been the view of the senior public servants in the Department of Commerce and Industries; for in their explanation of the powers conferred in the Bill, they pointed out that the powers conferred on the Governor-General were tantamount to a licensing system, but one that was better adapted to the fishing industry.

8. The Views of the Department of Public Health.

The Department of Public Health was interested in the Fishing Industry Development Bill because many of the small fishing villages on the coast had become "problems" from the public health point of view. The main reason for this was that the only consideration in the siting of the villages was the availability of fish. Water supplies, in particular, were generally variable and inadequate. There was often poor inland communication. There was much idleness and drinking among fishermen; the weather kept actual fishing time down to about 100 days a year; lack of water and poor soil made it impossible for the fishermen to occupy their spare time by growing vegetables or keeping cattle or goats; cut off from the outside world, these fishermen had become satisfied with their "deplorable conditions", and were an "indolent, improvident, and intemperate group of people". The Department of Public Health looked to a reorganisation of the inshore fishing industry to end this undesirable state of affairs. "The progress made at Gansbaai during the last 15 years, resulting from the provision of an adequate water supply, a good road and harbour facilities, proves what can be done for the betterment of these people in a comparatively short time."¹¹³

It is generally agreed that reasonable harbour facilities and good inland communications are necessary to the prosperity of a fishing village. A good water supply is of course necessary to the well-being of any community. Supplied with these necessities, small fishing communities could have existed along the South African coast. Harbour facilities

would have made possible the use of larger boats; better inland communications would have made it easier to dispose of the larger catches the bigger boats would have brought in, and would also have allowed more goods from the interior to reach the fishing villages. A good water supply would have made it possible for the fishermen to occupy the days when they could not fish with agriculture; in this way they would have increased their standard of living, and at the same time done away with the harmful periods of idleness. This was the sort of development that the Department of Public Health apparently hoped that the Bill would bring to the inshore fishing villages. In fact, development took rather a different form, as will be shown later.

9. Contemporary Newspaper Comment.

It is debatable how far newspaper comment may be considered to reflect public opinion. On the one hand, newspapers have characters, both political and non-political, which those who work for them are required to assume to some degree; in addition, people who write for newspapers have views of their own, which they occasionally express. For both these reasons the points of view expressed by newspaper commentators may be out of line with public opinion. On the other hand, newspapermen are in continual touch with a large slice of the general public, and many of the people with whom they are in touch are influential people - opinion-makers. Further, a newspaper depends for its success at least partly on reflecting the views of its readers. Both these reasons suggest that the views of newspaper commentators will often coincide with the general climate of public opinion. In fact, in matters that are not in dispute between political parties, newspaper editorials often reflect, not the view of the expert, nor the view of the man in the street, but the view of the moderately well-informed person who is interested in the day-to-day events going on around him and

is in touch with the leaders in the business and political worlds. If this is true, then the newspaper comments on the Fishing Industry Development Bill suggests that there were conflicting currents of public opinion over it.

A leader in the Cape Times on February 4th, 1944, was almost wholly in favour of the Bill. "Some such measure is long overdue. The Union's are among the richest fishing waters in the world; yet in contrast with the well-organised trawling industry, our inshore fisheries are a higgledy-piggledy mess of unco-ordinated small enterprises, paying little profit and not breeding up good citizens. This in fact will be the biggest difficulty of the Fishing Corporation proposed in the Bill. As Mr Waterson put it diplomatically yesterday, the inshore fishermen have developed characteristics which will make the Corporation's task very difficult. But that should be a spur to action rather than a deterrent...

"What has been clear for years is that our immense fishing resources have not been used to the full..... This fact alone is enough to justify the fullest development of an industry which can produce immense quantities of the most nutritious food at a reasonably low price.

"As recent letters to our columns have shown, the trade regards the Bill with some suspicion, and fears further state interference. The answer is, that when rich and necessary natural resources are not adequately used, it is the duty of the state to see that they are properly developed. The world is rapidly coming to take the view that food is as much a public utility as electricity and water; and that if private enterprise is incapable of bringing an easily obtained commodity like fish to the poor man's table, then the community through a public corporation should undertake the job."

But this early enthusiasm on the part of the Cape Times for the Bill soon evaporated. On April 24th another leader on

the subject appeared, and this time the newspaper took quite a different point of view: "It would be idle to deny that the Fishing Industry Development Bill, even in the revised form in which it has emerged from the Select Committee, has aroused a large volume of responsible opposition throughout the country. Much of the criticism is well founded. The Bill as originally drafted threatened state-directed interference in a sphere of private enterprise on a scale which provoked the opposition of people and organisations not all of whom can be accused of being influenced by vested interests...." The Cape Times went on to say that the powers which the Bill proposed to give to the Minister of Commerce and Industries were unnecessarily wide. The present Minister would probably not himself misuse those powers; but it was in principle undesirable that they should be given. "There is no difference in principle between the case which can be made out for state intervention in the fishing industry, and the cases which can be formulated for similar intervention in the wheat industry, mealie-farming, cattle-raising, and a dozen others.... There are spheres of organisation in which government organisation is the only solution - Mr Waterson made out a case for inshore fishing falling into this category - and at the same time it is unanswerable that the functions of the private entrepreneur can be abrogated in our society only at tremendous cost to the health and prosperity of that society.... The Bill takes powers for state monopolistic action - even if that action is circumscribed - without adequate evidence that these wide powers are justified in the public interest..... The Minister would be wise, even at this late stage, to limit himself to taking powers sufficient for dealing with the immediate situation which he wishes to remedy....."

The reasons for this apparent change of attitude are, I think, fairly easily explained, and are to some extent implicit in the words used. One of the most powerful opponents of the Bill in its original form was the big trawling firm of Irvin and Johnson. (Mr George Irvin's

memorandum to the Select Committee included an emphatic protest against the control by the Fisheries Development Corporation of the sale of trawled fish; and Mr W. Abao, the Managing Director of Irvin and Johnson at the time, told the Select Committee that he feared that if the Bill were passed "the price of fish to the trawling companies would be put down to the absolute minimum so that it would be impossible for trawlers to operate.")¹¹⁴ Partly as a result of this interested opposition, pressure grew up, both inside and outside parliament, to exempt the trawling industry from some of the provisions of the Bill, and more especially to exempt it from the forced sale of its fish through a centralised, Corporation-controlled, distribution organisation. It was this opposition which had now found a mouth-piece in the "Cape Times". The leader-writer admitted that a case could be made for government control of the inshore fishing industry, but that private enterprise could only be abrogated at "tremendous cost" and that the Minister should confine his powers to "the immediate situation he wishes to remedy" - by which one is intended to understand the bad social conditions in inshore fishing. The real point behind the leader was: "Hands off the trawling industry." And, in the event, the Minister heeded this advice; he agreed in parliament to exempt the trawling industry from the clauses by which fishermen could be forced to sell their fish to the Corporation at prices determined by the Corporation. This compromise - which to some people "knocked the bottom out of the Bill", was welcomed by the Cape Times in a leader that appeared on May 10th:-

"The Fisheries Development Bill as amended will now probably be passed unanimously by the House and applauded by the country.... The Minister was wise in taking notice of protests The amendments which have been and will be made provide statutorily for the retention of the element of competition. Compulsory sales through one-designated channel will now be limited to inshore fishing, leaving the trawler-caught fish as a standard of price and efficiency

against which the state-aided Corporation must compete.... The original purpose of the Bill, which is to rationalise inshore fishing, has not been affected, and the State is thus enabled to intervene in a sphere of economic activity to an extent which is patently beyond the power of private enterprise. If rationalisation is possible at all, the Corporation ought to be able to achieve it, and if it does so, not only will an important industry be helped, but the consumer should benefit by a lower price..... The Fisheries Bill.... enables the State to play a part which private enterprise cannot play, and at the same time preserves the sound features of ordinary commercial competition."

(It might be worth mentioning that the hope expressed in the leader that trawler-caught fish would act as a standard of price and efficiency against which the activities of the Corporation could be measured showed some misunderstanding of conditions within the fishing industry. The inshore fishermen's most valuable catch was snoek, though they also caught hottentot, galjoen, stumpnose, roman, mullet, and many others. The trawlers main catches were stockfish and soles, although they too caught many other varieties. The point is that the catches of these two sections of the industry were only to a very limited degree competitive, and so the trawler-caught fish could hardly act as a standard of price and efficiency for the products of the inshore fishermen and the Corporation).

10. A Summary of Aims and Methods.

From a consideration of the earlier sections of this chapter, some sort of picture may be drawn of what those interested in the Bill of 1944 hoped to achieve, and how they hoped to achieve it: and this leads to a list of aims and methods:

NB/ (a) To improve the social conditions of the inshore fishermen in the fishing villages. This was one of the main aims of the Bill, and perhaps its main motivating force. Improved social conditions would involve, of course, a greater earning capacity.

(b) The development of South Africa's fishery resources. This is putting it in the more generalised fashion; perhaps it would be better to put it in the more concrete way: cheaper fish. Cheaper fish (so it would have seemed) involved more fish, and more fish meant the development of the fishing industry. So whichever way it is put it comes in the end to mean much the same thing. But what the housewife wanted was cheaper fish.

These were the two main motive forces behind the Bill. The other "aims" or "methods" were either variations or special aspects of these aims, or ways in which it was hoped they might be achieved.

(c) Re-organising the inshore fishing industry so as to make it more efficient. By this means the supply of fish would be increased without an increase in costs - so leading to cheaper fish - and at the same time the earnings of the inshore fishermen would be increased, so leading to better social conditions among them. Thus both the main aims of the bill would be achieved simultaneously. This was one of the lines of approach suggested in the memorandum submitted by the Department of Commerce and Industries. Whether the inshore fisheries could be so re-organised so as to give more earnings to the fishermen as well as cheaper fish to the public was, of course, another question.

(d) Some people inside the fishing industry hoped that the bill would encourage more research into fisheries. How general this view was, and how deeply it was held, is difficult to estimate. Certain experts clearly saw the need for research. But research is the sort of ideal to which

lip service is readily given - and often not much more. As already noted, the research was often mentioned before the Select Committee, but was little discussed. Another, later, event also casts some light on the real strength of the demand within the fishing industry for basic research. Towards the end of the 1940's, there was a proposal that a levy on landings be made, so as to raise money to pay for a larger statistical service. The proposed levy was one-fortieth of a penny on each pound of fish landed; it was hoped that this would yield a total of £20 000 a year. This proposal was turned down by the fishing industrialists. One might conclude that while some knowledgeable and far-seeing industrialists were fully aware of the importance of statistics and basic research, there were others whose enthusiasm was no more than lukewarm.

(e) "Milk" the trawling industry in order to supply the funds for rehabilitating the inshore fishing industry. This was the second line of thought running through the proposals of the Department of Commerce and Industries. It was not so clearly expressed as the plan for the reorganisation of inshore fishing, but the proposal to take over the distribution of fish from the trawling companies, combined with the suggestion that the "highly prosperous" sections of the industry should be permitted to be no more than "reasonably prosperous" show clearly enough that there was some plan of this sort in mind.

(f) End the "excessive profits" made by the middleman or the distributor. This is a recurrent theme that runs through the minds of ordinary people when they want to do something to reduce the price of any given commodity. They find it difficult to believe that the cost of distributing a good may be two or three times the cost of producing it. During the hearings of the Select Committee a good deal of cross-examination was aimed at showing that the costs of distributing fish were unduly high or that excessive profits

were made on distribution. (See, for instance, the exchange between Mr Sonnenberg, a member of the Committee, and Mr H. Abao:-¹¹⁵

"I have worked it out that your fish costs you 2d per lb landed in Johannesburg? - I deny that.....

"Assuming that the price is in the neighbourhood of 2d per lb, which I claim it is on your own showing, you will agree that the margin between what the producer gets and the consumer pays 7½d is rather large? - The Distribution Costs Commission is at present examining this matter and I suggest that we leave it in their hands.

"It does not cost you more to catch soles than it costs you to catch stockfish? - Yes, that is right.

"So that the price of soles at 1s.4d per lb. - I am speaking of the retail price in Johannesburg - is very high. You do not think the difference between the price which the producer gets and what the consumer pays is very big? - I do not consider it is very big.

"You do not think it is? - No."

Later, Mr Miles Cadman directed further cross-examination at Mr Abao suggesting that Irvin and Johnson were unwilling to hand over their distribution network to the Corporation because of the large profits they made on distribution).

It may well be that the belief that distributors make over-large profits is often unjustified, and that it fails to take account of the heavy costs of distributing a relatively cheap but highly perishable commodity in a big, hot, and thinly populated country. The fact remains that such beliefs are widely held. Part of the motivation of those

who wanted to see the Irvin and Johnson distribution organisation taken over ^{by} the Corporation was the belief that there were big profits to be made out of distribution.

(g) Another aim of some of those who supported the Bill was to end the supposed monopoly profits of the large trawling companies. To such people, private enterprise was desirable so long as there was competition; when competition disappeared, then it would be preferable for the State to take over and run the business as a public monopoly, rather than to allow the profits to be taken by private entrepreneurs. This was another reason for the proposal that the Corporation should take over fish distribution. Clearly, it was closely allied to the belief that the profits of distribution were unduly high.

(h) Mr Erasmus in Parliament spoke of the need to "stabilise" the fishing industry and to "prevent fluctuations in the fish market".¹¹⁶ It may seem strange that supporters of the free enterprise market system should want to "stabilise" the industry and prevent market fluctuations, since it is precisely by fluctuations in price that the free market system works. Yet those familiar with the sale of food products will have no doubt what he meant. Violent fluctuations in prices mean that the producer may be arbitrarily, unfairly, and seriously prejudiced by price changes which he can neither control nor avoid. Many agricultural marketing schemes aim precisely to iron out such fluctuations. Beyond this, Mr Erasmus may have had a second meaning. Those great spurs of the competitive market system, rewards through profits for the successful, punishment through losses for the unsuccessful, may be desirable enough from the point of view of the economics expert, who from the security of a safe job can look to the good of the community as a whole. They look rather different

to the industrial or business leader. To him, they represent lack of security, the impossibility of ever relaxing; and there are many heads of businesses who would like to be able to run their affairs in a more routine way, without having to be ever on the alert for changes that require action and effort. In other words, it is pleasanter to work in a stable industry than an unstable one; and no doubt there was some thought of this sort in the mind of Mr Erasmus when he called for a stabilised fishing industry.

(i) One solution to the problem of combining the advantages of State control with the benefits of free enterprise was the system of licensed monopolies advocated by Dr Bernard Price. This was considered in some detail by the Select Committee, and was to some extent embodied, in fact if not in form, in the Bill.

(j) On the other hand, Professor Frankel's warnings about the dangers of semi-autonomous bodies clearly had some impact on those connected with the framing of the Bill, and some of the restrictions laid upon the Fisheries Development Corporation, especially in regard to its duties to report to Parliament and to obtain special sanction for certain acts, no doubt sprang from the fear that without such sanctions the Corporation might become one of those dangerously independent bodies to which Professor Frankel was opposed. (The two other professional economists who gave evidence before the Select Committee do not appear to have had much influence in shaping the Bill into the form which it finally took. Professor Schuman's general comments were hardly capable of being translated into legal enactments, though his more detailed comments on the clauses of the draft bill may have had some effect. Professor Hutt wrote as the self-appointed representative of the consumers, but there was little in the Bill as it finally emerged from Parliament to suggest that his proposals had carried much weight with those who framed the Bill).

NB (k) Finally, there were some who looked simply to the Bill to remedy the physical disabilities under which many fishing villages suffered. One way to have improved the social conditions in the fishing villages might have been to have given them better water supplies, better communications, better harbour facilities, and perhaps better housing. It could be argued that these changes alone, without any other form of government interference, would have been enough to enable the inshore fishermen to earn a reasonable living and so improve their social conditions. Such action might therefore have achieved one of the main objects of the Bill without any attempt to take over, reorganise, or rationalise the fishing industry.

The various aims, methods, and points of view here listed are of interest because most of them were of influence in shaping the final form which the Fishing Industry Development Act of 1944 took. In the next chapter an outline of the terms of the Act will be given, and an attempt will be made to assess the parts which the different ideas here listed played in its final form. Before going on to this, it might be worth mentioning one curious omission in all the thinking and discussion that went on before the Fishing Industry Development Bill became law. In all the evidence given before the Select Committee, during the debates in Parliament, among the articles and letters that appeared at this time in the press, there is hardly a word about fish conservation or the need to preserve the resource on which the industry was based. It is not strange that fish conservation was not mentioned in the Act. That was hardly to be expected, since the Act was concerned with other aspects of the organisation of the fishing industry. But the form which the Act took depended, as it had to do, on government policy towards the fishing industry as a whole; the discussions and public debates that took place before the Act was passed concerned the fishing industry as a whole, and what government policy towards it should be. In these larger issues of fishery control,

the issues of fish conservation and preservation of the fishery resource are so important that it is hard to imagine a discussion that ignores them. Yet this is what happened in the debate over the Fishing Industry Development Bill. Mr George Irvin, in his memorandum to the Select Committee, touched briefly on the question of falling catches; otherwise this aspect was hardly mentioned.

Additional evidence of this non-awareness is that none of the criticism of the alleged dumping of fish back into the sea made the point that this was depleting a resource. All criticism was that this was done to create artificial scarcities in the market which otherwise would have been more fully supply from a resource which was too ample from the trawling companies' point of view. *

It was not that there was no knowledge of the need for conservation; the experts were well aware; regulations existed; experiments had been carried out. But apparently the non-expert was not yet aware of the fragility of the fishery resource; and this may have been not without its effect on the subsequent history of the fishing industry.

* I am grateful to Dr H.M. Robertson for drawing my attention to this additional evidence.

IV. THE BILL OF 1944 : ITS CONTENT

The Fishing Industries Development Act (Act 44 of 1944) was assented to by the Governor-General on June 6th, 1944. Its provisions fall into five main sections:

1. The setting up of the Fisheries Development Corporation.
2. The establishment of a Fisheries Development Advisory Council.
3. The establishment of controlled fishing areas.
4. The registration of fishermen and fishing boats.
5. The control of the marketing of fish.

1. The Fisheries Development Corporation.

The Act laid down that on a date to be decided by the Governor-General a corporation to be known as the Fisheries Development Corporation of South Africa Limited was to be established. Its aims were laid down in detail:

"(a) To establish and manage, and to facilitate or assist the promotion, regulation, or better organisation of the catching or sale of fish, and to finance or to facilitate or assist in the financing of such schemes; provided that any such scheme relating to the sale of fish may provide for the sale of fish by the Corporation on behalf of fishermen.

"(b) To carry on the business of buying, selling, processing and marketing fish, fish products and seaweed, of manufacturing fish products and products wholly or partly derived from seaweed, and fish farming.

"(c) With the approval of the Governor-General to take or otherwise acquire or hold shares or stock or securities in any company engaged in catching fish or having objects wholly or in part similar to those described in paragraph (b).

"(d) With the approval of the Minister* to establish or carry on or to assist in the establishment or carrying on of mutual benefit and medical benefit societies, sporting and entertainment societies, social clubs, townships, housing, utility companies, home ownership schemes, social and health services, pension and provident funds, stores, hospitals, hostels, restaurants and other similar undertakings which may seem to the Corporation beneficial or capable of being beneficial to the fishermen registered under Section 24, or to employees of the Corporation."

A careful reading of these four sub-paragraphs shows that they set before the Corporation aims of two different types. The first aims are those set forth in sub-paragraphs (a) and (d); they relate to schemes for direct intervention by the Corporation to improve conditions in the fishing industry, either by the reorganisation of sections of the industry, or by the carrying out of what might be classed as welfare schemes - benefit societies, home ownership schemes, and so on. These aspects of the Corporation's activities were to be known as the "A" objects of the Corporation. The second group of activities were those set out in sub-paragraphs (b) and (c). These allowed the Corporation to take part in the fishing business as a catcher or a distributor, and also to take shares in other fishing companies. These activities were to be known as the "B" objects of the Corporation.

In order to allow it to attain these objects, the Corporation was given certain specific powers. They included:-

- (a) The power to acquire and to lease out fishing boats, or fishing equipment.
- (b) The power to build, buy, and control jetties or harbour equipment.
- (c) With the approval of the Governor-General, to acquire fishery undertakings, property of other sorts, or patent rights.
- (d) Again, with the approval of the Governor-General, to invest money in industrial or commercial enterprises, and more especially in fishing enterprises.

* The Minister referred to was the Minister of Economic Development.

- (e) The power to finance or promote research.
- (f) With the approval of the Governor-General, to finance or promote fishing companies.
- (g) The power to promote insurance schemes for fishermen.
- (h) The power to borrow from the Government or from commercial banks.

There were also detailed arrangements for the financing of these activities. The Corporation's capital was to take the form of two types of shares, to be known as "A" and "B" shares, and to be used to finance the Corporation's "A" and "B" activities - "A" activities to be financed only with "A" shares, "B" activities only with "B" shares. The "A" capital was to consist of 500 000 £1 shares, to be made available by Parliament, and to be held by the Governor-General, who might not transfer them. No fixed sum was laid down in the Act for the "B" shares. Fifty thousand "B" shares were to be set aside for sale at £1 each to fishermen - but not to trawlermen; the buyers of these shares were not to be permitted to transfer them. Individual holders of "B" shares were limited to a maximum holding of 100. Such remaining "B" shares as might be issued could also be bought by the Governor-General; but if he did not want them, they might be offered for sale to the general public. It was further laid down that the dividends that might be paid on "A" shares were not to exceed 4% per annum, and on "B" shares were not to exceed 6% per annum. And the Governor-General, by virtue of his holding of "A" shares, was deemed to be a majority shareholder and to control a majority of votes at any shareholders meeting.

The Act laid down that the Corporation should keep two separate accounts, one for its "A" activities and one for its "B" activities. The Minister (of Economic Development) was to appoint an auditor who each year would examine the accounts and draw up a balance sheet and a profit and loss account for each of the Corporation's two spheres of activity. These would be transmitted to the Minister. The auditor was empowered to examine the Corporation's books,

to summon and interrogate witnesses, and to draw the Minister's attention to any irregularities. Further, the Corporation was required to transmit promptly to the Minister minutes of Board meetings or of Shareholders meetings, and of any decisions taken at them. These reports and accounts were required to be laid before Parliament without delay. (Except for the minutes of Board meetings, which though furnished to the Minister were not laid before Parliament).

The effect of these arrangements was that the Corporation would be financed partly by the Government and partly by private investors, of whom, it was hoped, a substantial proportion would be fishermen. Although the Corporation would conduct its own affairs within the limits laid down for it, the Government would have ultimate control of Corporation policy, through its power to appoint or dismiss directors, as majority shareholder. Finally, the regulations as to accounts and reports to Parliament made it difficult, perhaps impossible, for the Corporation to conceal any important activities it might undertake from the Government. The Corporation was in one sense to be independent; in another it was to be very much subservient to the Government.

2. The Fisheries Development Advisory Council.

The Act directed that an advisory council was to be set up to advise the Minister on matters connected with fishing. The Council was to consist of a Director (to be appointed by the Minister) and at least seven members, although additional members might be appointed at the discretion of the Minister. Of the seven members, one was to be a scientist; one was to represent the trawling industry; one was to represent fishermen who were not trawlermen; one was to represent fish canners; one fish distributors; and one the Fisheries Development Corporation; and finally there was to be one member of the Council to represent the interests of consumers.

3. Controlled Areas.

The Act laid it down that the Government might proclaim controlled fishing areas, in which the catching of fish was to be regulated. And in each controlled area there was to be a Local Advisory Committee, which would consist of a Chairman (to be appointed by the Minister) and three members, who were to be fishermen registered in the area.

4. Registration of Fishermen.

Those who wanted to fish in a controlled area would have to register ~~there~~ as fishermen. Those who had been full-time fishermen in the area in the past would have the right to be registered there; and the children of such fishermen were also to have the right to be registered; but "outsiders" were to be registered only at the discretion of the Minister, and he might decline to register any further "outsiders" in the area, if he considered that enough fishermen had been registered there already. There is not a great deal to be said about these three sections of the Act. As will become apparent later, the Advisory Council does not appear to have had much influence on the development of the fishing industry. The setting up of controlled areas, and the registration of fishermen, were simply administrative devices by which the Government proposed to carry out the objects it had in mind.

5. The Control of the Marketing of Fish.

The powers which the Government took under the Act to control the marketing and distribution of fish were the most contentious, as well as the most far-reaching, sections of the Act. Under these powers the Government might forbid any person to sell fish except to the Fisheries Development Corporation, or to some company which had been promoted by

the Corporation and which the Corporation had designated for this purpose. Further, it could become an offence for any person, other than the Corporation or its designated company, to buy fish for purposes of re-sale from any fisherman. In addition, the Government was empowered to lay down the prices at which the Corporation might buy and sell fish. And the Government was also empowered to regulate the import of fish into the Union.

These powers, had they been used, could have given the Corporation effective control over the Union's entire fishing industry. (With one exception to be mentioned shortly). It is true that the Corporation was not given powers itself to participate in the catching of fish. But it was given power to acquire shares in undertakings which caught fish. It was perfectly possible, therefore, for the Corporation first to have forbidden fishing companies to sell their catch to anybody but itself, and secondly to set the price at which it would buy so low that the company could not continue in business. The company would then have been forced to sell out, and the only buyer would have been the Corporation, since any competitive buyer could have been forced out of business just as easily. As far as distribution went, the Corporation was specifically empowered to undertake this. Therefore the Corporation could have controlled the whole fishing industry, the catching side through shareholding, the distribution side through direct participation. And the Government's powers to regulate the import of fish would have prevented any outside interference with this arrangement. However, these wide powers were considerably modified by two factors which must now be mentioned:-

The first factor was a statutory limitation: trawled fish were exempted from all the above provisions. This was the amendment, introduced late in the parliamentary debate by the Minister, which according to some critics "knocked the bottom out of the Bill". Trawled fish were, in fact, more

than half the fish landed in the Union. Irvin and Johnson's distribution network - the alleged monopoly which some people were keen to see broken - was built up on trawled fish. It is true the network distributed some other fish as well. The exclusion of these fish from the Irvin and Johnson distribution system might have been a serious blow to the company; but it would hardly have amounted to a disaster; the company could still have carried on. On the other hand, it is difficult to see how the Corporation could have organised a distribution network based only on the fish caught by the line fishermen and the inshore fishermen. The difficulties - scattered sources, irregular supplies, poor communications to the fishing villages - would have been immense; the costs prohibitive; and the attempt quite uneconomic, seeing that a functioning distribution system capable of dealing with the Union's entire catch already existed. Therefore it can be argued that the exclusion of trawled fish from the proposals for controlled marketing really made the whole proposal a practical impossibility.

The second factor that tended to modify, or might have tended to modify, the wide powers given by this section of the Act was the aim of the legislation. It was explained by the Department of Commerce and Industries that it was not so much the intention that the Corporation should undertake fish distribution, as that it should use these powers to persuade the undertakings in the fishing industry to carry out its wishes. It was for this reason that a clause was included empowering the Minister to exempt any fishermen he chose from the provisions of this section of the Act. There were apparently two possibilities. One was that the Corporation might actually set up its own distribution system, and, having done so, force all those to sell to it who did not accept its conditions. The second possibility was that the Corporation would not need to go as far as this. The mere threat that the Corporation might set up a selling and distribution organisation with compulsive powers might have

contributed to the final result are blended into one view; or it may be a mixture in which the ideas of the different contributors remain relatively undigested and continue to exist side by side in the final mixture. (Sometimes this may happen even when the contributions thus left together are really incompatible). Generally there is neither a complete blending of the different views into a homogenous final product, nor are the original contributions left unchanged; there is some change, but not, as it were, complete digestion. Some process of this sort is the almost invariable result of a number of people sitting round a table and trying to draw up a measure such as the Fishing Industry Development Bill. It is often of interest to see how the views of particular individuals interested in a legal measure were incorporated in the measure in its final form. An earlier section of this study listed eleven "aims and viewpoints" of various groups of individuals who were interested in the development of the fishing industry. In this section, the "aims and viewpoints" will be reconsidered, and an attempt will be made to see how the different points of view were incorporated or reconciled in the Act.

The first aim mentioned was the improvement of the social conditions of the inshore fishermen. This aim is clearly set forth in sub-section (d) of clause 3 of the Act, in which the aims of the Corporation are stated to include mutual benefit societies, social and health services, home ownership schemes, and "any other similar undertakings which may seem to the Corporation beneficial or capable of being beneficial to fishermen". A similar approach is re-echoed in clause 4, subsection (i), in which the Corporation is empowered to insure fishermen. Thus the first main aim of the measure is securely set down in the actual wording of the Act.

The second main aim of the Act was given as the development of the fishing industry, which was equated with the supply

of cheaper fish. Apart from the title of the Act, this aim is not mentioned at all. Nowhere is it suggested that an increase in the supply of cheap fish to the general public should be one of the aims of the Corporation.

- ④ Professor Hutt had suggested, in his memorandum to the Select Committee, that the purposes of the measure, including an increased output of fish, and the cheapening of fish, should be specifically included in the wording of the Act; he also suggested that the Corporation should not be allowed to make any profits until it had succeeded in bringing about either an increase in the consumption of fish, or alternatively, a considerable fall in the retail price of fish. None of these suggestions were adopted in the final wording of the Act. No doubt one reason for this was that it would have been difficult to give them effective and enforceable legal form; but probably an even more potent reason was that there were no persons with special interests to press for the specific inclusion of cheap fish as an aim of the Act. In such matters, people with special interests are able to make their views felt; views which command general agreement but have no special interest to support them are apt to be overlooked. So it was that one of the main aims of the Act received no specific mention in its wording.

The third aim mentioned was to reorganise and rationalise the inshore fishing industry. This aim finds clear expression in the Act. Clause 3(a) gave as one of the aims of the Corporation "the promotion, regulation, or better organisation of the catching or sale of fish." Clause 4(a) empowered the Corporation to lease out fishing boats or fishing equipment - and it was intended that the boats and equipment should be leased to inshore fishermen. Clause 4(c), empowering the Corporation to buy up fishing businesses; clause 4(f), empowering it to buy shares in fishing companies; clause 22, authorising the establishment of controlled fishing

areas; and clauses 23 to 27, which were concerned with the registration of fishermen - all these were expressions of the aim to reorganise the inshore fishing industry.

The fourth aim mentioned was the encouragement of fishery research. The Act did not include this among the direct aims of the Fisheries Development Corporation. However, among the powers given to the Corporation to allow it to attain its aims, was that of financing or promoting research. It was not itself given the power to carry out research, which it was scarcely equipped to do. No doubt it was expected that the Division of Fisheries would carry out any research work which the Corporation might wish to promote or finance. This, at any rate, was the expectation of the Director of Fisheries, Dr C. von Bonde, when he gave evidence before the Select Committee. Asked if there might not be an overlap if both the Corporation and the Division of Fisheries carried out research; he replied:¹¹⁷ "The Division of Fisheries will be the only body carrying out research work on behalf of the fishing industry and the corporation. The corporation will not be conducting research. In other words there will be no overlapping. It is provided for in the bill that the corporation can conduct research, but the Division of Fisheries will do it just as it has always been done previously...." If one accepts this, one must conclude that although research was mentioned in the Act of 1944, it was the intention of those concerned in passing the Act that research should go on much as before.

The fifth aim mentioned was to take the "excessive" profits of the trawling industry and use them to improve conditions in the inshore fishing industry. There are several clauses in the Act that suggest that this was an aim of those who drew up the Act, and which could have been used to further this aim. Thus Clause 3(b) set down trading in fish as one of the objects of the Corporation; Clause 3(c) gave the acquiring of shares in fishing companies as another; Clause 4(c) empowered the Corporation to buy up fishing businesses; Clause 4(f) empowered it to buy shares in fishing companies; Clause 4(h) empowered it to promote and finance fishing

enterprises; Clause 28 empowered the Corporation - with the consent and support of the Government - to set up a centralised distribution organisation and to compel all fishermen to sell to it at prices fixed by the Government. All these clauses could have been used to allow the Corporation to gain control of the entire fishing industry. But the addition of the sentences exempting trawled fish from the centralised distribution scheme effectively neutralised all these provisions as far as the trawling industry was concerned. The wording remained in the Act, but from the point of view of "milking" the trawling industry it became of no practical importance; the words thus reflected the political history of the Act and the last-minute decision to exempt the trawling industry from the provisions of Clause 28.

The sixth aim mentioned was the ending of excessive middlemen's profits, and the seventh aim, the prevention of monopoly in the fishing industry, or, if this should prove impossible, at least the substitution of a State monopoly for a private monopoly. All the clauses which could have been used to set up a centralised distributing organisation could also have been used with this aim in view - indeed, the views that middlemen were making excessive profits, that the distribution of fish was a monopoly, and that the State ought to take it over, were all bound up with each other. However, while the decision to exclude trawled fish from the proposed centralised distributing organisation entirely ended the aims of "milking" the trawling industry or substituting a State-run monopoly for a private one, the aim of ending excessive middlemen's profits was only partly undermined; if excessive middlemen's profits were being made in the inshore fishing industry, then the Corporation might still have been in a position to take over the distribution of inshore-caught fish and to make a profit on it. But this, of course, depended on the assumption that middlemen in the inshore fishing industry were making excessive profits. If they were not - and there is little

evidence to show they were - then it was unlikely that the Corporation would be able to make much profit itself from distributing inshore-caught fish, and, in any event, there would be no excessive middlemen's profits to be ended. This is really another aspect of what has been pointed out already; that the exemption of trawled fish made it practically extremely difficult, if not impossible, for the Corporation to set up a centralised distributing system; therefore the powers that the Corporation was intended to obtain from its ability to do this, or its ability to threaten to do this, to a large extent fell away. So the position as regards the sixth and seventh aims is similar to the position regarding the fifth aim: the wording is there to suggest that these were indeed objects aimed at by some of those who helped frame the Act; but the last-minute decision to exempt trawled fish rendered them of no or little effect.

The eighth aim mentioned was the stabilisation of the fishing industry. Clauses 24 to 27 of the Act, which deal with the registration of fishermen, taken in conjunction with Clause 22, which dealt with the establishment of controlled areas in which only registered fishermen would be permitted to fish, would have allowed the Government to impose a measure of stabilisation on the industry by controlling the number of people allowed to take part in it. Clause 28, which allowed the Government to fix fish prices, could also have been used as an instrument of stabilisation. So this aim, vague as it might have been, did receive effective expression in the Act.

The ninth aim mentioned was the setting up of licensed monopolies of a type similar to the Victoria Falls Power Company. This was the plan advocated by Dr Bernard Price. As already explained, Clause 28, which permitted the Corporation to set up a centralised distributing organisation to force fish producers to sell only to this organisation, and to exempt them from this compulsion provided they conformed to the Corporation's wishes, was

intended to be a variant of the "licensed monopoly" plan. So this aim also received expression in the Act. But the exemption of trawled fish undermined its effective force, so that it is doubtful if the Corporation would have been able to impose any system resembling one of licensed monopolies, even had it wished to do so.

The tenth aim mentioned - although it was a point of view, not an aim - was Professor Frankel's, that semi-autonomous public bodies were a danger to the economy because they were not, on the one hand, subject to the incentive of competition, nor, on the other, were they effectively controlled by Parliament. For these reasons Professor Frankel was apparently opposed to the setting up of the Fisheries Development Corporation at all, especially if it were not to be directly accountable to Parliament. The Corporation was, of course, established: but Professor Frankel's warning found expression in the clauses of the Act which made the Corporation directly accountable to Parliament; Clause 18, which laid down how the Corporation should keep its accounts, and instructed that they were to be examined annually by an auditor appointed by the Minister of Economic Development; and Clause 20, which laid down that the auditor's reports should be laid before Parliament, together with reports of all decisions taken at Board meetings and Shareholders meetings. The clauses under which the Corporation could only undertake certain activities with the specific consent of the Governor-General were further checks on the autonomy of the Corporation. Thus the Corporation needed the Governor-General's consent to buy up fishing businesses (Clause 4(c)); to buy fishing shares (Clause 4(f)); to promote or finance fishing enterprises (Clause 4(h)); and Clause 28, which related to the setting up of the proposed central distributing organisation, required special action by the Governor-General.

The eleventh and last aim mentioned was that the Government should use the Act to build up the infrastructure on which a prosperous fishing industry could be developed - which meant

essentially better roads and better harbour facilities.

These aims received little expression in the Act.

Clause 4(b) empowered the Corporation to establish, or to run, wharfs, factories, and so on. There was no mention of improved transport facilities, though lack of good transport inland had been one of the main factors inhibiting the growth of the inshore fishing industry.

V. DEVELOPMENT OF THE FISHING INDUSTRY, 1944-1970.

So far, I have given a brief outline of the history of fishing in South Africa, and have attempted to sketch the state of the industry as it was in the early 1940's. I have considered the aims and viewpoints of some of the people who were interested in the passing of the Act of 1944. And I have tried to discover how far those aims and viewpoints were embodied in the wording of the Act. The present section will deal with the development of South African fishing between 1944 and 1970, and will attempt to estimate how far the history of the fishing industry during that period reflected the aims of those who had been interested in the Act.

However, not all the "aims and viewpoints" mentioned will be considered in this section. Not all of them were realistic, and not all of them were realisable. Also, some "aims" overlapped others, so that to deal with both would lead to unnecessary repetition. Thus the improvement of the social conditions of inshore fishermen overlaps the re-organisation of the inshore fishing industry. The aim of "milking" the trawling industry for the benefit of the inshore fishing industry had fallen away by the exclusion of trawling from the workings of the Act. The ending of excessive middlemen's profits could only have taken place if there had been excessive profits to end; and there was no convincing evidence that excessive profits did in fact exist. The prevention of monopoly, or the replacement of private monopoly by a State-controlled monopoly, again depended on how far the industry was, in fact, monopolistic, and how far the monopoly, if it existed, was undesirable. Both these questions were highly debatable. The "stabilisation of the industry", though a comprehensible aim, would be difficult to pin down or quantify. And the "aims" of licenced monopolies and parliamentary control of the Fisheries Development Corporation were not so much aims in themselves, as methods by which the other aims of the Act might be achieved. If these "aims" be ignored, then three aims remain: (a) the development of the fishing industry itself - that is, an increase in the

quantity of fish caught, which - it was hoped - would go hand in hand with a decrease in the price of fish; (b) an improvement in the social conditions of inshore fishermen; (c) the development of the infrastructure on which the fishing industry depended - especially harbour facilities.

This section will therefore consider the history of South African fishing between 1944 and 1970, and mainly from these three points of view.

1. Catch Figures and Production Figures.

The most obvious criterion of the development of the fishing industry would be the size of the catch and the value of the product. There is, indeed, no scarcity of figures, from a variety of sources, to show the annual catches. Some of these figures I have assembled in Tables I - IV. Unfortunately, it has to be admitted that the figures cannot be reconciled. This is not due to the fact that the figures are given in different units - sometimes in short tons of 2 000 lb., sometimes in metric tons (or tonnes) of 1 000 kilograms. Nor is it due to the different methods by which it is possible to estimate the catch: "caught weight", the actual weight of the fish when caught; "landed weight", the weight of fish actually landed on the quayside, and having perhaps undergone a certain amount of processing while at sea. Nor, I think, can the discrepancies be ascribed to the fact that the methods of totalling the catch vary from time to time - sometimes the South West African catch is included with the South African catch, sometimes not, and it is by no means always clear when South West African figures are included, and when not. (And in one Food and Agriculture Organisation report the South West Africa figures are given, but the Walvis Bay catches are included in the South African totals). But when all allowances have been made for these complications as sources of discrepancies, it is hard to resist the conclusion that some of the figures given are

simply wrong: either some of the returns submitted are inaccurate, or there have been mistakes in the processing of the figures. However, from the point of view of this paper, any errors that may exist in the figures are not crucial; though they may be incorrect in detail, the general picture they give is clear enough; between 1944 and 1970 both catches and product in most sections of the industry increased greatly.

Inshore Fishing: This was the least organised section of the industry. Reliable figures for catches are difficult to obtain or non-existent. There are however some figures for snoek catches: In 1935 the Department of Commerce and Industries estimated the snoek catch at 16 million lb; in 1948 it was more than 24 million lb;¹¹⁸ in 1958 it was about 20 million lb.¹¹⁹ In 1961, it was more than 24 million lb; and in 1970, more than 12 million lb.¹²⁰ But while the snoek catch fell, it appears that catches of other species by the inshore fishermen - kabeljou, geelbek, geelstert, witsteenbras, galjoen and others* - were maintained or increased. The Du Plessis report gives figures for fish other than snoek caught by handline fishermen - 1961, 16,000 metric tons; 1965, 18,000 metric tons; and 1970, 20,000 metric tons (but this last figure was clearly an estimate, since it is the figure for every year from 1966 to 1970 inclusive). Total catches by handline fishermen between 1961 and 1970 fluctuated around 30,000 metric tons; the best year was 1966 (33,000 tons), the worst 1970 (25,600 tons).

Trawling: In 1938, South Africa's total trawl catch - some from "coastal" trawling on the Agulhas Bank, but most of it

* I have used the Afrikaans names as these seem to be generally better known than their English equivalents - kob, Cape salmon, yellowtail, white steenbras, etc.

from deep-water trawling - was 18,200 metric tons. By 1948 this figure had risen to 42,000 tons, and by 1958 to 93,800 tons.¹²¹ During the 1960's catches remained fairly steady at a figure somewhat above 100,000 tons, rising to 128,000 in 1966, and falling to 107,000 in 1970.¹²²

Shoal Fishing: The great growth in South African fishing in the period after 1940 was in shoal fishing. Although it has long been known that there were large shoals of pilchard, maasbanker, and mackerel off the South African coast,* it was only with the war-time scarcities of the early 1940's that fishermen thought it worthwhile to try to exploit them. The catches grew rapidly. In 1948 the South African shoal catch was 75,000 metric tons; in 1958 it had risen to 271,000.¹²³ By 1960 the catch was 453,386 tons; and it has fluctuated around 500,000 tons ever since. But the increases are even greater if not only South African catches, but the catches landed at South West African ports as well, are taken into account. Shoal fishing from South West African ports was insignificant before the 1950's; but in 1952 the South West African pilchard catch was 248,380 short tons; ten years later it had approximately doubled.

By 1961 the total catch landed at Southern African ports - that is, ports in South Africa and South West Africa - was 837,700 metric tons, and thereafter it increased:

* Known to the experts. But according to Mr C.H. Gaggins, who was Managing Director of the Lamberts Bay Canning Company in the 1940's, the existence of payable shoals was not then known even to leaders of the fishing industry. (Private communication).

1962 :	893,000	metric tons	
1963 :	985,500	"	"
1964 :	1,087,400	"	"
1965 :	1,179,400	"	"
1966 :	1,044,900	"	"
1967 :	1,464,300	"	"
1968 :	1,917,500	"	"
1969 :	1,786,300	"	"
1970 :	1,067,700	"	" 124

The very heavy catches during 1967, 1968, and 1969, were due to the activities of two South African factory ships, the Willem Barendsz and the Suiderkruis, which began operations in 1966, and made exceptionally big catches during the three following years. These big catches caused alarm about over-fishing amongst other fishermen, especially since foreign ships were also taking an increasing share of fish from the waters off Southern Africa. The authorities apparently agreed with these fears, for in 1970 the factory ships were asked to fish elsewhere.

(The composition of the catch of shoal fish during the 1960's may have been an additional cause for uneasiness. If the catches of the factory ships be ignored, the total catch of shoal fish during the 1960's by South African fishermen remained fairly steady. But the pilchard catch dropped sharply, from 452,382 tons in 1962 to 45,260 tons in 1970. Similarly, the maasbanker catch, 61,019 tons in 1965, had fallen to 31,588 tons in 1970, and to 1,767 tons in 1971. But these losses were made up by an increase in the catch of anchovy. Negligible in the early 1960's, by 1970 the anchovy catch was 236,680 tons. The significance of these changes is uncertain. The anchovy is a smaller fish than the pilchard. In the middle 1960's, the mesh sizes of shoal fishing nets were reduced from 32 mm. to 12.7 mm., to allow anchovy to be caught. It can therefore be argued, either that the anchovy replaced the pilchard, and the total

stock of shoal fish was much the same as it had been, or that the pilchard stock was first reduced by a net which did not catch the smaller anchovy, and that the introduction of a smaller mesh size could be expected, in the course of time, to reduce the anchovy stock as well. It is even now not possible to be sure which of these two views was nearer the truth).

Rock Lobster: The South African rock lobster industry had been in existence for nearly half a century in 1944; therefore the spectacular increases in production that marked the shoal fishing industry were not to be expected in the rock lobster industry. In fact, catches increased somewhat during the early 1950's, fell again somewhat during the early 1960's and fell sharply at the end of the 1960's, when it became clear that the source had been seriously over-fished. (Catches were 11,000 short tons in 1938, 12,000 in 1948, 15,000 in 1952, 10,000 in 1960, 6,300 in 1968). In South West Africa, the rock lobster catches increased rapidly during the 1940's, reached a peak in the early 1950's, and thereafter settled to a rather uneasy balance, which gave way, at the end of the sixties, to a sharp fall. (Landed catches, in short tons, were 2,200 in 1938, 5,280 in 1948, 14,410 in 1952, 6,000¹²⁵ in 1960, 8,800 in 1965, 6,200 in 1967, and 10,200 in 1968).

The general picture of the rock lobster industry, then, is that it recorded its biggest catches in the early 1950's; by this time the available sources were apparently being exploited to the full; no further expansion was possible; on the contrary, the danger was that over-fishing would lead to a contraction of the industry.

The growth of the whole fishing industry of South Africa and South West Africa is shown most clearly if one simply adds together all the figures of catches landed at Southern African ports. The total landed weight in 1938 was 64,306 short tons; in 1948 it was 186,740 short tons; in 1958

it was 695,451 short tons; by the 1960's it was close on a million tons;¹²⁶ and in 1968 it actually exceeded two million metric tons; by 1970, with the departure of the factory ships, the catch fell to 1,207,900 metric tons.¹²⁷ The period, then, was obviously one of great growth; in very rough terms, one might say that over the whole period the catch of trawled fish doubled, the catch of rock lobster increased somewhat, the catches of handline fishermen held steady, and the catches of shoal fishermen increased many times over.

The increased catches were, naturally enough, reflected in increased production. These increases - or some aspects of them - are shown in Tables III and V. The production of tinned pilchard, for instance, which had not begun in 1938, was more than 5,000 tons in 1948 and more than 50,000 tons in 1968. Just under 1,000 tons of tinned mackerel was produced in 1948; this had doubled by 1958; and more than doubled again by 1968. Fishmeal was produced by the same factories that produced the tinned fish; at first, fishmeal was the "junior partner" in the operation; but it soon outgrew the canning industry. A start had been made in producing white fish meal - at Cape Town docks - even before the war. In 1938, 1,500 tons was produced. By 1948 this had increased to 2,000 tons, by 1958 to 6,800 tons, and by 1966 to 10,400 tons. Thereafter production of whitefish meal began to drop. The increase in the production of meal from pilchards was even more rapid. In 1948, 6,200 tons was produced in South Africa. In 1958, when production in South West Africa had also begun, the product of the two countries totalled 90,700 tons; by 1966 it was 257,400 tons, and by 1970, 303,100 tons.¹²⁸

These increases in production were again reflected in increased exports. In 1948, South Africa and South West Africa together exported 22,800 metric tons of fishery products, valued at R6,677,000. In 1958 the comparable figures were 171,000 tons valued at R27,978,000; and in 1968, 431,100 tons, valued at R53,128,000.¹²⁹

2. New Techniques.

Size is not the only criterion of development in an industry; it may even be argued that a simple increase in size is not development at all, since - it may be claimed - development implies changes in products, or techniques, or organisation; an increase in size without such changes would, according to this line of argument, be more properly termed "growth". It will therefore be worthwhile to consider what changes in techniques and what new products appeared in the fishing industry during the fifties and sixties. (Organisational changes will be mentioned later).

To start with the trawling industry: the most important "new" product was quick-frozen fish. Normal freezing causes ice crystals to form in the flesh of fish, which becomes soft and loses its taste on being unfrozen. Quick freezing, either by the "blast freezer" process or by contact plates, was introduced to the South African trawling industry in the mid-1950's.¹³⁰ High quality products, combined with an intensive advertising campaign, led to big sales. "Fish sticks", introduced in 1956, were particularly successful; sales grew eight times over in the first year of production.

Another "new" product from the trawling industry was hake liver oil; rich in vitamins, the hake livers were preserved on the trawlers, later processed ashore; some were used to enrich stockfeed, some were used for human consumption, but the bulk - perhaps 4/5th of all production - was exported - mainly to the United States, the United Kingdom, or to Norway.

Other trawled fish products introduced or improved during the 1950's and 1960's were smoked, salted, or dried fish - all ancient processes, but improved by modern science and leading to exports to Australia and several African territories. (Research was undertaken into how drying could best be carried out in the not altogether suitable climate of Cape Town, and into the best types of salt to be used in the salting process).

Technical improvements in the trawling industry included improved methods of handling the fish on the decks of trawlers, and improved methods of icing the fish at sea - in particular by the washing and re-use of ice that had previously been thrown away. There were also improvements in land transport - in the design of refrigerated railway trucks, and in methods of packing fish in them.

The growth of the shoal fishing industry inevitably involved the introduction of new products and new techniques. Fish canning was not a new process to South Africa; but the reduction plants that turned the fish not used for canning into fishmeal and fish oil, were new to South Africa. Some of the early reduction plants were home-made affairs; but later modern plants were brought from overseas. In particular the industry was encouraged by its scientific advisers to use the so-called "stick-water" plants, which give an increase to the quantity and an improvement to the quality of the fishmeal. * The oil which was pressed from the fish led to the establishment, in 1948, of a marine oil refinery near Simonstown. Here fish oils from factories all along the coast are refined; originally the main product was fish-liver vitamin oils; but the development of synthetic vitamins caused a change in emphasis; the oils were instead sold to industry and commerce - for use in cooking fats, in margarine, in soap, candles, paint, and in the tanning of leather.

It is quite impossible to discuss the technical improvements in the shoal fishing industry without mentioning the Fishing Industry Research Institute, which was created in 1946 to help the industry by research into fisheries technology, by

* In the reduction process, the fish is cooked, pressed to remove the oil, and then dried. The dried fish is turned into fishmeal. The liquid that has been pressed from the fish is divided into two parts - the oil, which can be sold, and a watery fluid known as "stickwater". In a modern "stick-water" plant the stickwater is not thrown away, but is added to the pressed fish before it is dried.

product analysis, and with technical advice. In the early days of fish canning in South Africa, exporters - more especially exporters of rock lobster - received numerous complaints from their clients overseas of the poor quality of the South African product. The Fishing Industry Research Institute was asked to draw up specifications for canned fish products, and to inspect the fish before it was exported. As a result, South African products now have a high reputation in world markets. In particular, the Fishing Industry Research Institute investigated scientific methods of identifying poor quality fish before the canning process begins; and it undertook experiments to improve the quality of the tomato paste in which much of the shoal catch is canned. The Fishing Industry Research Institute has also undertaken studies on how to avoid protein loss during the handling of pilchards; on the best times of the year to catch shoal fish from the point of view of their fat content; and on the spontaneous heating of bags of fishmeal. The Fishing Industry Research Institute also helped to develop a palatable and nutritious "fish flour" which has been added to brown bread to improve its food value.

Finally, although the export of rock lobster was an old established industry in South Africa, research was undertaken during the fifties and sixties to improve the methods of canning - for example, by dipping the tails in citric acid before canning, or by "purging" the rock lobsters - that is, by keeping them alive in running water but without food for a period immediately before canning.

NB These considerations suggest that during the fifties and sixties South Africa's fisheries were not only expanding in size; new products and new processes were also being introduced; "development" in the full sense of the word was taking place.

3. The Main Fishing Groups

These increases in catches and developments in technique involved the erection of new factories along the Cape West coast, and also along the coast of South West Africa. By 1955 there were 13 fish reduction plants on the Cape West coast, and six at Walvis Bay; the industry was not only growing, it was spreading. It may be worthwhile to consider briefly how this spreading took place, and what effect it had on the organisation of the industry.

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In some expanding industries, the method of growth is that a company that is doing well opens a branch elsewhere. This method was not typical of the fishing industry. The typical method was for a company which was doing well to invest its surplus funds in another company, or to buy up an existing company, or to simply start a new company; to do any of these things it might use its own capital, or borrowed capital, or, more likely, a mixture of both. The result of the process was the proliferation of numerous enterprises, nominally independent, but in fact linked through ownership, through pooled shareholdings, through holding companies, and by a variety of other devices. The groups of companies changed in bewildering fashion as entrepreneurs tried to raise money for new enterprises by share dealings; these kaleidoscopic changes continued through the first post-war decade. In the mid 1950's a period of consolidation began; many independent or semi-independent enterprises coalesced into more or less permanent groups. By 1970 there were ^{Six} ~~four~~ main groups, with a few independent companies still outside them. A brief account of the composition and history of these groups will not only give a picture of the organisation of the industry as it existed in 1970, but will also give some idea of the changes that had taken place in the organisation of the industry during the previous 30 years. 131

The main groups in 1970 were the Oceana Group, the Kaap-Kunene Group, Irvin-Kunene Holdings, ~~which included~~ the Marine Products Group, the Ovenstone Group, and the Silverman Group.

The Oceana Group was founded in 1957. Basically, it was an amalgamation of three companies (themselves, in fact, groups of companies) the Lambert's Bay Canning Co., South African Sea Products, and United Fish Cannerys.

The Lambert's Bay Canning Company had been founded in 1918 by a Swedish immigrant, Axel Lindstrom; his original aim had been to can and export rock lobster. In the late 1930's the company began to can other fish as well; in the 1940's, fishmeal and fish oil were also produced; by 1968 the Lambert's Bay Canning Company was the biggest single company in the inshore fishing industry. Its associated companies included:

The North Bay Canning Company. Founded in 1902, North Bay sold its total shareholdings to Lambert's Bay in 1950.

The Namaqua Canning Company. Founded in 1925, it became a subsidiary of North Bay Canning Company in 1938.

St. Helena Bay Fishing Industries. This was a company formed in 1946 to produce fishmeal at Stompheus in St. Helena Bay. Several organisations, notably the Fisheries Development Corporation, had an interest in it; Lambert's Bay Canning Company was one of the main shareholders, and Hubert Gaggins, Managing Director of Lambert's Bay, was also Managing Director of St. Helena Bay.

Table Mountain Canning Company. This was founded in 1916, and soon became associated with Lambert's Bay. In the 1940's it was used as an investment company by Lambert's Bay; in fact, the Lambert's Bay investment in St. Helena Bay was made by way of the Table Mountain Canning Company.

Seafare Investments. This was a central holding company formed in 1950 to control the Lambert's Bay group.

The second main component of the Oceana Group was South African Sea Products, which had been founded in 1945 by

Jack Stubbs, Trans-African Fisheries, and the Trautmann brothers. The original aims of the founders had been to freeze and export rock lobster at Hout Bay. By 1970 the companies controlled by South African Sea Products included:-

Hout Bay Canning Co. Founded in 1903, it was taken over by South African Sea Products in 1947.

Stubbs Fisheries. Founded in 1920, it was essentially interested in wholesale and retail selling of fish. It was brought out by South African Sea Products in 1947.

St. Helena Bay Fishing Industries. South African Sea Products took shares in it in 1948.

South West Africa Fishing Industries (SWAFIL). Founded in 1947 to exploit rock lobster at Luderitz. The Lambert's Bay Canning Co. had been one of the original investors, but later sold its holdings. South African Sea Products took an interest in 1948.

Swerling and Levin. An old-established firm of fish dealers in Cape Town, founded about 1920. Was absorbed by South African Sea Products in 1948.

Fish Wholesalers. Founded in the 1940's to operate the fresh-fish distributing business of Stubbs Fisheries, Swerling and Levin, and others. South African Sea Products took a large holding in it.

Lurie's Canning Co. Founded at Luderitz in 1922, it became a wholly-owned subsidiary of South African Sea Products in 1950.

Mulderene Fish and Oil Products. Had been started by an ex-serviceman at Luderitz in 1946. After the founder of the company died in 1947, there were complicated changes involving

shares and fishmeal licences. By 1953 South African Sea Products owned a half-share in Mulderene, the other half being owned by United Fish Cannery. Mulderene changed its name twice: first to "Luderitz and Walvis Fishing Co.", and later to "Oceana Fishing Co.".

Sea Products S.W.A. A management company formed in 1953 to take over the South West African interests of South African Sea Products. In the early 1950's two leading entrepreneurs in the fishing industry were Jack Stubbs and Hubert Gaggins. Stubbs was the driving force behind South African Sea Products; Gaggins, Managing Director of Lambert's Bay and controller of the Lambert's Bay fishing "empire". Stubbs and Gaggins co-operated closely, and sat on the same boards; and their companies had cross share-holdings. In 1953 they had a disagreement. As a result, their holdings were separated. Gaggins got rid of all his interests in South West Africa to South African Sea Products, and Sea Products S.W.A. was formed to control the South West African interests that Gaggins had given up.

Federal Fish Packers. Founded in 1956, it was a sales organisation for South African Sea Products and others. Later, more fish canners chose to market their products through Federal Fish. By 1964 all canned fish was sold in South Africa through Federal Fish Packers, which changed its name to Federal Marine.

Da Gama Fishing Industries. This was founded in 1958 to fish for shoal fish from Hout Bay, using a licence that had been granted to South African Sea Products. The joint sponsors were A. du Preez and the Oceana Group. In 1965 South African Sea Products bought du Preez' half-share in Da Gama.

Angra Canning Co. Founded at Luderitz in 1922, it became a subsidiary of SWAFIL in 1947. (South African Sea Products became a shareholder in SWAFIL in 1948).

Cape Lobster Canning Co. Also founded at Luderitz in 1922, it became, like the Angra Canning Co., a subsidiary of SWAFIL in 1947.

Trans-African Fisheries was founded at Hout Bay in 1922 by Christian Trautmann, a member of an old-established family of Hout Bay fishermen. The Trautmann brothers - as has already been mentioned - were co-founders of South African Sea Products in 1945.

The third main component of the Oceana Group was United Fish Cannery. This was a management company, formed in 1949 by Irvin and Johnson, Tiger Oats, and Standard Packers and Cannery. Its object was centralised control of a group of fishing enterprises which included:-

African Inshore Fisheries: Irvin and Johnson had founded this company at Velddrift in 1943, with the object of canning fish there. It was absorbed by United Fish Cannery in 1949.

Irvin and Johnson's cannery at Maitland.

Hickson Canning Co. Founded at Woodstock during the first World War, the cannery moved to Port Nolloth in 1928, was taken over by Irvin and Johnson in 1946, and by United Fish Cannery in 1949.

African Fish Canning Co. Founded at Woodstock in 1916, moved to Lambert's Bay in 1930. In 1947 it got a licence for rock lobster at Luderitz and opened a cannery there; in 1949 both branches were taken over by United Fish Cannery.

Luderitz Bay Canning Co. Founded as a rock lobster cannery in 1937. Sold to Wolf Heller of Standard Packers and Cannery in 1946, and re-sold to United Fish Cannery in 1949.

Mulderene Fish and Oil Products. As already mentioned, United Fish Cannery held a half share in Mulderene.

In 1970 there were three additional companies in the Oceana Group. These were:-

West Coast Fishing Industries (WESCO) Launched by SWAFIL, the Fisheries Development Corporation, and Ocean Products Ltd. in 1948, with the object of producing fishmeal and oil at Walvis Bay. It was run as a subsidiary of SWAFIL, and by 1957 had become a wholly-owned subsidiary.

Northern Fishing Industries. This was a subsidiary of WESCO, formed to carry on shark and tuna fishing. By 1967 it was also fishing for white fish.

Oranjerivier Visserye Bpk. In 1965 the Minister (of Economic Affairs) issued a number of new fishmeal licences. One of these was awarded to a newly-formed company, Oranjerivier Visserye, which planned to build a harbour and a fishmeal factory on the desert coast just south of the mouth of the Orange River. By 1968 this plan was still no more than a plan. The actual processing allowed under the licence was done in Oceana factories further south.

The second main group in the South African fishing industry, the Kaap-Kunene Group, was formed in the early 1960's to control the fishing empire that had been built up by A.P. du Preez.* The group was based on a merger between du Preez' two biggest companies, Mid-West Fishing Industries at St. Helena Bay, and New-West Fishing Industries at Walvis Bay. By 1970 the companies in the group included:-

* Du Preez, born in 1920, a B.Sc. graduate of Stellenbosch, worked for a time for Laaiplek Visserye, then, in 1947, formed his own company, Bona Fide Visserye, with money borrowed from local farmers. With machinery installed in a garage, and doing much of the work himself, he processed snoek and shark livers. When the market for liver oils collapsed, he used the profits he had made to start a fishmeal factory at St. Helena Bay - known as Mid-West Fishing Industries. In 1953 he obtained a fishmeal licence for Walvis Bay, and formed a second company - New-West Fishing Industries Ltd. - to use this licence. These two companies, Mid-West and New-West, formed the core round which Du Preez' fishing "empire" was built.

Mid-Western Fishing Industries. Founded in 1950 to produce fishmeal and canned fish at St. Helena Bay. Became a founder-member of Kaap-Kunene. Also held shares in Suid-Oranje Visserye.

Wes-Bank Visserye. Founded in 1964 to exploit a new rock lobster licence given by the South African Government for the catching of rock lobster off the coast of South West Africa. The new licence led to protests from existing licence holders. Complicated and obscure manoeuvres followed, as a result of which the licence was withdrawn from Wes-Bank Visserye and awarded to Angra Pequena, which, however, had cross-shareholdings with Wes-Bank Visserye and was in fact controlled by Mid-West Fishing Industries.

Angra Pequena Viskorporasie. Founded in 1963 to exploit rock lobster and shoal fish. As explained, it had cross-shareholdings with Wes-Bank Visserye, and was sponsored and controlled by Mid-West.

New-West Fishing Industries. Founded in 1952 to exploit a licence granted for a fishmeal plant at Walvis Bay. Partly owned by Mid-West which obtained the original licence.

Atlantic Tuna Corporation. Formed in 1961 as a joint venture by Mid-West, Ovenstones, and the Oceana Group, to fish for tuna from Hout Bay. It was not particularly successful; in 1965 Ovenstones and Oceana withdrew, and du Preez converted it into a trawling company, with a quick-freeze factory at Paarden Eiland. In 1965 it became a subsidiary of Kaap-Kunene, but was merged into Irvin-Kunene holdings in 1967.

Friedman and Rabinowitz. Operating as fish distributors in Cape Town in the 1920's. Later went in for trawling and fishing for rock lobster. Became a subsidiary of Kaap-Kunene in 1965, and was merged into Irvin-Kunene holdings in 1967.

Kuiseb Visprodukte. Founded by A.P. du Preez in 1963, with a quota for pilchard and white fish at Walvis Bay. A subsidiary of Kaap-Kunene, merged with Irvin-Kunene in 1967.

Suid-Oranje Visserye. Founded to exploit a new fishmeal licence issued in 1965. The applicants integrated their licence with Mid-West's licence at St. Helena Bay.

Buitesee Viskorporasie. This was a joint venture by Ovenstones and Kaap-Kunene to exploit a factory ship licence. The "Suiderkruis" made her first voyage under this licence in 1967.

Suid-Kunene Visserye. Founded in 1963 to exploit a new licence at Walvis Bay. Suid-Kunene was backed by Bonuskor and Federale Volksbeleggings, and was operated by Marine Products Corporation (the new name for Laadplek Visserye, the company for which A.P. du Preez had worked when he first entered the fishing industry).

The third main group in the South African fishing industry was Irvin-Kunene Holdings, formed in 1967 by a merger of the white-fish interests of Kaap-Kunene with Irvin and Johnson. This group included:-

Atlantic Tuna Corporation, Friedman and Rabinowitz, and Kuiseb Visprodukte. As already explained, these companies had been part of the Kaap-Kunene group, but were merged into Irvin-Kunene in 1967.

Irvin and Johnson. Founded in 1910, this firm built up a big trawling and distributing business, bought out many other companies, and by the beginning of the second World War was by far the biggest enterprise in the South African fishing industry. After the second World War, the rise of the shoal fishing industry reduced the comparative importance

of trawling, and the trawling industry itself began to experience difficulties with rising costs, obsolescent equipment, and foreign competition.* It was in these circumstances that the partial merger of Irvin and Johnson and Kaap-Kunene took place. Irvin and Johnson had an unrivalled distribution system within South Africa, but a fleet of trawlers many of which were too old to be efficient; Kaap-Kunene had some modern trawlers, but a modest distribution system. Irvin and Johnson had numerous subsidiaries and associates which it brought with it into Irvin-Kunene holdings; among them were:-

Union Smokeries: Founded in 1926 when two Cape Town fish dealers - Levin's Table Bay Smokeries and East Ltd., - combined with Irvin and Johnson to set up a smokery at Maitland.

Vitamin Oils. Formed in 1938 by Irvin and Johnson in collaboration with Dr C.J. Molteno, with the aim to recover vitamin oils from stockfish (hake) livers. This was the only South African firm to continue the production of natural vitamin oils after the fall in price about 1950, following the invention of a synthetic vitamin A.

Union and South West Africa Salt Snoek Corporation. Founded in 1957 as a joint venture by Irvin and Johnson and four other companies. It was an organisation for selling salt snoek both in South Africa and abroad.

* "Around (1966) the S.A. hake fishing fleet consisted of about 50 trawlers, most of them belonging to Irvin and Johnson... These included steam-driven side trawlers... built between 1917 and 1958; motor side-trawlers of 300-400 tons built between 1959 and 1965; five stern trawlers... and one freezer stern trawler... The foreign catching fleets, on the other hand, consisted almost entirely of modern stern freezer trawlers... The trawling industry has suffered heavy losses of foreign markets... A striking illustration of this was Irvin and Johnson's severe setback on the Australian market in 1966, when the Japanese challenged the S.A. company's supremacy with prices 25 per cent lower, and carved into Irvin and Johnson's market... The main problem of the trawling industry is that... the cost per unit of effort is rising so steeply that returns are getting thinner." - The Financial Mail, October 19th, 1969.

Concentra: Founded in 1937 in Cape Town by a German immigrant, Fritz Mendel, who aimed to process waste fish into meal and oil. Irvin and Johnson took a one-third share in 1943.

* * * * *

The fourth

~~Also in the Irvin-Kunene~~ group were Marine Products Ltd. and the companies associated with it. Marine Products had large interests in shoal fishing, but it also had an interest in trawling by virtue of a substantial shareholding in Irvin and Johnson. Three of its subsidiaries were: *

Namib Visserye. Founded in 1953, it had a reduction plant and cannery at Walvis Bay. It was a subsidiary of Marine Products Ltd.

Tuna Corporation of Africa (Tunacor). Founded as a subsidiary of Marine Products in 1949, at a time when it was hoped tuna fishing would prove commercially profitable. But the hopes based on tuna were disappointed; instead, Tunacor went into operation in 1950 with a pilchard reduction plant.

Looplek Rock Lobster Packers. Founded in 1953, it was a subsidiary of Marine Products Ltd. Irvin and Johnson also held shares in it.

P:PK

The ~~fourth~~ main group in the South African fishing industry in 1970 was the Ovenstone Group, which had grown from a family business started at Cape Town by John Ovenstone about the beginning of the century - and using a salvaged lifeboat from a wrecked liner as his first fishing boat. The group revolved round Ovenstone Holdings, a family company with controlling interests in (a) John Ovenstone - the parent firm; (b) Ovenstone S.W.A. Investments, controlling the Walvis Bay Canning Company; and (c) various smaller enterprises. The group therefore included:-

* Marine Products also had interests in Suid-Kunene Beperk and Gansbaai Marine (Edms) Beperk.

Ovenstone Holdings. The holding company that controlled the group.

John Ovenstone. The parent company, founded in 1916. Its main business then was the catching and canning of rock lobster. It incorporated for a time the Table Mountain Canning Co., though this was later sold to the Lambert's Bay Canning Co., John Ovenstone became a public company in 1952, and was thereafter able to use borrowed money to modernize its rock lobster cannery and freezer at Port Nolloth, and to found a new company, the Columbine Canning Co.

Columbine Canning Co. founded in 1952, was producing fishmeal and oil at St. Helena Bay by 1953.

John Quality: This was the Ovenstone brand name for certain products. Founded in 1933, "John Quality" produced fish paste at a Woodstock factory, but was mainly a selling organisation for Ovenstone products. When the factory was closed in 1947, the firm concerned itself only with sales.

Ovenstone South West Africa Investments (OSWIL): This was a holding company floated in 1953 to control the Walvis Bay Canning Co. It also helped to form Industone, a joint venture in which Ovenstones co-operated with a Chilean enterprise to build and operate a fishmeal factory in North-West Chile. The factory went into production in 1964, but fish were scarce, results disappointing. In 1968 Ovenstones sold part of its shares in the enterprise, and made it known that no further return on the existing investment was expected.

Walvis Bay Canning Co. Founded in 1943 to can snoek at Walvis Bay. Later it produced fish-liver oils, fishmeal, and canned pilchard. In 1948 its capital was increased when Lambert's Bay Canning Col, Imperial Cold Storage, and National Trawling took shares in it. The Lambert's Bay shares were sold back to Ovenstone in 1952.

Buitesee Korporasie: Founded in 1966, this was a joint venture with Kaap-Kunene to exploit the licence granted for the factory ship "Suiderkruis".

^{sixth}
 The ~~fifth~~ main group in 1970 consisted of the Silverman family enterprises, including the Saldanha Bay Canning Co., and the West Point Fishing Corporation. Ellis Silverman, founder of the firm, arrived in the Cape in 1903 at the age of 18. He was a tinsmith from Riga, in Latvia. He made tins for the newly-established North Bay Canning Co. at Saldanha Bay, and started the Saldanha Bay Canning Co. in 1905. The firm went through many vicissitudes, but gradually Ellis Silverman built it up; in the 1930's and 1940's the factory was enlarged and modernized; in the late 1940's a small reduction plant was installed, to supplement the canning of fish and the canning and freezing of rock lobster that was already carried out. In 1950, through a holding company, Silvermans started a second major venture - the West Point Fishing Corporation with a ten-ton-per-hour reduction plant at Slipper Bay in St. Helena Bay. West Point showed rapid profits, and a second reduction plant was installed. In 1964 the Silvermans joined the selling organisation of Federal Marine - previously they had marketed their products independently - and in 1965 branched out into another new venture when they took a 40% share (with Netherlands Whaling Co. and S.M. Druker) in the factory ship Willem Barendsz.

Finally, to complete the picture of the industrialised side of the South African fishing industry as it existed in 1970, mention should be made of three independent undertakings which existed outside the ~~five~~^{six} big groups just described. These were:-

Amalgamated Fisheries. Founded in 1961, this was a trawling company backed by the Vestey group in Britain. It started with three trawlers working out of Hout Bay. In 1963 it built a freezing plant and smokery for its products, which were marketed under the trade name of "Table Top". In 1964 it took delivery of South Africa's first full-scale stern trawler, the 135 ft. "Seahorse."

Southern Sea Fishing Enterprises. Formed in 1948, with capital of £230,000, contributed by Dutch and South African interests. The aim was production of canned fish and fish-meal, and their export, especially to Europe (the scarcity of fish in the North Sea at this time was a factor in this plan). The North Bay Canning Co., in return for shares in Southern Sea, contributed its cannery, its small reduction plant, and part of its rock lobster quota at Saldanha Bay. Two ten-ton-per-hour reduction plants were ordered from the United States, and Mr G. van Essen, Managing Director of the parent company in Holland, came to South Africa to supervise. By 1960 Southern Sea had a considerable share - nearly one-third - of the sales of canned fish in South Africa. In 1964 it took a 20% interest in founding Sea Harvest Corporation.

Sea Harvest Corporation: Formed in 1964, this was a £2-million joint venture shared between a Spanish fishing firm, Pescanova, of Vigo, the Imperial Cold Storage, and Southern Sea. Pescanova and Imperial Cold Storage each held 40% of the shares; Southern Sea held 20%. Sea Harvest thus combined for its joint owners the distribution network and cold storage facilities of the Imperial Cold Storage, the inshore fishery resources of Southern Sea, and the experience and trawlers of a successful Spanish fishery. A modern factory for processing trawled fish was built at Saldanha Bay, and Spanish-built stern trawlers with Spanish crews were used. There were big initial catches when the company went into action in 1965. Mr G. van Essen, Chairman of Southern Seas, was also Chairman of Sea Harvest Corporation.

4. The Price of Fish.

Although an increase in catches, the adoption of new techniques, the spread of the industry and the appearance and growth of new fishing enterprises were all undoubted signs of development, there was another aspect of growth which was perhaps of greater interest to the great majority of

South Africans who were not themselves directly concerned in the fishing industry: was the growth of the fishing industry doing anything to provide ordinary people with cheaper fish? This is not an entirely straightforward question to answer. It involves an attempt to compare fish prices in the mid 1940's with fish prices in 1970; that is to say, over a period of about 25 years. This was a period in which prices - as well as incomes - were rising fairly steadily. It could hardly be expected, therefore, that the price of fish could be expected to fall in absolute terms. To the consumer, the important question was whether the price of fish had risen more or less steeply than his income. But, again, the answer to this question would depend on the particular consumer's income; it could not be answered in general terms; and to attempt to find an average rise in income of all South African consumers would be an exercise of great complexity and doubtful value. On the whole, the simplest solution would seem to be to compare the price of fish with the prices of other foodstuffs; all food prices have, in fact, risen over the period under consideration. But if it could be shown that fish prices had risen less than other foodstuffs, then it would be fair to say that fish had become relatively cheaper; if, on the other hand, fish prices had risen more steeply, then it could be said that fish had become relatively dearer.

↙ To establish what increase there had been in food prices in general, figures provided by the Bureau of Census and Statistics were used.¹³² These give a weighted average for food prices in nine urban areas. Over the period, the Bureau used three "base" years - 1938, 1958 and 1970. In order to produce a comparison over the whole period, the two later series of figures - those using the base years 1958 and 1970 - were re-calculated to the base year 1938. (See Table VIII). The calculations showed that taking 1938 as 100, the index number of food prices in 1945 was just over 140, and in 1970, 344. In other words, food prices

rose by about 40 per cent between 1938 and 1945; and between 1945 and 1970 they increased about two and a half times. Between 1938 and 1970 they increased about three and a half times.



There are no directly comparable figures for fish prices; nevertheless there is information which can lead to a useful comparison. No fish prices for 1938 are available; but the Board of Trade and Industries Report No. 180 of 1935 did go into the question of fish prices. The Board warned that its findings should be treated with caution; it had found difficulty in arriving at a figure, especially since fish prices vary according to the availability and condition of the fish. It investigated prices at 19 centres; retail prices varied from 4½d per lb. at Mossel Bay up to 10d per lb. at Kimberley. Probably a figure of between 7d and 8d per lb. might have been a fair average for the whole country. The Board produced its report during 1934. It is therefore reasonable to assume that its figures were collected in 1933. Now the weighted average food price index number for 1933 was 91.7. By 1938 food prices in general had increased by about ten per cent. It seems, therefore, that if one takes the Board's upper figure for 1933, this would be about as good an approximation as one could get. Therefore we may start off by assuming that in 1938 the price of fish was in the neighbourhood of 8d per lb. This, of course, applies to the price for stockfish; no doubt soles, kingklip, yellowtail and other choice fish would have been more expensive.

Three sets of figures for stockfish prices are available for the years between 1945 and 1970. The first, from the Statistical Year Book for 1964, gives the price of unprepared hake, in cents per lb., from 1945 to 1963. The second, from the same source, gives the price of prepared hake, in cents per lb., from 1959 to 1963; and the third, from "South African Statistics" for 1972, gives the price of prepared hake in cents per 500 grams from 1961 to 1971. To obtain

a comparison over the whole period, it is only necessary to "reduce" the price of 500 grams of prepared hake to the equivalent of one lb. of unprepared hake; and this can be done quite easily since the figures for all the series overlap for the years 1961, 1962 and 1963. (The full figures are given in Table IX). The conversion can be carried out quite easily, since the average price of unprepared hake, during most of the years in which the series overlap, works out at almost exactly eleven-twelfths of the average price of prepared hake over the same period; and 500 grams is very close to 1.1 lb.

The results of these computations show that the price for unprepared hake was the equivalent of 6.4 cents per lb. in 1945; of 7.4 cents in 1950; and of 9.8 cents in 1960. No figures are available for 1970; the figure for 1969 was 17.4 cents, and for 1971, 21.5 cents. It would perhaps be permissible to take the average of these two years for 1970; the figure works out at 19.4 cents.

It may further be noted that the figure of 6.4 cents per lb. is almost exactly equivalent to the figure of 8d per lb., which was the approximate finding of the Board of Trade enquiry in 1934. This would suggest that the retail price of unprepared hake had changed very little between 1933 and 1945.*

* Partly, no doubt, this was due to price control, which was introduced during the war. Thus the Government Gazette of September 1942 fixed the retail price of fish - other than soles - in Cape Town at 7d a lb. gross weight, 7½d dressed, prepared, or as cutlets, and 8½d filleted. But these regulations could be only partially enforced. "The Cape Times was informed at the Salt River fish market that controlled prices could not be applied there because the stall-holders obtained their supplies at the fish jetties where fish was sold to the highest bidder by count and not by weight. The Manager of a Cape Town retail fish shop complained that he was unable to obtain any line fish from... local harbours because the prices realised at the boats were invariably higher than controlled prices at which he was forced to sell. His supplies were limited to a few varieties of trawler fish, purchased by weight from wholesale fish markets." - The Cape Times, May 5, 1943.

If we now attempt to compare changes in the price of hake with changes in the index number of retail food prices, it will be seen that (1) between 1938 and 1945, the price of hake changed very little, whereas the price of other foods rose by something like 40%. (2) Between 1945 and 1965 the price of hake approximately doubled (6.4 cents per lb to 12.5 cents per lb), whereas food prices in general increased rather more than double (the index number in 1945 was 140.6; in 1965 it was 298). (3) From 1965 to 1970 food prices in general increased by about 15 per cent - the index number rose from 298 to 344 whereas the price of hake increased by about 55 per cent - from the equivalent of 12.5 cents per lb. to the equivalent of 19.4 cents per lb. In other words, from 1938 to 1945 food prices in general rose much more rapidly than hake prices, which hardly rose at all; from 1945 to 1965 food prices rose slightly more rapidly than hake prices; and from 1965 to 1970, the price of hake rose much faster than the general price of foods.

The Statistical Year Book for 1964, read in conjunction with South African Statistics, 1972, also makes it possible to give some figures for the price of tinned fish. The figures (given in full in Table X) show that in 1960 the price of a 1 lb. tin of pilchards was 14.9 cents. In 1969 the price of an equivalent (454 gram) tin was 15.6 cents, and in 1971 it was 16.8 cents. (Once again, no figures are available for 1970). Taking, as before, an average for 1970, this works out at 16.2 cents. Therefore, between 1960 and 1970 the price of 1 lb. tinned pilchards rose from 14.9 cents to 16.2 cents - that is, by nine per cent - while the price of food in general, as shown by the index number, rose from 262 to 344 - that is, by more than 31 per cent. In other words, during the decade of the sixties, it appears that the price of fresh fish rose more rapidly than general food prices; the price of tinned fish, more slowly.

In general it is clear that the relationship between the price of fish and the price of other foods over the whole period is not a simple one. At times, fish prices rose more

rapidly than those of other foods, at other times, more slowly. But in general I do not think it could be said that fish prices increased more rapidly than other food prices. From 1945 to 1970 the prices of food in general increased by something like two and a half times; the price of fresh unprepared hake increased from 6.4 cents per lb. to 19.4 cents per lb. - that is just over three times. In this instance, fish prices rose faster than other food prices. To offset this, it seems that the price of tinned fish rose more slowly than general food prices; and this was certainly so during the period 1960 to 1970. Finally, it could be pointed out that over the greater part of the period 1945 - 1970, even the price for fresh hake rose more slowly than other food prices; it was only the rapid rise in the last five years of the period that caused the overall increase to be greater.

5. Fishermens' Wages.

NR
What about changes in fishermen's earnings between 1945 and 1970? An initial difficulty is to establish what the general earnings of any particular type of fishermen at any particular time are. As the Board of Trade and Industries pointed out in its report of 1935, there were no "usual" wage scales in the fishing industry, nor any general methods of payment. And since payment normally depended on catches, payments, like catches, were irregular. It would be an unusual fisherman who kept an account of all his earnings over the year; so it is necessary to rely on such figures as are available from the employers' side. A few figures of earnings from the earlier part of the period will be given; and an attempt will then be made to compare them with earnings at the end of the period.

The Official Year Book for the Union for 1950 lists the totals of employees, and the totals of wages paid, at fish factories during the decade 1938 - 1948. It was at the end of this

period, of course, that the great shoal fishing boom was beginning. If we start with the year 1945-46 before the boom had fairly got under way - the figures given show that 30 factories listed employed a total of 340 Whites who earned altogether £134,493 - that is, an average of rather more than £395 a year each. (No doubt some of these were managers, executives, or trawler captains who earned considerably more, while most earned considerably less). The same factories employed 1,960 Black employees who earned a total of £142,500 - or an average of something over £75 a year. These figures were for both regular and casual employees, but did not include contract workers; nor did the wages set down include anything that might have been given in kind.¹³³

Giving evidence before the 1944 Committee, Mr H. Abao, then Chairman of Irvin and Johnson, gave the average earnings of trawlermen working for his company during the year 1943.¹³⁴ (The list is reproduced as Table XI). This list showed that, of seamen trawling on the grounds North of Cape Town, skippers earned an average of £983, deckhands £431, and apprentices - the lowest paid - £196. Trawlermen working the grounds East of Cape Town earned on the average rather less: skippers £729, deckhands £291, and apprentices £179.

Earnings of fishermen who were neither factory employees nor trawlermen are more difficult to estimate. An appendix to the report of 1944 gave these figures: Fishermen engaged in trek-netting at Simonstown earned an average of over £189 in nine months. (The other three months of the year they spent in line-fishing on their own account. In addition to the £189 cash, they were allowed fish for their own use). Fishermen who fished for rock lobster earned an average of £176 a year, plus the fish they took home for themselves and their families. They also spent a "considerable", though unspecified, time in line fishing on their own account. Snoek

fishermen at Hout Bay earned an average of £144 in seven weeks, which included 31 actual fishing days. During the remainder of the year, they could earn perhaps £2 a week in other fishing operations. And fishermen who worked on deep sea line fishing boats earned an average of £215.15.0 a year.¹³⁵

These, briefly, were some of the earnings of fishermen in South Africa in the middle 1940's. It is, unfortunately, impossible to find figures for 1970 which correlate exactly with these figures, but it is possible nevertheless to make some sort of comparison. The "South African Statistics" for 1972 gives figures for employees in fish factories which correspond to those which have already been given for 1945-1946. In 1967 - the last year for which figures are available - fish factories employed a total of 860 White employees who earned altogether R1,484,000 - or an average of rather more than R1,725 a year.¹³⁶ In the same year they employed a total of 4,752 Blacks, who earned altogether R2,525,000 - or an average of over R531 a year. In other words, over the period 1946 to 1967 average wages in these factories had increased from £395 to R1,725 a year for Whites - that is, more than twice.* For Blacks, they had increased from an average of £75 a year to R530 a year - that is, about three and a half times over. During the same period, the index number for food prices had increased from 144 to 320.¹³⁷ These figures suggest that, in real terms, the White employees were little, if any, better off; whereas the Black employees had increased their real incomes substantially. No doubt one of the reasons for the increase in Black wages was that for most fishermen the "rate for the job" applied. "Coloured and Whites are paid the same, regardless of which job they do, although Coloured skippers rarely find themselves in command of White crewmen."¹³⁸

The Financial Mail of October 17, 1969, also gives figures for the earnings of shoal fishermen at this time. These may

* Taking £1 = R2.

reasonably be compared with trawlermen's earnings of the 1940's, since although trawling and shoal fishing are technically different, similar skills are required, and it would be quite usual for a trawlerman to be taken on a shoal fishing boat, or vice versa. The Financial Mail's figures show that for each ton of fish delivered at the quayside, the boat's skipper got R1.07, the driver and the wheelman 48 cents each, and the deckhands 40 cents each. An average skipper might bring in 5,000 tons a year, which would mean that he would earn about R5,000, his wheelman and driver about R2,400 each, and deckhands about R2,000 each. Comparing these figures with the earnings of trawlermen in the 1940's as given by Mr Abao, it will be seen that the skippers earnings have increased from £983 to £2,500*, and deckhands earnings from £431 to £1,000. This suggests that wages in each category had increased about two and a half times over. Probably the true increase was rather more than this, partly because for the 1944 figures I have taken the more highly-paid trawlermen working the grounds to the North of Cape Town, rather than the more lowly-paid trawlermen working the grounds to the East, and partly because the 1969 figures are for "average" captains bringing in about 5,000 tons a year. But there were also above-average captains** who brought in up to 14,000 tons a year, and whose men, of course, shared in substantially higher earnings. And in South West Africa, where pilchard boat skippers were catching 10,000 to 12,000 tons a season - and also selling them at R9.30 a ton - earnings were higher than in South Africa.

To take one other example of pay: Black migrant workers in the fish factories of South West Africa. The Black workers come from Ovamboland, Damaraland, and the Okavango. They work for six months in the factories of Walvis Bay, then return to their families for a "rest" period. Some of them - perhaps 20% of the present labour force - have been

* Taking £1 = R2

** Some of them famous in the industry, like Jonny Eigelaar of Laaiplek, or Joos Engelbrecht of Saldanha Bay.

doing this for 20 years. There is virtually nothing to do for them at Walvis Bay except work: so their aims are work, sleep, and as much overtime as possible. In December, 1974, the Financial Mail investigated the earnings of some of these workers. There was an industry-agreed basic minimum wage of 16c an hour; ordinary overtime was 24c an hour; Sunday overtime, 32c an hour. In addition, there was a service bonus of 45c a week after two years, 90c a week after three years, R1.35 after four years, and R1.80 after five years. There was also a production bonus based on the actual quantity of fish-meal and oil produced, which might, industry officials claimed, be from R2 to R4 a week. Under this system the boss-boy of one Walvis Bay factory - but he had 23 years service - was earning R120 - R180 a month, depending on how many fish were brought in. But such earnings were exceptional: an ordinary worker, with three years service, working a 60 hour week, which included five hours of Sunday overtime and a production bonus of R1, would earn, according to the figures, R13.10 a week - plus free board and lodging, free travel both ways, free medical care, and a leave allowance of R10.08 each year.

As a comparison, in the late 1940's the early 1950's, Ovambo workers were stated to be earning 1s. or 1s.6d a day, plus keep, in fish factories.¹³⁹ R13.10 a week, even when allowance is made for their keep, was obviously a considerable advance over this.

But there is really hardly any need to quote figures to show that the earnings of fishermen rose in the decades succeeding the Second World War. The "miraculous" period of the rise of the shoal fishing industry is remembered as a well-known fact, even as something of a legend, all along the West Coast. Robin Lees has well described the atmosphere in her book.¹⁴⁰

"All along the West Coast was a frenzied boom town atmosphere. But the excitement was tempered by uncertainty, because many

still believed the new prosperity could not last, and they were determined to get the most out of to-day lest there should be no tomorrow. It was this feeling, aggravated by the suddenness of the change from poverty to comparative wealth, that led to extravagance.

"Fishermen, who Mr Spooner* had stated in 1944 would never earn £1,000 a year, were now making £2,000 and £3,000 as skippers, and their crews were earning not much less. And it was not only the pilchard fishermen who were suddenly rich; rock lobster men who could well remember being paid 5/- a crate were now getting £2 for the same amount of fish.

VB "For the first time in their lives, fishermen had money to spend, money to squander as recklessly as they wished. They spent it on sweets and sometimes on shoes for their children, on smart clothes and on shiny gadgets. They spent it in the new cinemas and shops that had opened in every village. Soap sales rose rapidly, and in the bars peppermint liqueurs and expensive whiskies were ordered in large glasses, instead of cheap wine by the gallon. But most of all they spent their money on the largest and most opulent motor cars. For to a fisherman a motor car was a plaything, a recreation, and the ultimate in status symbols. They drove them to the jetties wearing hats and suits, but seldom shoes, and if there was a crash or Mr Jones was seen to be driving a later or a better model, Mr van der Nerwe did not hesitate to walk to the nearest garage and pay cash for a new one.

"Ellis Silverman said of Saldanha Bay in 1947: 'Nobody thinks twice about buying an expensive motor car or spending large sums of money on highly polished furniture to be fitted into a cottage that has cow dung floors. Nor do they care if an expensive radio is bought for cash, though later they cannot get a tune out of it because they have no electric current in the cottage.'"

* General Manager of the Fisheries Development Corporation.

Did the new opulence end the "deplorable social and economic conditions" which had been the subject of adverse comment by the Department of Social Welfare in the 1940's? It would be difficult to give a straightforward "yes" or "no" to this question. According to the Rev. Harry Wiggett,* who was incumbent of the Parish of Mbeto's Bay from 1970 to 1972, the Coloured fishermen of the area, even after their poverty had ended, retained many habits which a social worker might well have termed "deplorable".

NB Inured by years of hardship to cold and discomfort, they appeared simply not to notice squalid living conditions that would have appalled people accustomed to a gentler background. Although they could now easily afford the price of cinema tickets, drinking and fighting remained popular weekend entertainments. Yet the contestants in a Saturday night brawl would turn up for church on Sunday morning, their bruises and cuts only too obvious, but now perfectly good friends again.

For these rough men, followers of a hard and dangerous calling, were often sincerely religious. And they had a great sense of family. It was no uncommon thing for a group of fisherfolk, men, women, and children, to pile into one of their newly-bought cars and tear off to visit relatives who might live hundreds of miles away. Invariably, according to Mr Wiggett, the visits, though probably unexpected, were well received. There was no lack of human warmth and kindness among these people.

Still, outsiders who did not understand their outlook might well regard their habits as "deplorable"; and misunderstandings could lead to laughable results. Mr Wiggett recalls, for instance, a visit from the representative of a family planning organisation. The lady talked about family planning

* Private communication.

and birth control, of which there was undoubtedly a need in Hoetje's Bay; and she presented each fisherman with a "birth control badge", to wear on his pyjamas, so that in moments of passion he might be reminded and take the necessary precautions. The fishermen accepted the badges; but since none of them possessed any pyjamas, they pinned the badges onto the lapels of their best suits and wore them to church! It was with difficulty that Mr Wiggett persuaded them that this was not the most appropriate use for this particular type of badge.

6. Capital Investment.

The figures quoted earlier of wages, taken in conjunction with the descriptive passages here given, provide firm evidence that the earnings of fishermen did increase considerably during the 25 years after the end of World War II. This impression of growth and development is still further strengthened when one looks at the capital investments in the industry during this period. It would seem that the simplest way to consider capital investment would be to look at (a) the fish processing factories as they existed in 1945, and compare them with those that existed in 1970; and (b) to compare the number and size of the fishing fleets over the same period. Both these comparisons will be made. To take the fish processing factories first:

In 1945 the canning of fish other than rock lobster was only just beginning. There were, therefore, a number of rock lobster canneries in the Western Cape, some of which had gone over during the war, to canning other fish. The production of fishmeal took place on a small scale at a factory in Cape Town docks. The developments along the West Coast had hardly begun. Admittedly this is a sketchy outline of factory development as it was in the 1940's; but, as Dr J.G. van der Horst told the Select Committee of 1944, the figures on which to base a more accurate assessment are not available.¹⁴¹

If we now look at the factory position at the end of the period, a very different picture emerges. In 1969 the Financial Mail printed a list of fish processing factories; they totalled 52, distributed as follows:¹⁴²

Walvis Bay

Ovenstone South West Investments: producing canned pilchards fishmeal, and fish body oil.

West Coast Fishing Industries: producing canned pilchards, fishmeal, and fish body oil.

Tuna Corporation of Africa: producing canned pilchards, fishmeal, fish body oil, and dried soluble concentrate.

Namib Fisheries: producing canned fish, fishmeal, and fish body oil.

Oceana Fishing Co: producing canned fish, fishmeal and fish body oil.

New West Fishing Industries: canned fish, pickled fish, smoked fish, sardines in oil, fishmeal, fish body oil, salted snoek.

Suid Kunene Visserye: Fishmeal and fish body oil.

Northern Fishing Industries of S.W.A.: Fresh, salted, and frozen fish; ~~fishmeal and fish body oil~~.

Kuiseb Visserye: trawler owner and producer of frozen white fish, pilchards, and tuna.

Protea Fish Products: white fish packers, freezers and curers.

Atlantic Rock Lobster: producing filleted, smoked and frozen white fish, fishmeal, salted and smoked snoek, and rock lobster.

Consortium Visserye: producing fishmeal and fish body oil. It was a condition of their licence that they should develop the white fish industry at Walvis Bay.

Luderitz.

Angra Pequena Fishing Corporation: producing fishmeal and fish body oil, also frozen rock lobster tails.

Luderitz Bay Cannery: producing canned rock lobster and frozen rock lobster tails.

African Canning Co. (S.W.A): producing canned rock lobster and frozen rock lobster tails.

South West Africa Fishing Industries: producing canned rock lobster, frozen rock lobster tails, and rock lobster meal.

Lurie's Canning Factory: producing canned rock lobster and frozen rock lobster tails.

Port Nolloth:

John Ovenstone: producing frozen rock lobster tails, trawled fish, and frozen fish.

Hickson's Canning Co: producing frozen rock lobster tails and rock lobster meal.

Hondeklip Bay:

Namaqua Canning Co: producing frozen rock lobster tails, canned rock lobster, and rock lobster meal.

Doornbaai:

North Bay Canning Co: producing canned fish, canned rock lobster, frozen rock lobster tails, fishmeal, rock lobster meal and fish body oil.

Lambert's Bay:

- X African Fish Canning Co: A wholly-owned subsidiary of Lambert's Bay Canning Co. Ltd. (now Lambert's Bay Holdings Ltd.): producing fish meal and fish body oil.

Lambert's Bay Canning Co: producing canned fish, canned and frozen rock lobster tails, fishmeal and fish body oil.

Laaiplek:

Marine Products: producing canned pilchards, mackerel, maasbanker, fishmeal, and fish body oil.

- X Laaiplek Rock Lobster Packers: producing canned and frozen rock lobster.

St. Helena Bay

- + West Point Fishing Corporation: producing canned pilchards, mackerel and maasbanker, fishmeal and fish body oil.
- 4 Steenberg's Cove Fishing Industries: producing canned fish, fishmeal, and fish body oil.
- 4 Van Riebeeck Canning and Fishing Corporation: producing canned pilchards, mackerel, and maasbanker.
- 4 Sandy Point Canning Co: Canned pilchards, mackerel, and maasbanker, fishmeal and fish body oil.

Suid-Oranje Visserye: producing canned pilchards, mackerel and maasbanker, fishmeal, fish body oil, and frozen rock lobster tails.

- + Columbine Canning Co: producing fishmeal and fish body oils.
- 4 The Fish Drying Corporation: producing dried, salted and unsalted fish.

Stompneus Bay

- X St. Helena Bay Fishing Industries: producing canned pilchards, mackerel, and maasbanker, fishmeal, and fish body oil.

Paternoster

Paternoster Visserye: producing frozen rock lobster tails, fresh and frozen rock lobster.

Saldanha Bay

Saldanha Bay Canning Co: producing canned pilchards, mackerel, maasbanker, and rock lobster, fishmeal, fish body oils, and fish solubles.

Southern Sea Fishing Enterprises: producing canned pilchards, mackerel, maasbanker, and rock lobster, fishmeal, and fish body oil.

- X Sea Harvest Corporation: producing fresh and frozen trawled fish and white fish meal.

Vredenburg

Vredenburg Food Products: producing canned, smoked, and cured fish.

Cape Town

Irvin and Johnson: producing and distributing trawled fish.

Cencentra: producing white fish meal, fish and rock lobster meal, fish oil and fish liver oil.

Irvin and Johnson Fish Products: producing canned, cured, and quick-frozen fish.

Christie's Fish Supplies: producing canned, cured, dried and salted fish, and fish paste.

Atlantic Tuna Corporation: producing frozen tuna.

Friedman and Rabinowitz: producing fresh and frozen trawled fish.

Hout Bay

South African Sea Products: producing frozen rock lobster tails and canned rock lobster.

Atlantic Smokeries: producing cured and dried fish.

Hout Bay Canning Co: producing fishmeal and fish body oil.

Da Gama Visbedryf: producing fishmeal and fish body oil.

Snoekie's Smokeries: producing frozen rock lobster tails and smoked fish products.

Amalgamated Fisheries: producing trawled and frozen fish.

False Bay (Dido Valley)

Marine Oil Refiners of Africa: producing industrial oils, feed oils, vitamin concentrates, low-potency oil, stearic acid, and edible fats and oils.

Gansbaai

Gansbaai Marine: producing fishmeal and fish body oils.

It is perhaps worth noting that many of the places on this list, at which factories were in operation in 1969, were precisely those places mentioned to the Select Committee of 1944 as being places in which isolated fishing communities were then living in poverty and isolation: Port Nolloth,

Saldanha Bay, Lambert's Bay, Steenberg's Cove, Stumpnose Bay, Paternoster, Langebaan, Gansbaai, and Velddrift.¹⁴⁴ In fact the only two places mentioned in this respect which do not appear to have had new factory development by 1969 were Hawston and Churchhaven.

It may also perhaps be worthwhile to give one example of capital development and social uplift (since these two are closely bound up with each other) on the West Coast in the late 1940's. The quotation is from the South African Shipping News for September, 1947: "Elsewhere in this issue we record the considerable achievements at Lambert's Bay, industrially by the Lambert's Bay Canning Co., and socially by the Fisheries Development Corporation, which government-created body has a financial interest in the commercial company. In the past the little village of Lambert's Bay, some 200 miles north of Cape Town, on the bleak West Coast, was scarcely one of the show places of South Africa. Today it is leading in the van in regard to fishing enterprise, and a great new ten-ton-per-hour reduction plant has swung into action to produce oil and meal. In place of the ghastly hovels in which the depressed Coloured folk of the area used to live, there is now a fine housing scheme and various social amenities. The development of Lambert's Bay is providing an object lesson in regional planning, on a small scale, it is true, but one all the more significant because of the poverty of the area.... The inhabitants of the area are being given the opportunity of leading fuller and happier lives; much of the credit for these developments at Lambert's Bay goes to Mr C.H. Gaggins of the Lambert's Bay Canning Co."

The figures of registered fishing boats, as given in the South African Fishing Industry Handbook, are further evidence of growth. The first handbook issued - in June, 1951 - lists a total of 821 motor fishing vessels as registered at Southern African ports. Of these, 736 were registered at South African ports, and 85 at ports in South West Africa. In

addition, there were 45 vessels registered as trawlers. In 1972, the handbook gives a total of 866 motor fishing boats registered at Southern African ports, of which 617 were registered at South African ports, and 249 at South West African ports. In addition there were 146 registered trawlers. Two rather surprising points emerge from these figures. The first is that while the great increases of catches were being made in the shoal fishing industry, the great increase in the number of boats registered is in the trawling industry. It was at least partly due to the activities of the Boat Limitation Committees that the number of boats engaged in shoal fishing was not increased. This question is further discussed in Section 8 of this chapter. The second surprising fact is that, according to the figures given, the size of the trawlers used did not increase at all. Both in 1951 and in 1972 the average size of the trawlers registered works out to a little over 260 gross tons.

7. Research: Effort and Results.

It is necessary to say something at this point about fisheries research between 1944 and 1970. As already indicated in Chapter III, the possible scope of fisheries research is extremely wide; and there was a feeling among some fishing industrialists in the 1940's that not enough research was being done. On the other hand, fisheries research is enormously demanding of time and effort, as will be demonstrated in this section; and, to the non-scientist, it may often seem that the results of a considerable expenditure of time and effort are somewhat meagre; not in the sense that no findings have been made, because there may well be a bewildering superfluity of facts and figures; but in the sense that from the facts and figures, obtained with so much trouble, no simple conclusion can be drawn such as might guide the industrialist in planning his business or the public servant or politician in framing regulations or laws. So,

in assessing research work, one might consider: (a) the actual work done and the effort made; (b) the practical results achieved - that is, results useful to the industrialist or the legislator; or (c) the relationship between the research done and the research still to do, between the information actually obtained in a form useful to practical men, and the information that practical men would like to have. It might be that judging by the first criterion one might conclude that a great deal of research had been done; judging by the second or third, one might conclude very little. A brief examination of some of the research on pilchard and maasbanker carried out by the Division of Sea Fisheries from 1950 onwards may illustrate the point.¹⁴³

In April 1950 the Division of Fisheries - as it was then called - took into commission a new research vessel, the *Africana II*. It had been decided to use this ship, with the occasional help of two smaller vessels, on a pilchard research programme. The Director of Fisheries, Dr von Bonde, explained at the time that the rapid increase in the number of fish processing plants on the West Coast had led to a decision by the Fisheries Development Advisory Council to try to assess the potentialities of the West Coast pilchard fishery. To do this, it was necessary to know the underlying principles of pilchard biology and ecology. To this end a two-year research programme had been planned, which was to investigate both the pilchard and the maasbanker.

The research took place over an area of 4,800 square miles of ocean, off the west coast between Saldanha Bay and Lambert's Bay. This was the area where, at that time, most pilchard fishing took place. Within this area, twenty "stations" - that is, fixed positions - were chosen, and the *Africana II* spent the greater part of 1950 moving from station to station in order (it took over a week to visit all the stations) and making observations at each station. The two smaller vessels, *Schipa* and *Palinurus*, which were used alternately, made similar observations in offshore waters.

By the end of 1950 the Africana had sailed more than 8,000 miles; more than 3,650 temperature observations had been made; more than 3,650 samples of water had been collected for chemical analysis, and a similar number for salinity determination; and many other observations had been made and recorded - of fish both on the bottom and on the surface; of birds and of seals: In addition to this, field stations were established at Lambert's Bay and at Stumpnose Bay. Here officers of the Division examined more than 9,000 fish picked out from commercial catches; examined the stomach contents of a further 425 fish; and examined 547 samples of plankton, caught in the tow-nets used by the two smaller research vessels.

At the end of this period the report of the Division of Fisheries (for 1950) stated: "In only nine months of research into the ecology of the South African pilchard neither spectacular results nor final fundamental conclusions could be expected... It would seem that the pilchards did not spawn to any appreciable extent in any part of the St. Helena Bay area where the commercial fishery operated... In the light of the data available to date there is some justification for the view that the St. Helena Bay area in which the commercial fishery currently operates represents an area in which all the environmental factors both physico-chemical (temperature, salinity, etc) and biological (food etc) are favourable for final conditioning for breeding, schools in progressive stages of sexual development entering the area in succession and departing from it in succession for the spawning grounds when pre-spawning conditioning has advanced to the critical stage in each case."

The next year - 1951 - the research continued. Africana II completed 13 round trips of the 20 stations (cruises were made once a month in 1951, interspersed with longer trips looking for pilchard spawning or breeding areas). Most of the ships and research men available to the Division were used on the pilchard-maasbanker project. Staff at Sea Point correlated and arranged the data produced. The research continued on these lines through the next two years.

By the end of 1954 the programme did not seem to be approaching any sort of finality. On the contrary: new avenues of research were appearing, new methods of approach which, while distinct from the previous methods, were nevertheless interdependent with them. "From the outset of the programme of pilchard research in April 1950," (said the Division's report for 1954) "it was realised that the problem was of a far wider nature than was implied by the words 'pilchard research'. At this stage, more than ever before, there is a crying need to accelerate existing procedures and to employ new methods hitherto beyond the scope of our research potential. Accelerated research, in other words, more staff and improved facilities, is absolutely essential if an answer is to be found within a reasonable time to the question, "What is the optimum annual catch to be taken from the waters of the Union and South-West Africa?"

By March 1955 the programme had been in operation for five years. In the report for that year, the findings were presented in summarised form only, because "the volume of technical data from which these findings and conclusions were obtained has now grown so large that the average reader might have been confused if not overwhelmed by a detailed account". But even the summarised findings filled four pages of the report, and covered the physical environment - temperature, salinity, and chemical content; plankton - its composition and seasonal variations; and, for both pilchard and maasbanker, reproduction, feeding habits, condition at different times of the year, and the influence on them of predators, including birds.

In the years that followed, although research into pilchards was not abandoned, other forms of research appeared to absorb an increasing amount of the Division's efforts. Report No.33 which covers the years 1961 to 1965, mentions several deep-sea cruises, including one to the sub-Antarctic islands and another to the Southern Indian ocean; research in hydrology,

thermoclines, ocean currents, productivity and chlorophyll, chemical oceanography, phytoplankton, zooplankton, bait organisms, abalone, shrimps and prawns, rock lobster, pilchard (by this time pilchard tagging experiments had been started), anchovies, and line fish, including snoek and tuna.

At the beginning of 1967 the Division's research activities were re-evaluated, and a good deal of research was brought to an end. This was because the research had produced so much data that it could not be properly dealt with. "It was found (says the report for 1967) that while our research was well-founded theoretically, our intake of data and material had greatly exceeded the processing capacity of the available staff together with existing facilities. It was decided to limit the intake of data and samples to the absolute minimum for a period of one year from July 1967 to June 1968. This would allow the processing of some of the accumulated material and facilitate the planning of new programmes after 1968." This decision involved the curtailment of the egg and larva survey dating from 1950, the year in which the pilchard research programme was started. Also, the pilchard tagging programme was brought to an end; partly, perhaps, because there were not enough pilchards left to tag! (The pilchard catch had been 452,382 tons in 1962; in 1967 it fell to 80,963 tons).

A non-scientist can hardly comment on the findings of scientists, which are often scarcely comprehensible to a layman. But this brief outline of some of the activities of the Division of Sea Fisheries (it had changed its name in 1961) leaves no doubt that a great deal of research activity took place. How effective the research was in producing useful results is another question. The Du Plessis report suggests that at least some of the basic research carried out before 1970 was not satisfactory; and in particular neither the leaders of the fishing industry nor the Director of Fisheries was satisfied with the research into the productive capacity of the fishery resources in South Africa.

(It has been the chief aim of the pilchard research programme to establish the productive capacity of the pilchard resource).

Although the Division of Sea Fisheries carried out by far the largest amount of basic research in the period under discussion, it was by no means the only body engaged in basic marine research. The Oceanographic Research Units of the C.S.I.R. carried out investigations, particularly environmental studies. Some of these were carried out directly by the C.S.I.R., others in universities or museums, with financial support from the C.S.I.R. The Oceanographic Research Institute in Durban, working in co-operation with the University of Natal, carried out studies on plankton production in certain areas, on the biology of various fish, and on methods by which the danger to bathers of sharks could be reduced or eliminated. At the University of Cape Town, the Departments of Zoology and Oceanography did ecological studies. The Zoology department of the University of Stellenbosch co-operated with the Division of Sea Fisheries in biological studies. Studies in fish population dynamics were made at the University of Port Elizabeth; taxonomic research was carried out by the J.L.B. Smith Institute at Rhodes University; and research work was also done at the museums in Cape Town, Port Elizabeth and East London.¹⁴⁵

Much of the work done at these institutions was, according to the Du Plessis report, of a high standard. But the mere list of them suggests one reason why basic marine research was not more effective: there was a lack of co-operation between many researchers working far from each other in different parts of a large country. As far as the Division of Sea Fisheries was concerned, there were other possible reasons for shortcomings. One was that the Division had to work without the help of an outside body to guide and evaluate its work. In most research institutions throughout the world there are Advisory Committees of outside experts who help in the choice of projects, who decide on priorities, evaluate progress and suggest changes in programmes. A second possible reason was

the divided responsibilities of the Division: the Director of Sea Fisheries was both a leader in research and a senior administrative officer with the duty of enforcing regulations. This combination had two unfortunate results. In the first place, a scientist doing research work is in quite a different relationship to an industrialist in whose field he is working from that of an administrative officer. The administrator must be correct and formal; the scientist needs an informal relationship, may need to ask favours, may need to know exactly what the industrialist is really doing rather than what he ought to be doing. In short, a research worker is hampered in his relations with industry by being part of a law-enforcing organisation. In the second place, while the research duties of the Director of Fisheries might have been no less important than his administrative duties, they were certainly less urgent. So when there was a clash between them, it was almost inevitably the research aspect that had to take second place. Finally, another factor that may have hampered the research work of the Division of Fisheries was that the rules and regulations necessary for the running of a department of state did not suit the needs of a research institution. (For instance: equipment, obtained in Cape Town, had to be ordered through Pretoria; public service pay scales did not attract the highly-qualified scientists needed for certain research projects).

Whether for these or other reasons, the basic marine research done between 1944 and 1970 does not seem to have satisfied either the leaders of the fishing industry or the Director of Fisheries.

In the second main field of fishery research, that is research into fishing techniques, the results were also considered unsatisfactory. But here the blame, if anyone was to blame, could not be laid on one body, because there was no body primarily responsible for this type of research. It was done on an ad hoc basis by different institutions as different "problems" came to light and were thought to be in need

of solution. Thus the Division of Fisheries investigated long-line fishing for tuna; the Fisheries Development Corporation co-operated with trawling interests to investigate trawling for prawns; the Corporation also experimented in methods of catching anchovy, and in using purse-seine nets for tuna; the industry itself experimented with forms of mid-water trawl; the South African Museum helped to test new methods of tuna fishing; and the C.S.I.R. did research to test the reactions of fish to electrical stimuli.¹⁴⁶

The Du Plessis report judged that this research was not sufficient for the needs of the South African industry. Possible reasons for the unsatisfactory position were, the report suggested: the complex nature of the research, involving several different disciplines; the fact that no one body was primarily responsible for it; and the fact that fish had in the past been so readily available that fishing industrialists had been ready to accept existing fishing techniques with only minor modifications, and without seeing the need for research to improve them.¹⁴⁷ To these reasons put forward in the Du Plessis report, one might perhaps add two more: firstly, in a country where labour is cheap, the easiest way to increase production is often simply to employ more labour; there is not the same inducement to increase the productivity of labour (by, for instance, introducing improved fishing techniques) as there would be if labour were more expensive; secondly, Government policy to protect certain groups in their traditional occupations would seem likely to have the effect of inhibiting changes in techniques. One example of this, already mentioned, is the prohibition on diving for rock lobster. It is difficult to find any reasoned defence for this prohibition; but the actual reason for its existence appears to be the feeling that divers would have robbed the "traditional" rock lobster fishermen of their living - in other words, that divers would be too efficient.

If we now turn to research into processing methods, the picture is quite a different one. Here the research was carried out by one institution especially created to do this particular work. Established in 1946, the Fishing Industry Research Institute had the support both of industry and public bodies. Its task was both to maintain standards (in which it was assisted by the Bureau of Standards) and to help industrialists by research to show how these standards could best be reached. In the Du Plessis report it was stated that "processing, as well as quality control, are, generally speaking, on a satisfactory basis... The Commission is satisfied that the necessary machinery exists to select the most important questions and to evaluate priorities on a responsible basis. The present research facilities and organisation are such that the Commission does not wish to suggest an alteration." 148

Comparatively little research into fish farming was carried out in this period, apart from that done by the Fisheries Development Corporation in its oyster-growing experiments at Knysna. No doubt one of the reasons for the small amount of research in this area was that there were no important industrial interests involved in fish farming, as there were in other forms of fish exploitation.

Research into harbour facilities was undertaken under the aegis of the C.S.I.R; research into undersea geology at the University of Cape Town; and meteorological research by the South African Weather Bureau. The Du Plessis Commission was satisfied with all these aspects of research.

Economic research remains to be considered. This, as already indicated, has two aspects: broadly-based economic research into labour, capital needs, possible markets, and so on; and technical-economic research, that is, research into the economic aspects of the various other forms of research already mentioned. (As an obvious example: a new

catching technique may be in a certain sense efficient from a scientific point of view; but if it involves greater costs than other techniques, it will not be profitable to the commercial fishermen; this is the sort of question that could be dealt with by economic research.) During the period under consideration, no single body was responsible either for general economic research or for technical economic research. What economic research was done was done on an ad hoc basis by various bodies. The Du Flessis commission considered that the lack of economic research was a serious gap in the development of the fishing industry, and had caused mistakes to be made: in particular it pointed to certain administrative decisions on fishing quotas which had been made on insufficient information and with damaging results. (One particular aspect mentioned was the setting of quotas for shoal fishing during the decade 1960-1970. It may indeed be that economic research might have enabled more advantageous quotas to have been set; but one might also remember that the pilchard-maasbanker research project begun by the Division of Fisheries in 1950 was mainly designed to establish the productive potential of pilchard and maasbanker; had it been possible to determine this with any degree of accuracy, no doubt the authorities would have found it easier to set a more realistic quota).

To summarise: in the period 1944-1970, research into processing benefitted the fishing industry and was generally regarded as satisfactory. Certain aspects of scientific research carried out at different establishments throughout the country could also of itself be regarded as of satisfactory standard, although it was so little co-ordinated that it could hardly be regarded as of much practical use to the fishing industry. Other research was often unsatisfactory or lacking: research into the productive potential of fish populations, into fishing techniques, and into the economic aspects of South African fishing - none of these really kept pace with the rapid development of the fishing industry that was then taking place.