FIS/7/6

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GROUP FISHERIES

SUB-GROUP REPORTS

FIS/7/6

SUBJECT FIRADA PROPOSAL FOR COMERCIAL FISHERIES STUDY

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Falkland Islands Research and Development Association Limited

The Falkland Islands Office, 16 Regency Street, London SW1. Telephone 01 821 0032 Telex 888164

24th April 1978

His Excellency The Governor of the Falkland Islands,
J. R. W. Parker Esq. C.M.G. O.B.E.,
Government House,
Port Stanley,
Falkland Islands.

Dear Governor,

I enclose two copies of a letter and a memorandum which have been sent by James Johnson MP to John Silkin, with copies to the Prime Minister, Judith Hart and Ted Rowlands. This work is a great step forward as the South Atlantic Fisheries Committee is the only forum that has managed to get the fishing industry in Britain together and to form an agreed position. I will keep you informed of progress in this matter.

I am sending copies of the letter and memorandum to the Local Committee.

yours sincerely,

Brian Frow

B. G. Frow

Enc.

(2)

South Atlantic Fisheries Committee

President James Johnson MP Chairman E W Hunter Christie B L

Falkland Islands Research and Development Association,
16 Regency Street, London SW1. Telephone 01 821 0032 Telex 888164

Correspondence to 25 Victoria Street London SW1. Telephone 01-222 0762

April 24 1978

Rt Hon John Silkin MP
Ministry of Agriculture Fisheries and Food
Whitehall Place
LONDON
SW1A 2HH

Accompanying this letter is a Memorandum which presents the case for a Government sponsored commercial survey of fisheries in the South West Atlantic.

The South West Atlantic is one of the very limited areas of the world's seas in which natural conditions exist for a cold water white fish industry of the type developed by the countries of Northern Europe. The Falkland Islands and their Dependencies, South Georgia and the South Sandwich Islands and also the South Orkney Islands and British Antarctic Territory, are scattered across an area of sea which is almost unique. The fishery potential of these waters is being exploited by other countries of the Northern Hemisphere.

Since the beginning of this century, Britain has spent large sums on oceanic research in this area. The Falkland Islands Government also provided from their own revenues the sum of £1,003,018.00 between 1920 and 1930 alone for this purpose. The benefit of this work and expenditure is now accruing to other countries. We consider that the Government should take steps to ensure that the people of this country benefit. Britain has traditionally been at least self sufficient and usually a net exporter of fish based on fish stocks and fishing grounds now no longer available. We are buying with foreign currency fish that we used to catch ourselves, and fish as a food is being priced off the domestic menu. At the same time our vessels are laid up and many of our fishermen are unemployed.

Fish, either whole, prepared or as fishmeal, is an international trading commodity. Quality fish is in demand all over the world and, with modern techniques, fish can be and is being exported by other countries, for example from Denmark to California as frozen fillets.

Agriculture in Britain is dependent on imported protein as an animal feedstuff. At present, imports of soya bean and fishmeal are a debit in our balance of payments. The Memorandum proposes a fishmeal industry, based in the Falkland Islands, as a wholly sterling operation. In addition to the United Kingdom market, there is a potential market for fish meal for re-export to every EEC country, except Denmark.

...../2

Rt Hon John Silkin MP

A development into the South West Atlantic by the British fishing industry would also be of direct benefit to the economy of the Falkland Islands. The Committee is aware of the strong demand from the Governments of Eastern Bloc countries for the use of facilities in the Falkland Islands and South Georgia and of the interest shown by fishing vessel owners in Japan and Greece, among others.

We believe that an active involvement by the British fishing industry in the South West Atlantic, assuming it to be commercially feasible, would be part of the answer to the political problems raised by the wish of the Russian and Polish Governments to make use of the Islands as a base for their operations. It appears to us to be politically unacceptable to grant what would, in effect, be exclusive use of facilities to Eastern Bloc countries (or for that matter to a future Argentine or Chilean based industry). The same objections would not necessarily apply to ordinary commercial use of entrepôt facilities under Falkland Islands Government control and used in common with a British fishing fleet. Commercial cooperation on commercial terms usually works.

I am addressing this letter to you as Minister with prime responsibility for the fishing industry and agriculture. In view of the importance of the subject, I am sending copies of this letter and the Memorandum to the Prime Minister, Mrs Judith Hart and Mr Ted Rowlands.

James Johnson MP
President

cc Rt Hon L James Callaghan MP
Rt Hon Mrs Judith Hart MP
E Rowlands Esq MP

(1)

South Atlantic Fisheries Committee

President James Johnson MP Chairman E W Hunter Christie B L

Falkland Islands Research and Development Association,
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PROPOSAL FOR A COMMERCIAL FISHERIES SURVEY OF THE SOUTH WEST ATLANTIC

Introduction

The South Atlantic Fisheries Committee was formed in July 1977 at a meeting in the House of Commons presided over by Mr James Johnson MP. A list of organisations and individuals to whom its Minutes are sent is attached at Appendix A.

The South Atlantic is defined for the purposes of the Committee as "the whole of the Atlantic south of the Equator, together with adjacent waters".

It became clear at an early stage that the British fishing industry and the consumer market in Britain, both for fish for human consumption and fish meal for animal feedstuffs, are interested only in the potential of the South West Atlantic in high latitudes, mainly in the region of the Scotia Arc. In the relatively shallow continental shelf type waters of this region, cold water white fish of high quality which are likely to be acceptable to the British consumer have been identified, as have sources of fish meal.

The South West Atlantic was, for more than two centuries, the traditional area of operation of the former British based and controlled whale fishery and is the area on which the Russian, Polish, Bulgarian and West German fishing vessels are now concentrating.

The need for a commercial survey

The question which the British fishing industry needs to have answered is whether sufficiently high catching rates can be achieved and types of marketable fish caught in order to provide commercial justification for an operation at this distance from the home market. The aim of the Committee is the establishment of a British fishing industry in the South West Atlantic. The immediate objective is to promote a commercial fisheries survey of the South West Atlantic on the general lines recommended by Mr Gordon Eddie, of the United Nations Food and Agricultural Organisation,in Lord Shackleton's Economic Survey of the Falkland Islands.

A subsidiary, but important, part of the commercial fisheries survey will be to test and establish catching, processing and storing techniques. Methods and equipment evolved in the distant waters of the Northern Hemisphere may well need modification. The survey will also be concerned with the suitability and value of southern species for the home market.

Fishery Prospects

The Committee is generally agreed that the commercial practicability of a South Atlantic fishery cannot be judged by the activities of state operated and financed fleets from Eastern European countries, to whose Governments a self financing operation is of small concern. It is considered that Japanese and Korean operations in the Atlantic, concentrating on species such as tuna and swordfish of high value in the home market, are a more useful indicator. The Japanese operation in the Canary Islands, based on freezer capacity originally financed by a World Bank loan, is an example of a successful fishery carried on at a great distance from the market.

The economic viability of a British fishery in the South West Atlantic could depend on fish meal and fish oil for its bread and butter and high value white fish for its jam. A sustainable annual yield of 2m tons of southern blue whiting (a larger and better quality fish than the northern blue whiting) has been identified in the vicinity of the Falkland Islands.

A fisheries Consultant with considerable experience within the area has recommended the eventual construction of a fish meal plant in the Falkland Islands that would accept blue whiting as raw material. From this enterprise, the plant area could be developed to include processing of other varieties that would be acceptable as white fish products to the British market. He also considers that intensive fishing would tend to eliminate, in the course of time, the parasite infestation found in most samples of blue whiting. Three meal plants in South Georgia (originally used for whale meal) could also be restored and reactivated.

The Committee proposes that serious consideration should be given to the construction of a fish meal plant in the Falkland Islands if the exploratory fishing survey establishes that there is a suitable raw material available which provides satisfactory catch rates throughout the year. The Committee would point out that the fish meal derived protein content of animal feedstuffs on the British market has fallen from 35% to 15% in recent years. In 1977, the UK imported 213,577 tonnes of fish meal valued at £60.8 million (1976: 253,000 tonnes). The amount of raw material required to produce such amounts of fish meal is 1 to 1½ million tonnes. In relation to this requirement, scientists estimate that the maximum sustainable yield of Blue Whiting which can be caught, principally in the UK 200 mile zone, is between 1 and 2 million tonnes per annum. It is hoped, however, that it will be possible to harvest this stock in the near future for human consumption, rather than for industrial purposes. The UK 200 mile zone does embrace large quantities of species, e.g. Norway Pout, Sand Eel, Sprat, which are currently caught principally by Danes and Norwegians for conversion into fish meal at plants in Norway and Denmark, from where the bulk of the UK's fish meal imports are derived. For the UK to replace its existing fish meal imports by domestic production would, therefore, require an increase in shore-based investment in fish meal plants, together with an increase of the UK's "industrial" catch subject to effective conservation requirements and at the expense of those nations currently catching such species in UK waters.

The alternative source of protein for agricultural feedstuffs is soya bean meal and it is the availability and price on the international market of soya protein which is the essential factor in the sensitive fish meal equation. The Committee considers that on a conservative view, fish meal production alone in the South West Atlantic, while it might not be profitable in years in which soya bean prices were depressed, would be profitable in years of average or high prices. The Peruvian industry was profitable in fish meal alone. Any fish meal industry must depend on satisfactory year round catching rates and, although these are anticipated, they have yet to be proved.

There is, however, a second factor which the Committee wishes to bring to the attention of the Government. British agriculture is largely dependent on imported protein as a feed supplement. Soya protein costs foreign currency and the medium term prospects are that this product of the underdeveloped countries will come into shorter supply. Prices will increase sharply as the producers turn over to more general farming and increased domestic consumption.

The advantage to the country of encouraging a British fish meal development based on the resources of the South Atlantic is that it will be a wholly sterling operation. If the fish meal proportion of the protein supplement in agricultural feedstuffs can be restored in this way, prices will not be dependent on fluctuations in the value of the £ as against other currencies. Any surplus which can be generated will be available for re-export. These factors have very far reaching implications.

Although a modest fish meal development could start at once, utilising the ascertained stocks of blue whiting, the Committee believes that a soundly based commercial fishery would need to include in the catch a proportion of high quality white fish for human consumption, acceptable to the home market. Whatever the benefits of ensuring a long term source of fish meal, the first objective of the survey should be to find fish of high market value which can be caught in economic quantities per unit of effort throughout the entire year. Once this is defined and satisfactory catching methods are established, the Committee considers that a fishing industry could commence with real prospects of success. In the process, if a satisfactory catching rate of blue whiting for fish meal can be confirmed, which should be the second objective, a large scale development becomes practicable.

A development into the South West Atlantic by the British fishing industry on a large scale would require improvements in the infrastructure and communications of both South Georgia and the Falkland Islands. The Committee does not, however, envisage a development either as elaborate or as expensive in terms of public money as that outlined in the Shackleton Report, at any rate until after the fishery is well established. Salvesens, who own the whaling factory at Grytviken in South Georgia, and the Falkland Islands Company (a member of the Coalite Group with Charringtons Industrial Holdings), who provide services at Port Stanley, are members of this Committee. The infrastructure is likely to be provided to meet commercial demand. The fishing industry will finance the fishing if it is shown to be a commercial proposition to do so.

Krill

The Committee, while fully aware of the great potential importance of krill, does not consider that its investigation is a first priority, or that it should be the objective of the commercial survey. The techniques required for handling krill and converting it into a marketable product are a very different exercise from the one currently proposed. Similar considerations apply to the commercial exploitations of krill as to the economics of a fish meal development; present catching rates and processing difficulties with krill indicate that, for the present, this must be considered a more expensive raw material than fish as such. A high value market for human consumption has to be found in order to ensure its profitability in the animal feedstuffs market. The Committee has, however, every reason to believe that this problem will be overcome and a note on krill is attached at Appendix B.

The South Atlantic Fisheries Survey

The part of the memorandum which follows is based on a draft report prepared by the Principal Fisheries Development Officer of the White Fish Authority, approved in the draft form by the Authority's Technical Director.

The Committee has considered the financial and logistical problems involved in mounting a fishing survey of stocks north and south of the Antarctic convergence. The original proposals contained in the Shackleton Report have been modified mainly for reasons of cost and agreement in principle has been reached for the survey to be carried out by a freezer stern trawler.

Type of Vessel

The main factors dictating the choice of vessel are (a) the remoteness of shore facilities for both fish landing and marketing and (b) the hostile environment of the Southern Ocean.

At first sight, there would seem no technical reason why modern side trawlers built for fishing the sub-Arctic zones should not work these grounds. The deciding factor, however, is that these vessels are all "freshers". They land their fish in ice for quayside auction and subsequent processing. Therefore, only a very limited quantity of fish could be landed and frozen utilising this type of vessel. Blast or plate freezer facilities would have to be installed in the Falklands or South Georgia to bring the fresh fish down to storage temperatures even if the local cold store could maintain the necessary -20°C. More importantly, however, the ground coverage of the survey would have to be frequently interrupted for fish landing, and perhaps only one week in four would be spent trawling. Trawling operations would be frequently interrupted when weather conditions ruled out fishing "off the side" but when stern ramp trawlers could still work. The supply of crushed or flake ice for fish storage would also require expensive shore facilities.

Mention is made of these points because there are undoubtedly several fine side fishers currently going a-begging on Humberside, but these vessels have an endurance of only about 25 days. Freezer trawlers on the other hand are designed with greater endurance, typically 40 days fuel and water. Theoretically, they can fish and store the catch non stop until fuel and food are exhausted. Most of these vessels can produce their own fresh water. They can fish in gale force conditions, if necessary, and, more importantly, should not be endangered if caught out by suddenly deteriorating weather. They range in size from about 200 to 250 feet in length and have a capacity of 400 to 800 tonnes of frozen whole fish. Experience in Arctic waters has evolved a hull which is strengthened where appropriate for working in ice fields. Last, but by no means least, these vessels provide reasonably comfortable working and living conditions for the crew in all weathers. It is proposed that a vessel of less than five years old be selected, if possible, as it would seem a false economy to select an older and probably less reliable vessel, in view of the remoteness of the area and the possibility of very expensive maintenance and spares supply. For example, the cost of obtaining a tug and towing to South America or Cape Town in the event of a major mechanical defect would, if repeated several times, swallow up the saving achieved by chartering an older vessel.

It is also proposed that a whole fish freezer be employed rather than a ship designed to fillet the bulk of the catch. The complex filleting machinery in a factory trawler requires considerable maintenance effort, and this would present additional possibilities of delays and expense in the case of major breakdowns. More importantly, the ability of typical European filleting machinery to cope with South Atlantic species is questionable. The crew costs would also increase by about 50% over those of a whole fish freezer. There are also additional costs for packaging materials.

A table of typical running costs for freezer trawlers operating in Arctic waters is attached. These figures are for 1976 with an allowance of 18% for inflation to 1978 (see also remarks in next section).

Conduct of Survey

It is considered that the White Fish Authority should undertake the management of the project. Ideally, this trawling survey should be carried out by three vessels over a full twelve months. As a minimum, it could be carried out by one vessel during the period November 1978 to May 1979 inclusive. The vessel should be made available during the first half of September 1978. The outward passage, estimated at 24 days to Port Stanley with a refuelling stop en route, should commence at the end of September 1978. Ample stores of high grade marine diesel oil are held in Port Stanley by the Ministry of Defence, and these are made available by arrangement for British vessels. Refuelling is by an oil barge and is a routine operation. Fresh water and all consumable stores are available and there is a weekly plane service via Buenos Aires to London. The Falkland Islands and South Georgia afford good and safe anchorages for vessels of stern trawler size, but there is only 14 feet depth of water alongside the quays in Port Stanley.

Cold storage, limited to one tonne per day at 70°F freezing down to -15°/-18°F, is available at Port Stanley. Its capacity of 3024 cu.ft. could be augmented. Its main use is seen as storage of samples. Electric power is available.

The actual fishing survey would include during the summer months the areas presently being exploited for krill, that is south of the Convergence and near the summer ice edge. Indications are that Antarctic Cod (Notothenia Rossii) are to be found on the bottom in these areas. Provision should also be made for pelagic fishing if there are indications of stocks in midwater. Blue whiting (Micromesistius Australis) shoal in the vicinity of the Falkland Islands. The potential yield and catching rate of this species will be established. It is proposed that a fish meal plant should be included in the equipment and the product should be landed at Port Stanley already bagged. The actual coverage of the area should be worked out after reference to the results of previous fishery research work. The aim should be to fish and echo survey an area of such size that sufficient time is available to cover the grid three or four times during the seven month season. Areas of high fish concentration would, of course, be concentrated upon once the first grid pattern has been completed. A tentative grid pattern should be devised on the above basis, but this is likely to be considerably modified after the first coverage. The full extent of trawlable ground is unlikely to be revealed by any available previous studies.

Inshore surveys will also be carried out at each of the main island groups to establish catching rates including, if required, reference to Munida (shrimps).

The ship should be equipped with sufficient fishing gear including warps, cables and lifting wires to allow for normal wear and tear for the period plus 50%. The unknown nature of the ground is likely to take a heavy toll of gear. Similarly, engineroom, radio and electronic spares should be provided for allowing 50% over normal seven month usage, because of the inaccessability of the area of operation. These figures are allowed for in the costings appended. It is proposed that in addition to standard navigational equipment, a satellite navigator should be fitted. This is important both from a safety point of view and for the ability to pinpoint and to relocate good fishing grounds. It is anticipated that radio contact will be maintained with the British Antarctic Survey vessels operating in the area, and with Port Stanley. A regular daily schedule would be arranged.

Crewing and Manning of Survey

The total period the ship would be away from the UK would be in the order of nine months, ie. October 1978 to June 1979 inclusive, although, as stated above, the industry would prefer a full twelve months survey on the grounds. It is suggested that the crew should be relieved on two occasions during this period, ie. after three and six months respectively.

Relief crews and specialists will be flown to and from Port Stanley by the weekly Argentine LADE flight and then from Buenos Aires to Britain. It will be necessary to check that Merchant Navy rates will be applicable in the through bookings. Special arrangements for bulk bookings may be negotiated with British Caledonian Airways between London and Buenos Aires. A full ship's complement should be carried and in addition a steward should be allowed for, to assist with catering for extra scientific and administrative staff. Over and above the ship's complement, the project manager and an electronics engineer, both from the White Fish Authority, should be aboard for most voyages. A scientific officer from MAFF or DAFS should sail with the vessel at least part of the time to collect relevant biological information.

Finally, the project should be allocated a marine engineering superintendent, who would occasionally sail with the vessel. Therefore, the total ship's complement should be as follows:-

Officers & Crew:	Master
	Radio Operator
	Mate
	Bosun
	14 Deckhands
	Chief Engineer
	3 Engineers
	Cook
	Assistant Cook
	Steward
Technical Staff:	Project Manager
	Fisheries Biologist
	Electronics Engineer
	Engineering Superintendent

The last three personnel would not be engaged full-time at sea, and it would not be necessary to allocate more than two berths for these posts. However, it would be an advantage if the selected vessel had enough accommodation, or could be suitably modified, to accept two more supernumeraries for scientific or other purposes.

The length of periods actually fishing will be dictated by fuel, water and stores consumption, but it would be reasonable to arrange a break of 48 hours in Port Stanley every thirty days in any case. The fishing area is likely to be between 400 and 600 miles from port; about two days steam each way. Therefore, six days must be written off each month for these purposes.

In addition to air fares for scheduled crew changes, and administrative and technical project staff travel, it would be prudent to allow a figure equivalent to an extra complete crew change for eventualities such as sickness, etc.

Use of research vessel

The oceangoing stern trawlers operated variously by MAFF, DAFS and NERC would, of course, be capable of operating a resource survey in these waters, but with the exception of the George Reay, they would not be capable of retaining any more than a token quantity of sample fish. George Reay, Cirolana and Scotia are presumably strengthened for operation in ice, but these vessels are not normally operated at the intensive fishing rate of Humberside commercial vessels and there would seem to be no evidence that they are inherently more reliable mechanically. Nonetheless, they provide very comfortable fishing platforms with ample accommodation for extra scientific observers. Operating costs would be similar with only insignificant reductions in crew costs. Cirolana is fitted with a satellite navigator system.

It is, however, extremely unlikely that these vessels could, in any case, be made available for this task because of their existing extensive commitments in marine fisheries research within our own new 200 mile zone.

The foregoing, together with Appendix C, comprises the contribution by the White Fish Authority.

Meeting the cost of the survey

Lord Shackleton's Report envisaged the expenditure by Her Majesty's Government of £6m on fisheries development in the Falkland Islands over a period of several years, of which an initial commercial survey was expected to absorb £1m. The present survey, although modelled on the lines envisaged in Lord Shackleton's Report, is not essentially concerned with the development of the Falkland Islands. It should contribute to that end, but it is seen by the Committee as primarily a United Kingdom development project. If the survey demonstrates that it is a commercial proposition for the home based distant water fleet to operate in the South West Atlantic, there is no reason to think that any greater proportion of future costs of fishing development need be met by the Government than are incurred in any other distant water fishing ground.

As a result of the depletion of traditional grounds, changes in migratory patterns and of diplomatic reverses and Governmental and EEC action, the British fishing industry is in a bad state. Estimates indicate that Britain will lose some 213,000 tonnes annually from distant water fishing grounds. The industry as a whole, and individual firms in particular are in no position to finance lengthy exploratory voyages or to engage in speculative development. There must be a reasonable degree of certainty that the fish are there in adequate concentrations, that they can be caught by proved techniques and that the end product is marketable at a profit. If this is shown to be the case, commercial firms can plan expansion into the South Atlantic with some degree of commercial confidence.

The Committee will, accordingly, ask the Government to fund this survey as an essential and urgent research and development project in the interests of the United Kingdom. It would add that the survey is implementing part of Lord Shackleton's Report commissioned by the Overseas Development Ministry, and that it should, if the results are satisfactory, lead to direct benefit for the Falkland Islands, and, possibly to the populations of the British Dependent Territories of St Helen and Ascension Island.

It is appreciated that MAFF Fisheries research funds for 1978/79 will be fully allocated. The Committee suggests that the survey is of sufficient general importance to justify an additional grant from Central Government funds. (See Appendix C)

Geographical scope of the survey

The Committee concluded that the natural base for the survey, as for any future commercial fisheries development in the South West Atlantic, would be Port Stanley in the Falkland Islands. An Argentine or Chilean port in the extreme south of South America, where freezer facilities and regular shipping services would be available, was discussed but it was concluded that, for a survey, these advantages were outweighed by disadvantages, in particular distance from the area to be surveyed.

The survey will operate mainly in the waters to the south east of the Falkland Islands, and in the area of South Georgia, the South Orkneys and the South Sandwich Islands. Grytviken in South Georgia will be an advanced base for this purpose, as it would be in the case of a commercial development. An outline operational plan will be prepared in due course and guidance will be sought from the Foreign and Commonwealth Office in the light of the progress of the Anglo Argentine discussions on economic co-operation.

St Helena, Ascension and Tristan da Cunha

It is the view of the industry that the tropical oceanic fish to be found in the potential 200 mile fishery zones around these islands, although valuable and commanding a high price in southern Europe and the Americas, are not readily marketable in the United Kingdom. The oceanic fishery with lines for these wide ranging fish stocks, is very much a Japanese and Korean speciality. The Overseas Development Ministry is, however, aware of the potential benefit to the populations of these British Dependent Territories and of fishery development and arrangements could be made for the survey vessel to carry out a programme at each of these islands if this is required. It would add to the cost according to the time occupied and would preferably be done on the outward voyage. A freezer trawler would not be wholly suitable for this area and the programme would be limited accordingly. Midwater trawling, the investigation of squid as a resource, sampling of species and surveillance of other fishing craft are suggested applications.

Government survey vessels

It would obviously very much increase the safety of the survey and its scientific effectiveness if the survey vessel could work in close contact with a Government scientific and research vessel. Additional scientific equipment, scientists and facilities could be carried.

If a krill survey is to be included (see below), a second vessel would be essential. One of the Torry Research Station's vessels, if available, would be ideal for this purpose. It is hoped that the British Antarctic Survey will be authorised and able to take an active part in the operation of the survey and that discussions will take place at an early date. The British Antarctic Survey vessels and the RRS Shackleton may be able to provide support. The area is visited regularly by HMS Endurance and by one or more Fleet Auxiliaries.

The influence of fish on the cost of living index

The consumer organisations represented on the Committee wish the point to be made that there is a market for large quantities of white fish of acceptable quality provided that the landed price is reasonable. At present, there is a danger of fish being priced off the market. Available imported fish is too expensive in relation to prices of other foods to restore fish to its place in the diet.

Observations by British United Trawlers Ltd.

Observations by British United Trawlers Ltd. are included at Appendix E.

Conclusion

The industry would, ideally, like to see a survey carried out over twelve months by three vessels for maximum coverage. The plan prepared by the White Fish Authority for one vessel to be on the ground for seven months is put forward as the acceptable minimum. It is considered that a commercial survey, following the results of previous scientific research work in this area, is essential before the results achieved by expenditure on scientific research over more than fifty years can be translated into practical benefits for this country and its fishing industry.

This memorandum should be read in conjunction with the following publications:

1. Lord Shackleton's Economic Survey of the Falkland Islands (1976)

2. The living resources of the Southern Ocean (FAO GLO/50/77/1)

3. The utilisation of krill (FAO GLO/50/77/3)

4. The harvesting of krill (FAO GLO/50/77/2)

Additional information on fish stock assessments in the South West Atlantic is contained in FAO paper CARPAS/6/74/4 and supplement 1 (in Spanish).

APPENDIX A

SAFC Minutes are sent to the following:

Alginate Industries	A H Stewart
Boston Deep Sea Fisheries Ltd	A W Suddaby
Boyd Line Ltd	T W Boyd Junior
British Antarctic Survey	Dr R M Laws
British United Trawlers Ltd	G Hellyer L H Swaine
Charringtons Industrial Holdings Ltd	J Dowling
Christian Salvesen Ltd	A Cole
Confederation of Fried Fish Caterers Associations	David Toulson
Falkland Islands Company	F G Mitchell
Falkland Islands Office	Miss Leif Barton
Falkland Islands Research and Development Association	Sir John Barlow J Broadbent Jones L Daillie J Dodwell E W Hunter Christie J Spencer
Federation of British Port Wholesale Fish Merchants Associations	K Richmond
Food and Agricultural Organisation of the UN	Gordon Eddie
Institute of Oceanographic Sciences	Sir George Deacon
International Association of Fish Meal Manufacturers	F W Burton
Ministry of Agriculture Fisheries & Food	K W Wilkes
National Farmers Union	B L Fowler
National Federation of Fish Fryers	A Chrisfield
National Federation of Inland Wholesale Fish Merchants	G A Battson
National Research & Development Corporation	Dr J B Lewis
H B Nickerson & Sons Ltd	J E A Nickerson
Sallingbury Limited	Major General N Gribbon
Scott Polar Research Institute	Dr G Robin
Shellfish Association of Great Britain	G A A Gardner
Thomas Hamling & Co Ltd	G E Wilson

Torry Research Station (MAFF)	J J Connell
UK Association of Frozen Food Producers	M J Defrates
Vitrition Ltd	J A Hemsley
White Fish Authority	H McDiarmid
Young's Seafoods Ltd	Edwin Young

Michael Clark Hutchinson MP
Rt Hon Hugh Fraser MP
James Johnson MP
Dennis Roberts
Lord Shackleton

APPENDIX B

A KRILL SURVEY

As stated, the Committee does not place a high priority on krill catching techniques until an acceptable method of preparing and marketing krill for human consumption has been developed. A company studying the utilisation of krill has enquired whether the survey could include a short programme of krill catching and preparation and is willing to contribute to the cost. However, the equipment needed is bulky and the time and expense involved in changing it is likely to be considerable. The proposal will be investigated further, but the use of a second ship for a short time, if one were available, would be a more satisfactory proposition.

It seems probable that krill will be most successfully marketed for human consumption as reconstituted prawn or shrimp bound with a gelling agent and probably deep fried. The processed raw material for prawn balls, a speciality of the world wide Chinese restaurant trade, is sold wholesale in London at prices varying seasonally between £2 and £4 per pound. This is substantially above the prices obtained for material for Norwegian fish balls or English fish fingers.

APPENDIX C

PROJECT BUDGETING COSTS

Operating Costs

These are calculated for a seven-month (210-day) period and also for a twelve-month (365-day) period, each with an additional 50 days' passage time. Costs have been calculated on the basis of 1977 Arctic fishing operations for two classes of whole fish freezer trawlers. Both these vessels were built after 1974.

In view of the remoteness of the area and the unknown fishing grounds, and known gear damage problems in that area generally, costs for all stores and fishing gear and repairs have been increased by 50%, from the UK operating figure.

A figure of £15,000 has been included for modifications to the vessel. This is to cover the satellite navigator only. Other modifications should be minor and the vessel should only be accepted as "ready for fishing". Something in the region of 150 tons of fuel oil would be required every thirty days while fishing. No figure has been introduced for transhipment costs of fish, as it is assessed that, if required, transhipment would be financed by the value of the fish.

Full charter is calculated at about £3,480 per day for a Class 1 vessel and £2,940 per day for a Class 2 vessel. This includes fuel, crew, stores, fishing gear, repairs, insurance, harbour dues, management, modifications to the vessel, and depreciation. This could scarcely be bettered by bare-boat charter and direct payment of crew and ship expenses; the latter system would, in any case, require further management expenses.

Project Management Fees

These are calculated on salary plus full overhead return, but without profit. The salary in each includes a 7½% bonus as an incentive payment to make the employment competitive with other overseas management projects.

Revenue

Against the above costs could be set a possible revenue from sale of frozen fish, which could reasonably be set at 800 tonnes over a 12-month period @ £200/tonne: £160,000

SEVEN-MONTH SURVEY

(210 days plus 50 days' passage time = 260 days)

Operating Costs

Full charter:

Class 1 (250' - 260') - £3,480 per day

Class 2 (220' - 230') - £2,940 per day

Assuming the longer class to be chosen, allow a budget figure of £905,000.

SEVEN-MONTH SURVEY - Continued

Project Management Fees

The costs are estimated at:-

Project Manager	40 weeks @ 590	£ 24,000
Electronics Engineer	20 weeks @ 472	10,000
Engineer Superintendent	30 weeks @ 472	15,000
	Total Approx.:	£50,000

Budgeting Cost Summary

Full charter of 240/250 feet stern freezer trawler for 260 days including all direct spending costs	£ 905,000
3 return fares for crew and 3 management staff; covering expenses for management staff	75,000
Cost of providing 3 management staff	50,000
	£1,030,000

TWELVE-MONTH SURVEY

(365 days plus 50 days' passage time = 415 days)

Operating Costs

Full charter:

Class 1 (250' - 260') - £3,480 per day

Class 2 (220' - 230') - £2,940 per day

Assuming the longer class to be chosen, allow a budget figure of £1,444,200

Project Management Fees

Project Manager	56 weeks @ 590	£ 33,040
Electronics Manager	30 weeks @ 472	14,160
Engineer Superintendent	40 weeks @ 472	18,880
		£66,080

Budgeting Costs Summary

Full charter of 240/250 feet stern freezer trawler for 415 days including all direct spending costs	£1,444,200
4 return fares for crew and 3 management	90,000
Cost of providing 3 management staff	66,080
Total	£1,600,380

APPENDIX D

Membership of the South Atlantic Fisheries Committee, as at 13 March 1978

President

James Johnson Esq MP

Chairman

E.W. Hunter Christie Esq BL

Honorary Member

Sir George Deacon

Alginate Industries
Association of Fish Meal Manufacturers
Boston Deep Sea Fisheries Ltd
Boyd Line Ltd
British United Trawlers Ltd
Christian Salvesen Ltd
Confederation of Fried Fish Caterers Association
Falkland Islands Co Ltd
Federation of British Port Wholesale Fish Merchants Association
National Farmers Union
National Federation of Fish Fryers
National Federation of Inland Wholesale Fish Merchants
Shellfish Association of Great Britain
Thomas Hamling & Co Ltd
Vitrition Ltd
White Fish Authority
Young's Seafoods Ltd

Secretariat

Sallingbury Ltd

APPENDIX E

OBSERVATIONS OF BRITISH UNITED TRAWLERS LTD

Type of Vessel

Page 4 - final paragraph

B.U.T. does not advocate the use of side trawlers for this project but feels that the capacity of stern trawlers to fish in rougher weather than side trawlers should not be overrated, particularly in the context of the waters and conditions around the Falkland Islands.

Page 5 - paragraph 2

B.U.T. feels that the suitability of a filleter trawler for this project is dismissed far too quickly and that further careful consideration needs to be given to the relative advantages of filleter and block freezer trawlers, particularly in the context of a twelve-month operation. In our experience the maintenance breakdown aspect of filleting machinery should not be overstated. The real point is whether suitable filleting machinery could be provided for the species likely to be caught. In the context of a year's operation and the total cost involved, suppliers of filleting machinery may well be capable of devising a practical system. In our view the principal advantages of a filleter trawler are: the ability to turn any proportion of the catch unsuitable for human consumption into fish meal; the effective utilisation of the ship's hold capacity for final products, i.e. cartons of fillets or boxes of fish meal (compared with the block ships cargo 50 per cent of which is offal for ultimate reduction); and the ability to land easily-handled final products for onward shipment rather than blocks of frozen whole fish. Even though the bulk of the catch could be turned into fillets or fish meal a filleter trawler could have some capacity for the production of frozen blocks of whole fish for subsequent specimen analysis. Crew costs are higher, but so is the value of the filleted product. Packaging costs have to be borne ultimately by the consumer in a block fishing operation and processing/packaging costs are reflected in the market value of the frozen block.

Conduct of Survey

Page 5 - paragraph 4

B.U.T. feels strongly that, if the experimental fishing project is to have real value in relation to the costs incurred, fishing operations should be undertaken for a consecutive twelve-month period in the waters around the Falkland Islands and the travelling time to and from the U.K. should be in addition to this. (B.U.T.'s previous experience of fishing these waters attempted to cover a whole twelve-month cycle but in practice various gaps and overlaps occurred).

Crewing and Manning of Survey

Page 6 - final paragraph

If fishing takes place for a complete twelve-months, B.U.T. suggests that it may only be necessary to change the crews after the first six months.

Page 7 - paragraph 2

In listing the officers and crew, B.U.T. feels that it is vital that the chief engineer should be a trawler engineer preferably with considerable experience of the actual vessel chosen rather than a merchant engineer perhaps with more impressive qualifications. A thorough knowledge of the trawler's operational characteristics will be crucial when operating at such a distance from significant back-up facilities.

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(4)

GOVERNMENT HOUSE,
FALKLAND ISLANDS.

10 May 1978

Air Commodore B G Frow DSO DFC
16 Regency Street
LONDON SW1

Thank you for sending me copies of the South Atlantic Fisheries Committee's memorandum on their proposals for a survey of fish resources in the South West Atlantic, which the Committee had not otherwise sent to me directly. I have, however, read it with great interest and am circulating it to Honourable Members of the Islands' Councils.

J R W Parker

Reference.....

(5)

CS (to see) a/v

AS(C)

1. Please circulate copies of the attached letters and memorandum to all Councillors.

Governor

8 May 1978