



International Fishmeal and Fish Oil Organisation
50th anniversary

IAFMM FEO IFOMA IFFO
1959 to 2009

2009 is the 50th anniversary of the birth in 1959 in Madrid
of the IFFO organisation then known as IAFMM.
Today IFFO is the oldest global fishing trade association in existence
and a tribute to the vision and dedication
of many industry personalities from around the world.

Preface

Back in 1969, ten years after the foundation of the organisation that has become IFFO, Jim Gardiner, the Founder President stated: *“I doubt if there are many major industries in the world where most of the leaders regularly meet together on Christian name terms to discuss their major problems, and where leading scientists advising the industry, including directors of world famous institutes, meet one another and the leading producers in equal harmony and spirit of cooperation. It is even more remarkable in the fishing industry which is noted for its rugged individualism. This is precisely what happens in the fishmeal industry under the aegis of the International Association”*.

Later in a booklet commemorating the first 25 years of the organisation, the Director General of IAFMM, Derick Burton, commented: *“This spirit of harmony and co-operation has continued and increased throughout the quarter century of the Association's existence”*, adding *“I am sure that it will continue to do so during the next 25 years”*.

So here we are in 2009, and as the current President of IFFO, I am delighted to confirm that this same spirit of cooperation continues to live on after 50 years. We hope you enjoy IFFO's 50th anniversary booklet charting the history of our development. From small beginnings representing only producers, we have become a truly global and well respected organisation covering the major part of the value chain, including suppliers, customers, and their own customers. I want to thank and congratulate everyone who has made this possible and look forward to IFFO's continuing success.



Nils Christian Jensen
IFFO President 2008 - 2009



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A brief history of the organisation

The early years

IFFO was formed in 2001, but has a collective history of 50 years, encompassing the activities of its predecessors, namely the Fishmeal Exporters' Organisation (FEO), International Association of Fish Meal Manufacturers (IAFMM) and International Fishmeal and Oil Manufacturers' Association (IFOMA).

The movement towards a trade organisation was initiated by Louis Abel of France when an informal meeting of European fishmeal producers and scientists was held in Paris early in the 1950s, followed by another meeting in London. In 1956 and 1957 two larger meetings were held in London. In 1958 the South African Fish Meal Producers Organisation offered hospitality in Cape Town and longer and more detailed Producers and Scientific meetings were held. Jim Gardiner, President of the UK Association, and Abe Shapiro, Chairman of Oceana Group, acted as joint Chairmen of the meeting. More countries were represented, including USA, Denmark, Norway, Spain, Angola, Iceland and Portugal. At a follow-up meeting in Madrid in 1959 it was decided that the International Association of Fish Meal Manufacturers (IAFMM) should be established by producers from Angola, France, Germany, South Africa, Spain and UK. These meetings were essentially in the format subsequently adopted for the Annual Conferences.

In 1960, when the apparent imbalance between supply and demand was seriously affecting world markets, some major exporters of fishmeal realised the need for more detailed study of the main consuming markets and founded the Fishmeal Exporters' Organisation (FEO), with producers and exporters from Angola, Norway, South Africa and Peru, and subsequently Chile, Denmark and Iceland. Those who participated on behalf of Peru included Luis Banchemo Rossi, who later became the largest producer of fishmeal in the world and Carlos Sotomayor. Jacques Schwarz, a major

trader based in Paris, was appointed as the first Secretary General in 1960 when the "Convenio de Paris" was signed by the largest exporters of fishmeal forming the Fishmeal Exporters' Organisation (FEO). In 1970 CORPESCA, then and now, the largest producer in Chile, joined FEO and played a major role in organising the data used for the analysis of the markets.



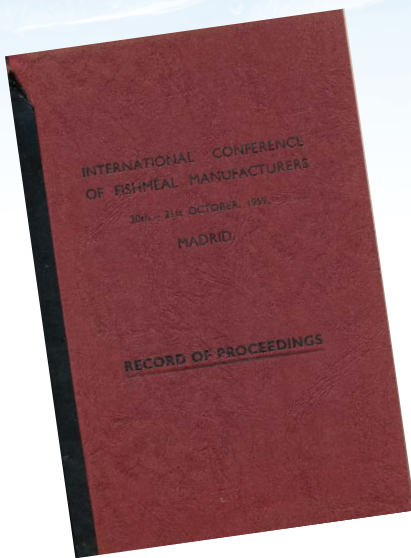
Luis Banchemo Rossi was a young visionary of great energy, who became the driving force behind the Peruvian fishing revolution of the 1960s. Even today he is held up as a model for Peruvian businessmen in the fishing industry

Following the formation of IAFMM in 1959 - with Jim Gardiner as its first President and Derick Burton, a London lawyer, as its first Director - several other countries joined during the next three years, including Iceland, Norway, USA, Belgium, Peru, Netherlands, Sweden and Chile. Olaf Dotzler, Managing Director of Norsildmel, Norway, was appointed IAFMM's first Vice President, followed by Abe Shapiro (South Africa) and Carlos Del Rio of Peru, then President of the National Fishery Society of Peru (SNP).

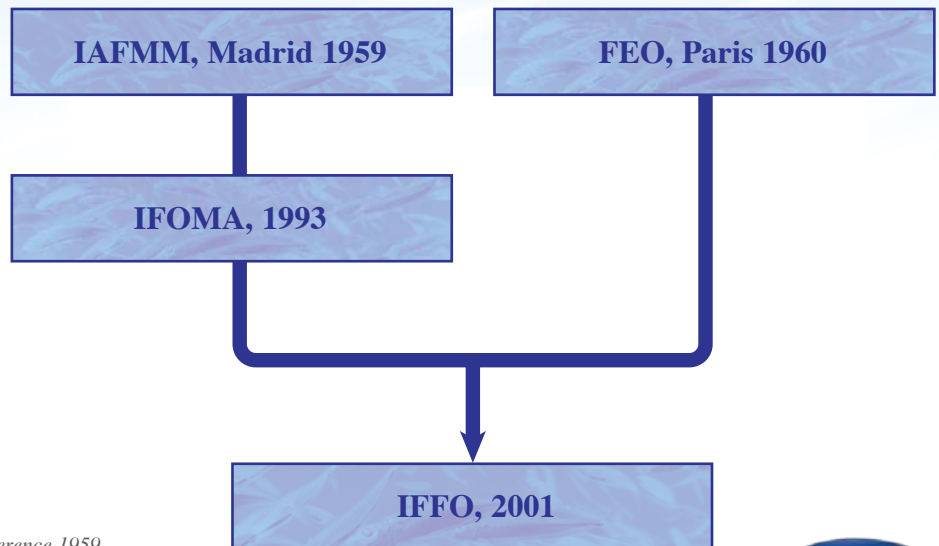
In 1964 IAFMM, under its second president Alex Olney (UK), decided to invite agents, importers and brokers to attend its Annual Meetings. During that year producers in Denmark and Morocco joined IAFMM.



Arne Askeland, Pat O'Sullivan, Harry Kriegel, and Abe Shapiro



Record of Proceedings for the Madrid Conference 1959



Changing industry structure

Since the beginning of IAFMM and FEO, the number of companies and factories producing fishmeal has decreased significantly, although the actual yearly volume of meal produced world-wide has increased or remained static. In Norway, for example, in the early 1960s there were over 70 factories; today there are eight. A similar picture can be painted for the other founding members of IAFMM and FEO. In general, this development has been as a result of consolidation and mergers to achieve economies of scale.

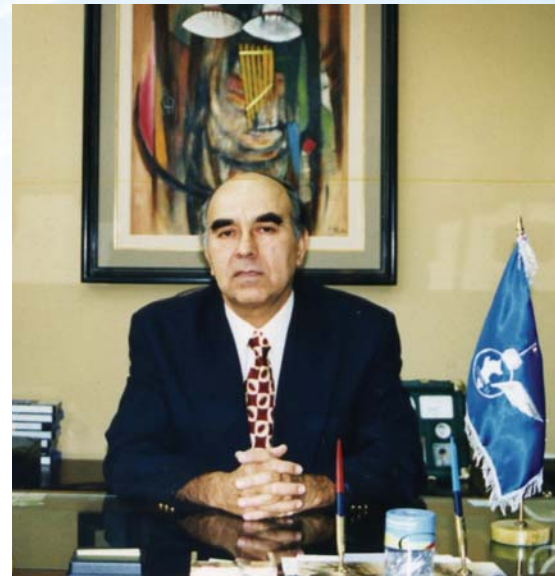
Along with a reduction in the number of plants has been an improvement in the technology used in the remaining plants. Considerable improvements have now been made in the yield of fishmeal obtained with improved protein recovery from the effluent water, as well as greatly reduced gaseous emissions. Also the drying of the fishmeal has moved from direct flame drying towards indirect stream drying. This results in a more even drying temperature and improved digestibility of the resulting fishmeal, thereby producing prime and super-prime fishmeals rather than the previously more common FAQ fishmeal.

However, there have been some changes which have not been driven by commercial pressure.

The most notable such change was the nationalisation of the fishmeal industry of Peru in late 1972 (following the close of the IAFMM Annual Conference in Rome) because of the collapse of the sardine fishery. The 1974 Annual Conference was convened in Lima to consolidate activities with the new team of Pesca Peru. The President at the time of the Lima conference was Jes Petersen of Denmark, who did a remarkable job liaising with the military which was running Pesca Peru. Three years later the Presidency was first filled by a Peruvian, Sigfredo Leo, then head of the government-controlled Pesca Peru.



Nationalisation of the fishmeal industry of Peru, 1972



Dante Matellini privatised Pesca Peru

Pesca Peru remained a loyal member of IAFMM until 1997, when the nationalised industry was privatised by Dante Matellini, who had been a serving officer in the Peruvian Navy and, after successfully privatising Pesca Peru, went on to privatise the national airline Aero Peru. Later on with the birth of IFFO in 2001, the large majority of the private Peruvian industry joined the Organisation as Producer Members.

In 1990, following years of growing and productive co-operation between producers and traders, end-users and related service industries, the then IAFMM President, Felipe Zaldivar Larraine, Chairman of CORPESCA in Chile, together with the second Director General, Stuart Barlow, invited IAFMM to consider formalising the relationship by instituting Associate Membership of IAFMM. This offered membership to companies in the industry which were not producers of fishmeal and fish oil. This offer was readily taken up and 45 new Associate Members joined in the first year.

Meanwhile, in September 1990 under the FEO President Manuel Sotomayor, for the first time the Peruvian companies, represented by their Principals, asked to be members of FEO instead of being represented by SNP of Peru. This was agreed. In 1991 Jean-Francois Mittaine joined FEO charged with developing a new focus on the market information. This mainly showed itself in the enlargement of the *Weekly Report* and its distribution in a more timely way in both English and Spanish. This was being done at the time of the FEO President, Jorge Sarquis, who actively encouraged the growth in number of members of the Organisation, particularly from Chile and Peru. In 1992 the office of FEO-Peru was opened in Lima with the support of Sonia Cruz, initially serving seven Peruvian members, which grew to 34 members by 2001.



Stuart Barlow and Vivian Epstein at the entrance to the St Albans (UK) head office

In 1992 the then President of IAFMM, Vivian Epstein, MD of Suiderland Development Corp., South Africa, realised that, because IAFMM had developed over the years into an essentially scientific research-based organisation, there were grants and UK tax advantages in reconstituting IAFMM as an English company limited by guarantee. This was achieved with advice from the UK Government's Department of Trade and Industry and a new body was formed in 1993 called the International Fishmeal and Oil Manufacturers' Association (IFOMA). Under this new structure IFOMA was able to purchase new offices in St Albans, north of London - a much better facility than the original cramped rented offices of IAFMM on the 3rd and 4th floors of an old building in the centre of London. IFOMA also had a branch office in Lima.



IFOMA, FEO and the merger to form IFFO



Helge Korsager



Eduardo Goycoolea

In 1999, the main financiers of IFOMA (formerly IAFMM) and FEO questioned the costs and efficiencies of running two international organisations and proposed that the work and administration of both organisations should be merged into one organisation. The Presidents of both organisations, namely Helge Korsager (UK) of IFOMA and Eduardo Goycoolea (Chile) of FEO were invited to consider the feasibility of such a merger, together with the two managers, Stuart Barlow, Director General of IFOMA and Joe Bololanik, the Secretary General of FEO.

The result was the formation of the International Fishmeal and Fish Oil Organisation (IFFO) in 2001 with headquarters at St Albans, under the joint care-taker Presidency of Messrs Korsager and Goycoolea and with Stuart Barlow being appointed as Director General and Joe Bololanik as Executive Adviser. The Paris office was subsequently closed.



Stuart Barlow and Joe Bololanik

During this time of transition, concern was felt that the many producer companies in Peru might choose not to join the new organisation, mainly because some did not have a history of participating in the activities of the earlier organisations. The first elected President of IFFO, Ivan Orlic of Peru, who had played a significant part in bringing the two organisations together, worked tirelessly persuading producers in Peru to join IFFO during his two years in office. As a result of his efforts, IFFO flourished with considerable support from Producer Members and Associate Members in Peru, as well as continued support from other member countries which had formed the backbone of both organisations.

IFFO today

In the years following the IFOMA/FEO merger there has been significant consolidation among fishmeal producers, especially in Peru. Today (June 2009) IFFO membership stands at 57 Producer Members and 113 Associate Members based in 34 countries.



Mrs Elsa Orlic and Mr Ivan Orlic

In 2004 Jonathan Shepherd was appointed to succeed Stuart Barlow as Director General on his retirement, which happened during the tenure of IFFO's first Lady President, Solveig Samueldottir from Iceland - see photograph page 37. Recent priorities have included placing greater focus on the whole value chain, bringing traders and buyers of fishmeal and fish oil - and even food processors and retailers - into regular close dialogue with producers under the IFFO umbrella to mutual advantage. In addition to the UK head office and the Peruvian sub-office in Lima, IFFO has also now established a presence in Beijing, China, thus covering the largest producer and largest consumer countries of the industry. At the time of writing, the organisation is about to launch its 'Responsible Supply Standard' (RSS), a business-to-business assurance scheme which enables producers to clearly demonstrate their commitment to responsible sourcing and responsible manufacture. The RSS is based on independently-audited verification of good practice by the fishmeal and fish oil industry.

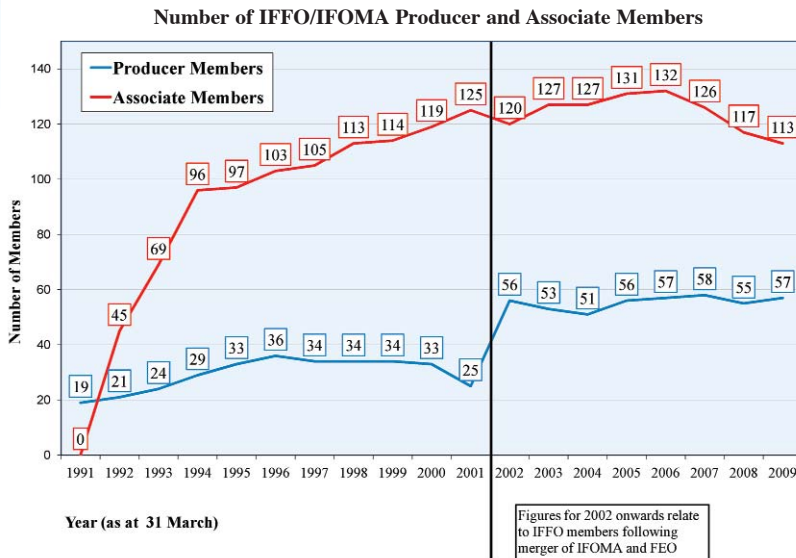
Today's small management team is truly international with Jonathan Shepherd (Director General) and Andrew Jackson (Technical Director)



The IFFO Management Team in 2006, at Miami

based at the UK head office, Jorge Mora (Operations Director) based in Peru and Wenpu Jin (Project Manager) based in China - backed up by dedicated support staff. The Director General in turn reports to a management board (comprising 13 directors), which provides overall strategic direction and budgetary control, and he works closely with the President (currently Nils Christian Jensen of Denmark) during his two year term of office.

2009 is therefore the 50th anniversary of the birth of the IFFO organisation - then known as IAFMM - back in 1959 in Madrid, and followed shortly after by FEO in Paris. Today IFFO is the oldest global fishing trade association in existence and a tribute to the vision and dedication of so many industry personalities from around the world.



Developing the market for fishmeal

Evaluating the market

From the beginning of IAFMM in 1959, and for the next 10 years, concern was expressed by various members about the ever-growing production of fishmeal by Peru, the impact this was claimed to have on markets not used to such quantities and the consequent high stocks and reduced prices.

The need to promote fishmeal usage in established and new markets was identified as a necessity, but the question remained as to 'how'.

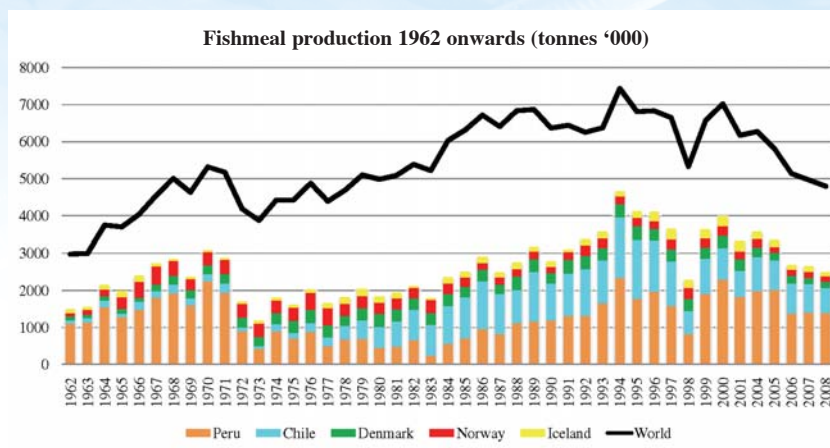
The responsibility for answering that question was given in 1968 to an IAFMM committee called the Fishmeal Action Committee under the chairmanship of Pat O'Sullivan, who was to become President in 1971. Mr O'Sullivan was a wise choice as this South African had a rare gift for uniting opposing views without either side believing it had lost the argument - and there were a considerable number of opposing views!

The committee soon realised that the producer had little idea of why the feed mixer used fishmeal. Using the services of the recently appointed staff scientist, Dr Stuart Barlow, and the knowledge of the IAFMM Scientific Committee, under the chairmanship of another able South African, Professor Guido Dreosti of Cape Town University, together with considerable advice from the IAFMM's Nutrition Consultant, Dr Kenneth Carpenter of Cambridge University, contacts were made with the European feed industry to establish the strengths and weaknesses in their understanding of fishmeal. On the basis of this information, IAFMM launched its first symposium directed at the European feed industry, the largest market for fishmeal at the time.

The Symposium took place in Amsterdam in October 1969 and was a success. Both sides learned much from each other and forged long-lasting links with colleagues. This helped our industry in many different ways to weather future challenges together, particularly those generated by European Union legislators.

These beginnings gave the captains of the industry confidence in their knowledge, and so value, of their product. Other similar symposia followed. Soon the industry realised that even closer ties were necessary, and IAFMM's staff visited the fishmeal users individually.

Another early initiative in the promotion of fishmeal was to



evaluate and summarise published research work and also to work closely with the feed industry, to find out more about its nutritional value. This revealed that fishmeal was more than just high quality animal protein - it boosted performance, especially in starter feeds. A series of IAFMM *Technical Bulletins* for the feed industry was issued in several languages beginning in 1970. As confidence grew, IAFMM launched a Scientific Advisory Service for the

animal feed industry in 1972. The demand for information generated by these initiatives resulted in the need for additional permanent staff. As a result an Animal Nutritionist, Dr Ian Pike, was appointed to the staff in 1974. There followed increased activity, including Technical Missions to expanding markets in the Middle East, Far East, South America and Eastern Europe, sometimes in the company of the Technical Manager of FEO, Pierre Jaubert.

An IAFMM Research Programme was initiated for both poultry and pigs - first in the UK and then with pigs in Germany and early weaned pigs in the USA. In this last country, research was carried out in the heart of the soybean-producing region at Kansas State University. As a result, fishmeal was introduced into what had previously been a corn/soya dominated market for all pigs. In a short space of time the use of fishmeal in pig feeds overtook that in poultry feeds in the USA.

Attention was then turned to ruminants where fishmeal was shown to improve performance for high yielding cows, breeding ewes and lambs. This provided a further growing



Fishmeal in US pig feed overtook that in poultry rations in the 1970s



Farmed shrimps

market during the 1980s. For these ruminants and for early weaned pigs the value of fishmeal against soya was 3:1 or higher. However at the bottom end of the market (particularly finisher feeds and layer feeds - where the value was just 1.6:1) its use gradually disappeared as the price of fishmeal rose.

Following the first promotional visit of Peruvian producers to China in 1972, IAFMM sent a technical mission to China in 1983 under the leadership of the then President, Jon Magnusson of Iceland. Various technical visits followed and *Technical Bulletins* were first issued in the Mandarin language in 1989. Research work then started on aspects of the use of fishmeal in carp diets. At the same time the salmon farming industry started to grow in Scotland and Norway. Aquaculture feeds today account for just over 60 per cent of global demand for fishmeal with the balance of demand accounted for land animal feeds (mainly young pigs).



Early concerns on the balance of supply and demand

The marketing and price fluctuations of fishmeal have been a central topic of discussion since the formation of IAFMM and FEO. Indeed the price dropped to levels which threatened the future viability of the industry, as a result of the unexpected rise of fishmeal production in Peru in the late 1950s and early 1960s. This proved the catalyst for the different production centres of the industry to begin talking together.

In 1960 Peru's output started to grow spectacularly, progressing from 350,000 tonnes to 1,200,000 tonnes in 1962. FEO helped defend the industry against the Portuguese speculators who were “working” the Peruvian producers against one another and against producers in Angola. Within a few months, the price of fishmeal had dropped without reason from a normal level of \$160 per tonne to less than \$80 per tonne.

During 1960, the apparent imbalance between availability of fishmeal and demand increased alarmingly. The UN Food and Agriculture Organisation (FAO), largely at the request of the US authorities, convened a conference on fishmeal in March 1961, at which IAFMM was represented, to see what could be done to save the industry from financial disaster.

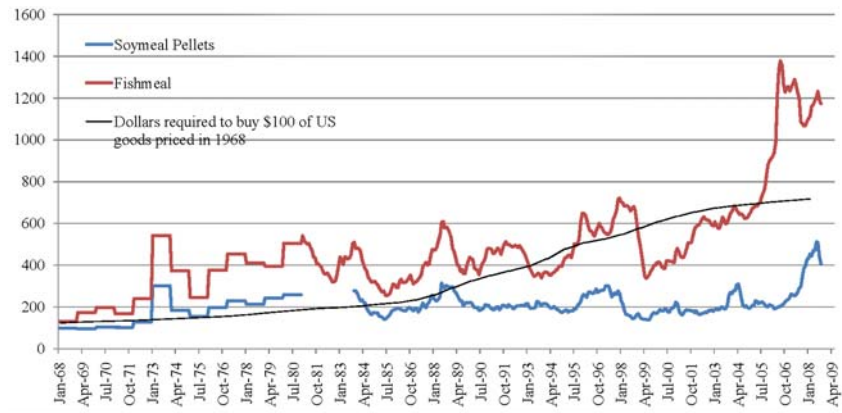
There was a suggestion that a solution might be a multilateral intergovernmental commodity arrangement, because anti-trust laws forbade direct commercial arrangements between producers. In the event, the major marketing conclusion of the FAO meeting was that fishmeal

producers should endeavour to ensure regular flow of supplies throughout the year and should follow price policies which were realistic in relation to competing high protein feed even when fishmeal was in short supply. IAFMM shortly afterwards started to produce monthly statistics to help members follow trends in the market.

The FAO meeting report also recommended measures designed to improve and extend usage by means of scientific research and market promotion, which were followed up by IAFMM.

In May 1963, it was again feared there would be a problem of over-supply and the setting up of an intergovernmental commodity arrangement was re-examined. IAFMM engaged Dr F. Chalmers Wright, who until his retirement was its Economic Consultant. He prepared a significant paper entitled *The Growth of World Supplies of Fish Meal* with a section on intergovernmental arrangements.

The price of fishmeal 1968 to 2009 (US dollars)



No over-supply, - but a risk of short supply

Promotion and competition

Dr Wright concluded that there was no over-supply, but a risk over the coming years of short supply, and that there were problems associated with intergovernmental commodity arrangements which made them inappropriate for the fishmeal industry.

Under the Presidency of Don Davidson (UK) in 1968 Dr Wright instituted an *Annual Digest of Statistics* enabling members of IAFMM to reach a better understanding of market trends.

In order to understand the market for fishmeal more thoroughly, in the same year IAFMM commissioned the London-based Economic Research Group to undertake a market survey of six European countries, as Europe was the largest market for fishmeal.

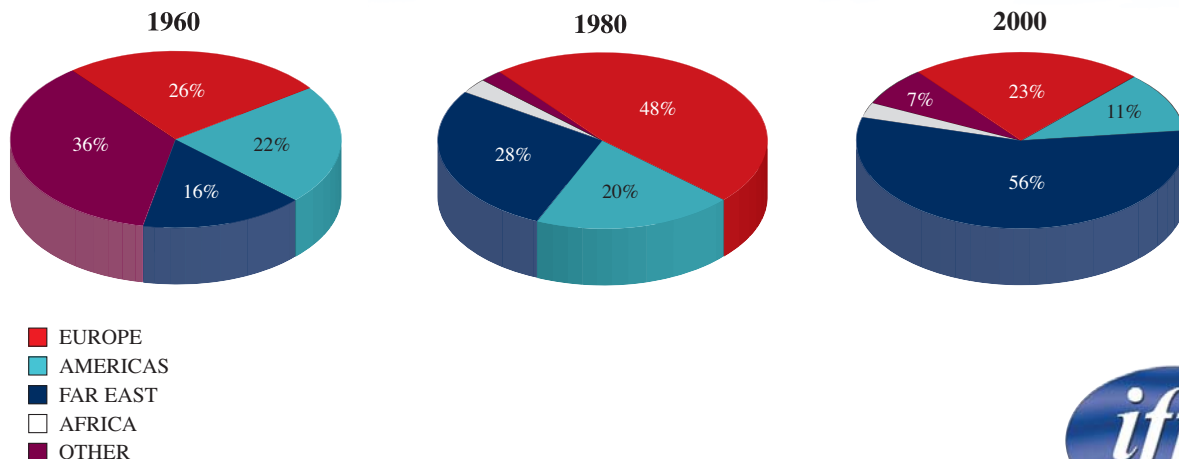
Before IAFMM was formed, two countries (Norway and South Africa) had already formed national fishmeal sales organisations to ensure steady supplies of fishmeal to the markets. In 1970, Empresa Peruana de Comercialización

de Harina y Aceite de Pescado (EPCHAP) was established in Peru as the exclusive marketing channel for all fishmeal producers nationally.

It was in 1972 that EPCHAP established new market outlets in China and Russia. At the time, nobody could foresee the dominant role China would play in the consumption of fishmeal. It was not until 1987 that the significance of the Far East countries began to be recognised, growing to twice the size of the European markets in the following 10 years. In anticipation of the potential of these markets, IAFMM commissioned a market study of China, Japan and Taiwan in 1989 and organised its first Annual Conference in the Far East in that same year with Halli Gislason (Iceland) as the President.

1972 also saw recognition of the effects of currency fluctuations on the competitiveness and viability of the fishmeal industry, affecting different countries in different ways.

Changing pattern of global fishmeal consumption 1960 to 2000



Soybean meal has generally been seen as the main competitor to fishmeal. This became evident to traders in the late 1960s prompting IAFMM to start its programme of promotion in 1969. In 1971, the then President, Pat O'Sullivan of South Africa, informed the Annual Conference:

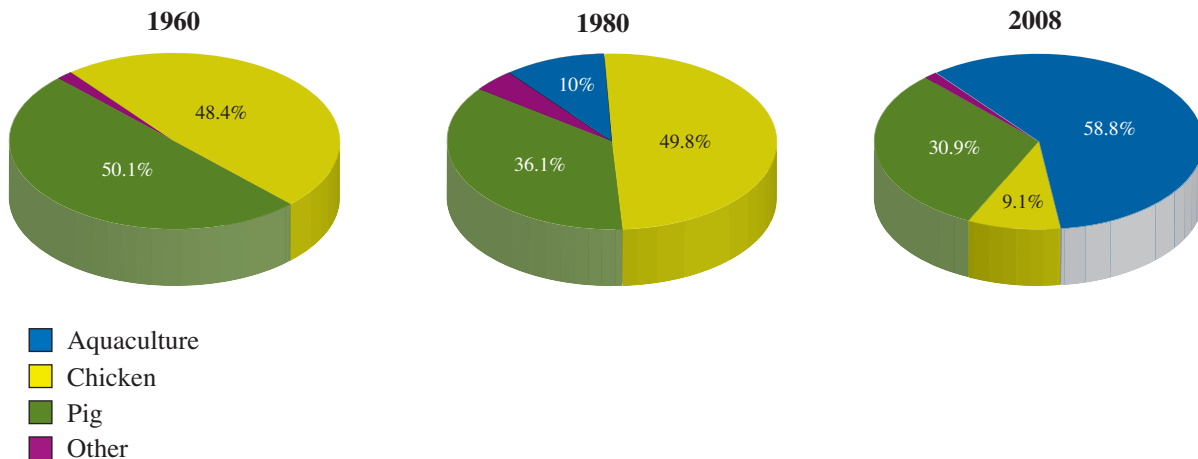
“The high prices which prevailed for fishmeal in the periods of short supply in 1969 and early 1970s encouraged feed manufacturers to investigate the merits of the use of ingredients other than fishmeal as a source of protein for the production of animal and poultry feeds. This in turn created favourable conditions for the extremely active promotional campaigns for a still larger share of the world's protein markets pursued by the Soya Institute of the USA. Considerable success was achieved by the Institute in convincing feed manufacturers and end-users that very favourable, and even equivalent, results could be obtained from soya and other ingredients, together with synthetic amino acids...”

The fishmeal market was favoured two years later when the US Government temporarily prohibited the export of soybeans and soya meal, thus tarnishing the image of this ingredient to many international users.

Fishmeal was always favourably valued against soybean meal and in the first 30 years of IAFMM's life a value twice that of soybean meal on a price basis was considered realistic (see price graph on page 12); however, research into premium animal uses for fishmeal and the increasing demand for aquaculture, as well as fishmeal promotion, have resulted in a value generally around three times that of soybean meal during the last 20 years.

In the meantime, many feed mixers were discussing the potential of protein from mineral oil, championed by British Petroleum (BP). An analysis of the production potential of this product by IAFMM concluded that the production levels were likely to be small because of the costs involved. This proved to be correct.

Changing uses of fishmeal



In 1984, Germany was again identified as a market requiring more focused promotion. In conjunction with the traders based in Germany, Fish Meal Consulting (FMC) was opened in Hamburg under the leadership of Klaus Werner. With the fall of the Berlin wall in 1990, the activities of this office were extended to East Germany the same year.

China is a huge country and the need for a more focused and specific promotion programme in China was recognised. In 2006 a Chinese manager, Mr Wenpu Jin, was recruited, based at the Beijing office of the China Britain Business Council. Nowadays China is by far the largest single market for fishmeal due to demand mainly from aquaculture and pig feeds, hence the vital need for an active IFFO presence. Already IFFO's Chinese presence is showing its worth in terms of detailed market information, membership growth, increased user awareness, contact with government and scientific personnel, as well as conference presentations and the ability to undertake feed trials.

Orderly marketing of fishmeal has regularly been challenged by the El Niño events. Each time such events have produced a shortage of supply, users have been encouraged to use substitutes in order to try to reduce costs and spread the supply risk. Although the consumers have changed over the last 50 years, with aquaculture now dominating, the challenge to the industry of substitution still remains. One of the roles of the IFFO is to convey the benefits of including fishmeal in land animal and fish feeds in the light of current knowledge of nutritional science. At the same time the need to comply with international competition law remains an important governing factor for the IFFO board, staff members, and the membership, especially when sharing market information and at members' meetings.



*Visit to Chinese producer member,
Long Resources Marine Biology Co. Ltd.*

Vital need for an active
presence in China



Developing the market for fish oil

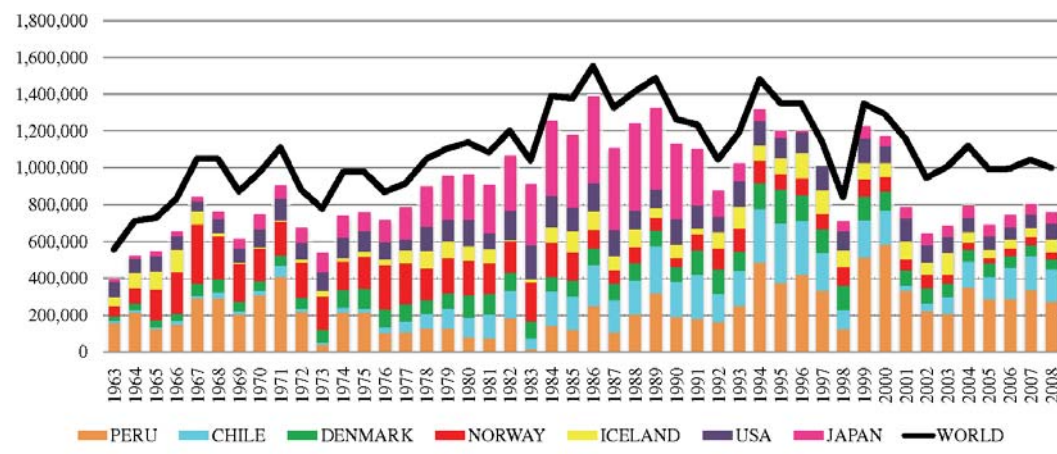
Introduction

When IAFMM began in 1959, it limited its focus to fishmeal. It was not until 1972, during the Presidency of Pat O'Sullivan, that the Association agreed to direct its attention to marine oils, particularly the potential markets of the USA and part of Canada where fish oil was prohibited for use in food products.

For the first 35 years of the Association's life, the main use of fish oil was in the hydrogenated form in margarines and shortenings. Its main competitor was palm oil. Crude fish

oil was deemed to be worth 70 per cent of the palm oil price. With the growth of salmonid farming, the use of fish oil has switched to aquaculture in the crude and refined forms where its main competitor is rapeseed oil. However, fish oil use cannot be entirely replaced by competitor products due to the need to maintain adequate levels of the healthy long chain omega-3s EPA and DHA in the flesh of farmed fish.

Fish oil production 1963 onwards (tonnes)



Researching safety and health benefits

Following the 1972 agreement to study fish oil, most of the detailed discussion on strategy took place in the Scientific Committee, mainly under the chairmanship of Gudmund Sand of Norway. In 1975 the Scientific Committee alerted the Association to a potential health problem (cardio-toxicity) of C22 monoenes in hydrogenated fish oil, which might have adverse effects on the major market for fish oil in Europe. C22 monoenes are a group of fats, which were first found in rapeseed oil in Canada, and already there had been a significant impact on the global sales of these types of rapeseed oil in the world.

Under threat of legislation in Europe limiting the level of C22 monoenes in food products, the Association reviewed the scientific literature and visited scientists actively working in this field. It was able to present a scientific document to the European Commission (EC) supporting the view that the type of C22 monoenes in hydrogenated fish oil was different from those in rapeseed oil and the most recent evidence suggested that the toxicity was only found in rapeseed oil. The Association was heavily guided by its Food Safety Consultant, Ian Duthie of UK.

The EC responded by pointing out that it needed more safety data on hydrogenated fish oil, but while that was being produced, it was prepared to limit its legislation to rapeseed oil provided that there was a robust analytical method which would distinguish C22 monoenes in rapeseed oil from those in fish oil.

The Association acted on both fronts, producing an adequate analytical method under the guidance of Professor Bob Ackman of Canada, and raising the funds to undertake life span toxicity tests in rats at an independent laboratory in the UK with considerable experience in performing safety



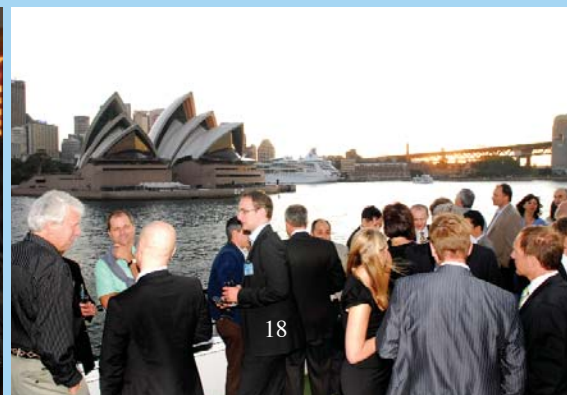
tests on potential drugs. The Scientific Committee under its Working Group on Safety chaired by Johannes Opstvedt of Norway guided the production of the scientific protocol for the safety tests.

In 1976 the EEC legislated solely in terms of erucic acid, the C22 monoene found in rapeseed oil.

A Marine Oil Executive Group (consisting of executives and scientists) was formed in April 1978 under the chairmanship of Chris Vedeler (Norway) to evaluate the political dimensions of the C22 monoenes developments, particularly the growing international interest by FAO and the subsequent consideration by the WHO/FAO Codex Committee on Oils and Fats.



Annual Conference and Members' Meetings



- Shanghai, Barcelona, Sydney and Miami



*IFFO President Federico Silva honours three long-serving members:
Jon Magnusson (above) Carlos de Bracamonte (below) and Ivan Orlic (right)*



In 1979 the three year long lifespan test on hydrogenated fish oil with hydrogenated soybean oil and rapeseed oil (two controls) commenced at a cost to IAFMM of US\$500,000. This was successfully completed in 1982 clearly demonstrating the safety of hydrogenated fish oil. The results were widely publicised including at a two-day symposium jointly organised by the Association and the UK Society of Chemical Industry in late 1982 and in the prestigious scientific journal *Acta Medica Scandinavica*.

In 1972 a Menhaden Oil task force was formed in the USA, whose goal was to achieve official food status for menhaden oil. In view of the encouraging results from the life-span trials in the UK, the US government, on the suggestion of the US industry, undertook further safety trials on hydrogenated and refined menhaden

oil, including a rat multi-generation breeding study, a rat life-span study, and dog studies. These studies were designed in consultation with the Association. All these studies confirmed the safety of hydrogenated fish oil and demonstrated the safety of refined menhaden oil.

Six of the scientists leading the petition for 'Generally Recognised as Safe' (GRAS) approval were formally recognised by the US Department of Commerce in that same year for *“their outstanding contribution in the development*

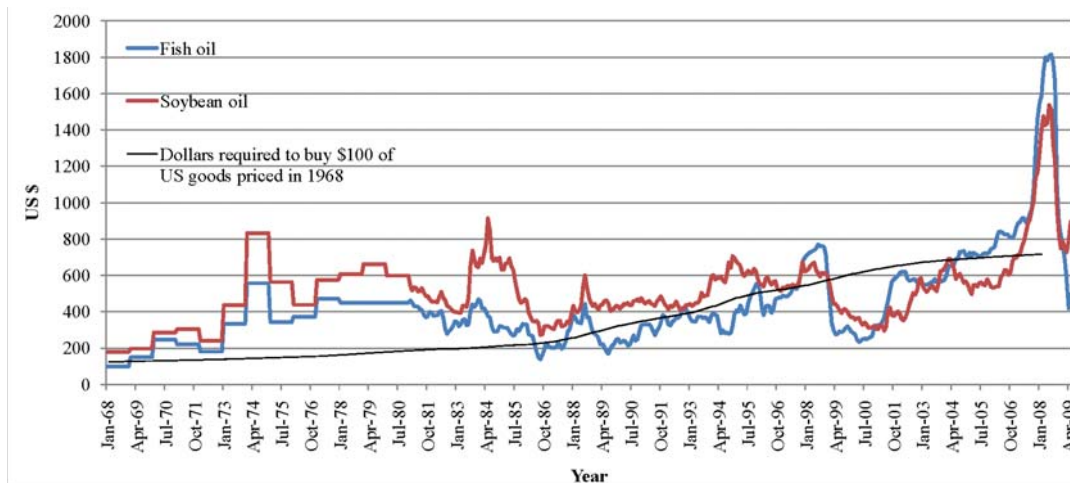
of the petition to FDA affirming GRAS status for menhaden oil...over a nine year period”.

These scientists were Tom Billy (USA), Tony Bimbo (USA),

Paul Bauersfeld (USA), Roy Martin (USA), Ian Duthie (UK) and Stuart Barlow (IAFMM).

Demonstrating the safety of hydrogenated fish oil

The price of fish oil 1968 to 2009 (US dollars)



In 1989 hydrogenated menhaden oil was affirmed as 'Generally Recognised as Safe' (GRAS) by the US Food and Drug Administration (FDA). In 1997 the USFDA confirmed refined menhaden oil as GRAS.

1986 saw the First International Conference on Health Effects of Omega-3 held in Washington DC and jointly organised and sponsored by the Association. This followed two earlier conferences, one in London in 1982 and the second in Reading UK in 1984, sponsored by the Association, recognising the importance of omega-3 fats as essential fats in our diet, the absence of which seemed to result in a variety of diseases.

Prior to the 1980s only a handful of scientists had thought that omega-3 fats were essential to humans. The vast majority of scientists and medical doctors only considered omega-6 fats to be essential - a view backed and supported by the corn, soybean and edible fats industries which had invested heavily in producing highly polyunsaturated spreads and oils for the health-conscious consumer.

The unique cardio-protective effects of long-chain omega-3s were not readily accepted by nutritionists and industries that had spent many years developing and promoting omega-6 rich foods. Considerable disputes arose at the first Washington DC conference. However in spite of the anti-omega-3 lobby, science and medical research continued, further endorsing and enlarging the unique health properties of long chain omega-3 fats, now including:

- Cardio-protective properties
- Anti-inflammatory properties
- Brain development and learning ability
- Improving a variety of mental disorders
- Obesity

In 1990 when the Second International Conference on Health Effects of Omega-3 Polyunsaturated Fatty Acids in Seafoods was held in Washington DC, the mood had changed and there was general, although not universal, acceptance of the unique health properties of fish oil.

Since that time the research work has continued on an exponential upward curve and now it is not uncommon to see pro-seafood health statements in the popular press internationally. "From small acorns, mighty oak trees grow". It is pleasing to be able to say that the Association played a crucial role in this development.

In 1991 the Association commenced pilot plant production of a variety of food products containing refined fish oil, to demonstrate to interested food companies that it could be done without the fear of rancidity and unacceptable shelf-life. Since that time there has been a growing, albeit still small, use of refined fish oil in health food products.

In 1997 the US Food and Drug Administration approved the use of refined menhaden oil in food products. In recent years the global market for encapsulated fish oil has continued to grow at around 10 per cent a year as the health benefits of a regular intake of fish oil are recognised. About 10 per cent of the global production of fish oil is now going for direct human consumption and all the indications are that this market will continue to grow.

Acceptance of the unique health properties of fish oil



Aquaculture use

However, the major user of crude fish oil is the aquaculture industry, principally salmonids. Initially the oil was used as a substitute for the more expensive fishmeal protein in the fish diet. However as time progressed, the resultant high omega-3 levels in the farmed salmon flesh became a marketing advantage. The rise in public awareness of the health properties of long-chain omega-3s has increased the value of that advantage. As salmonid production has grown, it has become necessary to conserve the use of the limited fish oil available without compromising the omega-3 levels in the salmon flesh. This has been done by substituting the fish oil with cheaper vegetable oils in the feed for the young and growing salmon, but maintaining the fish oil level in the finishing feeds, in order to ensure that the long-chain omega-3 content in the resulting salmon flesh remains high.

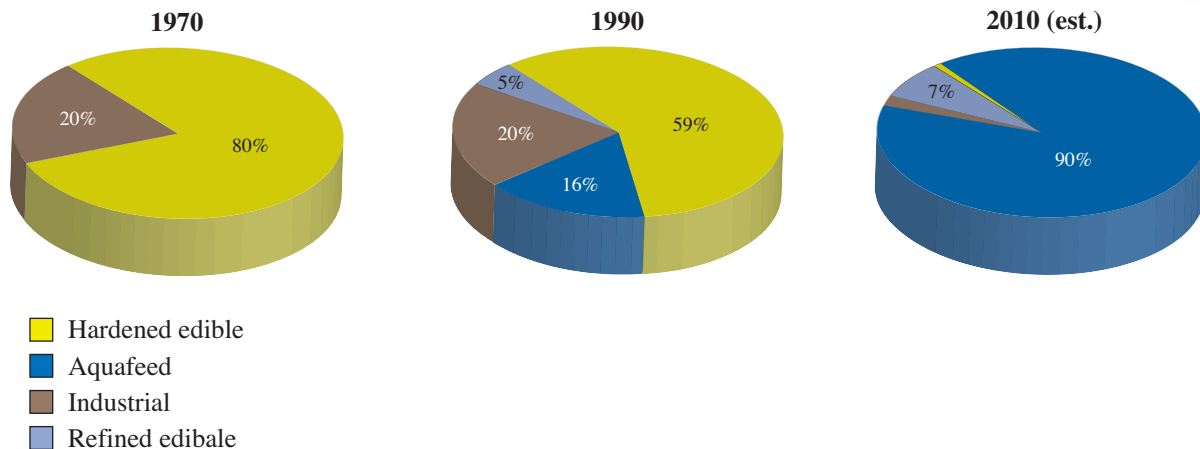
The growth of salmonid production occurred at a time when the edible fat industry became concerned about the presence of trans-fats in hydrogenated fat, due to a perceived effect similar to that of saturated fat in heart disease. Thus the use

of hydrogenated fat was severely reduced in the USA and Europe starting in 1996, which fortunately coincided with the rapid growth in salmonid production, providing another outlet for fish oil. Despite increasing use of rapeseed (canola) oil as a partial substitute for fish oil in farmed salmon diets, the aquaculture feed market today takes more than 80 per cent of global fish oil production.



Chinese fish farm

Changing uses of fish oil



Research programmes

When IAFMM began in 1959, it limited its focus to fishmeal. It was not until 1972, during the Presidency of Pat O'Sullivan, that the Association agreed to direct its attention to marine oils, particularly the potential markets of the USA and part of Canada where fish oil was prohibited for use in food products.

For the first 35 years of the Association's life, the main use of fish oil was in the hydrogenated form in margarines and shortenings. Its main competitor was palm oil. Crude fish oil was deemed to be worth 70 percent of the palm oil price. With the growth of salmonid farming, the use of fish oil has switched to aquaculture in the crude and refined forms where its main competitor is rapeseed oil. However, fish oil use cannot be entirely replaced by competitor products due to the need to maintain adequate levels of the healthy long chain omega-3s EPA and DHA in the flesh of farmed fish.



Five members of the Scientific Committee. From the left: Derick Burton, Carl Arnesen, Professor Guido Dreosti, Stuart Barlow and Ian Pike

At its foundation, the Association identified two areas of technical work, namely the quality of fishmeal and standardisation of analytical methods to measure that quality. In 1967 the Scientific Committee proposed the formation of two Working Groups. One to examine the need to standardise methods of analysis under the chairmanship of Alfredo Bellido of Peru, and the other to evaluate the pepsin digestibility test as a means of assessing the quality of fishmeal under the chairmanship of June Olley, later to become Professor June Olley and winner of the 2005 Australian Marine Sciences Association Silver Jubilee Award.

It was not until the late 1990s that the pepsin test found wide use in distinguishing between high grade low-temperature fishmeal and standard fishmeal. The Association produced a Research Report on a ring test to standardise this method.

The Association's research work on fishmeal and fish oil began in earnest in the 1980s. In that decade the Association produced 16 Research Reports including

- Fish oil quality for hydrogenation
- Development of foods containing refined fish oil
- Safety assessment of hydrogenated fish oil
- Antioxidant treatment and stability of fishmeal
- Biogenic amines as a measure of raw material freshness
- Low temperature (LT) meals and their quality assessment
- Use of fishmeal in early weaned pig diets
- Gizzard erosion in broilers



In the 1990s the research work output of IAFMM, then IFOMA, exploded with the publication of 69 Research Reports, building on many of the themes noted above and adding new dimensions, namely

- Effects of raw material freshness and processing temperature on fishmeal quality
- Measurement of dioxins, furans, PAHs and hydrocarbons in fish oil, fishmeal and fish feed
- Salmonella and treatment programmes
- Vitamins in fishmeal
- Fish oil and trans fatty acids
- Fishmeal in ruminants
- Fish oil and disease resistance in animals
- Fishmeal quality in shrimp feeds
- Fishmeal in finishing pig diets to reduce waste and pollution
- Fishmeal quality in salmon feed
- Fishmeal quality in carp diets



Scientific Committee in 2001

In 1993 the research capabilities of the Association were recognised by the award of an EU finance grant to study the use of fishmeal in shrimp feed. This was followed in the late 1990s by a further EU grant to study the passage of dioxin from feed to farmed fish flesh and the means of reducing this transit. The Association is a holder of a patent on carbon filtration to reduce dioxins in fish oils.

In early 2000, the Association embarked upon a study to detect land-animal tissue in feeds in the presence of fishmeal as a means to encourage the EU to approve such a method, which might have allowed the continued use of fishmeal in ruminant diets and fishmeal use in mills producing feed for a wide variety of animals, including ruminants. However, European politics has so far prevented this study from being implemented as a practical screening technique.

The analysis of the protein level in fishmeal has traditionally been conducted using the determination of nitrogen using the Kjeldahl method. However, the original use of a mercury catalyst has had to be changed for safety reasons and none of the alternatives seem to give as reliable results. IFFO therefore undertook some research with Dr Eric Miller of Cambridge University to examine the most reliable method for protein analysis. This resulted in a paper in 2006 demonstrating that the most reliable and repeatable method was the Dumas method, which was also a lot faster and cheaper. This method is now increasingly being accepted as the preferred method for protein determination in fishmeal.

Research output
exploded in the 1990s

Defending the industry's reputation

Introduction

After many years of successful international promotion, and with the growing demand from aquaculture, the Association under the Presidency of Fin Andersen (Denmark) considered that its manpower resources should be redirected to counter a growing media campaign in Europe, starting in 1996, questioning the sustainability and wisdom of using wild fish as a feed for animals. More recently and due in part to the many examples of overfishing and inadequate government oversight in regard to conventional food fisheries, 'industrial' or 'feed' fisheries have sometimes been labelled as being poorly managed as well. An increasing priority for IFFO is to defend the reputation of the industry in the face of this criticism and to counter the incorrect statements put out regarding the sustainability of fishmeal and fish oil production and usage.

Sustainable fish resources

When IAFMM was founded in 1959 and Iceland joined in 1960, the 'Cod Wars' between Iceland and some of its North European neighbours had already begun as a result of Iceland extending its exclusive fish jurisdiction beyond the hitherto accepted three mile limit. Understandably the founding President and Vice-Presidents thought it wise to define the activities of the Association from the point when the fish were landed in the processing factory and that it should not concern itself with the biology of fish resources. This was in spite of the fact that the availability of fish resources has a profound effect on the marketplace for fishmeal and fish oil.



Indeed the most important reason for the formation of IAFMM and FEO in 1959 was the sudden and unexpected growth of sardine catches in Peru causing prices of fishmeal to drop to “dangerous levels” threatening the future viability of some of the traditional producers. Conversely the occurrence of strong El Niño events off the Pacific coast of South America in 1973, 1983 and 1998, with some minor events in the intervening years, caused surges in prices presenting marketing difficulties when production returned to normal.

In 1960 FAO together with the Peruvian Government realised the importance of understanding the effect of the environment on the fish resource and established an oceanographic research institute in Lima. In 1972 the Assistant Director General of FAO, Mr F. E. Popper, addressed the Association's Annual Conference and stated,



“For a long time now we [FAO] have been aware that major difficulties in the industry in the long run are likely to be the result of too little fish rather than too much fish.”

Some time later in 1981, Carl Arnesen of Norway, then President of IAFMM, warned that fishing was becoming too efficient and unless controlled could destroy our fish resources. However it wasn't until 1996 that IFOMA responded to media interest and issued its first public statement on the sustainability of stocks used by the industry by means of its Resource Review. In 1997 IFOMA formed a Committee on Fisheries and the Environment under the chairmanship of Snorre Tilseth of Norway. The objective of the Committee was to exchange information between members on the fishery management controls in place in member countries and to assist the secretariat to keep the public informed on sustainability issues.

Now with some of the world's fisheries suffering from over-fishing it is a crucial part of IFFO's work to demonstrate that feed fisheries are generally effectively managed. Although the European Common Fisheries Policy has produced poor results in maintaining at healthy levels stocks of fish for human consumption, fortunately it has been more successful with feed fishery stocks. Nevertheless many commentators doubt that fisheries management in other areas is proving successful. IFFO has therefore been collecting and disseminating the data showing that fisheries such as Peruvian anchovy and Gulf menhaden are indeed well managed fisheries.



Demonstrating that feed fisheries
are effectively managed

Eco-efficiency of feed fishing for fishmeal and fish oil

A persistent criticism of the fishmeal and oil industry has been the 'waste' of valuable human food by feeding it to animals. The Association first addressed this criticism in 1969 in a paper to an FAO conference in Tokyo when it compared the efficiency of conversion of fish protein to edible food via various routes including guano production, poultry feed, and preparing edible fillets from small, bony pelagic fish. At that time, it was not necessary to defend the fish oil against the 'waste' accusation, because the large majority was already going into edible food in the form of hydrogenated fish oil in margarines and baking fats. Carl Arnesen of Norway eloquently dismissed the 'waste' criticism on the basis of hypocrisy.

"Nobody is blaming the farmers for using their soil to produce grain, soya, corn etc for feeding animals instead of mankind. We are harvesting the sea in the same way that the farmers are harvesting their soil. The fish used for reduction has no other alternative uses. If it is not caught it will sooner or later die and become fertiliser in the sea...."
Annual Conference 1977, Oslo.

In spite of these verbal defences, together with earlier research and development work producing fish protein concentrate - a human food additive which was found to have no significant market because it was essentially tasteless and lacking texture - the criticisms of 'waste' continued.

In 1982, IAFMM established a Committee for the Manufacture of Food from Industrial Fish Species (MOFFIFS) under the able chairmanship of Tom Billy of the USA. Under his direction the US government initiated extensive R&D work to develop fish protein products from menhaden fish based on a surimi-type process, thus maintaining the functional properties of fish protein. The work was conducted in close co-operation with the US and international industries. After some years of process



development under the leadership of Tony Bimbo of the USA and trial marketing of the products, it was concluded that the costs of production outweighed the market valuation of the products. Although development work stopped - as did the activities of the MOFFIFS committee - it is noteworthy that this helped pave the way for subsequent progress on utilising jack mackerel directly for surimi instead of for making fishmeal.



From the mid-1980s, salmon and trout became increasing consumers of fishmeal and fish oil. Thus by the mid-1990s when Unilever and other European producers of margarine decided to cease using hydrogenated fish oil, because of the concern about the health properties of trans fats found in all hydrogenated oils, the growing market for fish oil in aquaculture was a timely development.

However the environmental Non Governmental Organisations (NGOs) again criticised fishmeal and oil producers as 'wasting' natural resources by feeding the products to fish rather than making them available to humans directly as edible food. They claimed that it took five tonnes of wild fish (via fishmeal and oil) to produce one tonne of farmed salmon. However, at the Seafood Summit in 2009, Andrew Jackson of IFFO demolished these claims showing how the 'Fish-in to Fish-out' ratio for farmed salmon is approximately 1.7:1 and for all fed aquaculture is approximately 0.5:1 (and falling) which demonstrates how efficient it is to use fish for which there is little effective human consumption demand to grow higher value seafood for human consumption.

Irrespective of the details of the calculation, the industry is always aware of the commercial reality of finding markets capable of paying higher prices for this valuable raw material. Consequently a number of the species traditionally used to make fishmeal and oil are now increasingly being processed for human consumption. Species such as jack mackerel, capelin, and blue whiting are examples of this, adding to the list of species that underwent this change some years ago including herring, pilchard and sardine. Also the Peruvian Government is now encouraging fishing companies



to process anchovy for human consumption in the local market and for export. However there will remain, for the foreseeable future - whether for reasons of flavour, visual appearance, shelf-life or quantities being caught in excess of human consumption market requirements, some species which are best utilised for mankind through indirect production of food via fishmeal and fish oil manufacture.

'Fish-in to Fish-out' ratio for all fed aquaculture is 0.5:1

Lobby activities

Traditionally trade organisations are, of course, known for their lobbying activities. With the Association, such activities did not begin until 12 years after its foundation. They were triggered by an international threat from the EEC - requiring an international response beyond the capabilities of individual members, although actively supported by those European members. The threat was the proposed EEC legislation on animal feeding requiring the definition of ingredients, quality specifications and maximum permitted levels of certain minerals. The original proposal, if it had been adopted, would have resulted in the loss of the main world market for fishmeal. The timely intervention by the Association, together with European feed mixing companies, supported by data generated by the IAFMM Scientific Committee, prevented this catastrophe occurring.

At about the same time, the International Maritime Organisation (IMO) based in London considered restricting the carriage of fishmeal on the high seas because of some past experiences of spontaneous combustion at sea. Peru headed up the response under the technical leadership of Alfredo Bellido Delgado, supported by the Scientific Committee of the Association, which provided additional evidence under its chairman, Guido Dreosti, who had done much research on safe carriage of fishmeals, including testing various antioxidants at different levels. The outcome was the entry of fishmeal in the IMO Code, representing the best practice for shipping meals under a variety of circumstances. This Code has remained as the basis for safe practice for the past 40 years.



The European Union and its predecessors have been the focus of most of the Association's lobbying over the past 50 years, initially because it was a very significant market, and more recently because of the strong influence EU legislation has had over other countries when adopting similar legislation. Subjects on which IFFO and its predecessor organisations have lobbied include:

- Salmonella control
- Safety of hydrogenated fish oil (see section on fish oil)
- Undesirable substances in animal feed and human food
- Traceability and Good Manufacturing Practice
- Bovine Spongiform Encephalopathy (BSE) and ruminant feed
- Safety of crude fish oil
- Sustainability of feed fisheries outside Europe

This has sometimes been a frustrating experience. For example, following the BSE crisis, IFFO had spent time and effort helping to improve methods to detect land-animal tissue in feeds in the presence of fishmeal, in order to

encourage the EU to permit continued use of fishmeal in both ruminant diets and in multi-species mills. Ostensibly in place for reasons of food safety, the continued fishmeal ban looked rather ridiculous once the European Food Safety Agency (EFSA) had declared fishmeal safe. However, political considerations have so far stood in the way of this research work being adopted as a screening technique and of the ban itself being lifted in multi-species mills within the EU.

The FAO Committee on Fisheries has played an important role in many of these issues, providing a forum for international discussion of issues affecting world trade, and preparation of useful background papers. The Association has enjoyed close co-operation with FAO since the future of the fishmeal industry conference in 1961 until the present, as an organisation with Specialised Consultative Status.

Influence on government and intergovernmental bodies



Information services

Information has taken many forms during the 50 years of the Association. The oldest and still the most treasured is personal word of mouth, whether through telephone conversations, and now via emails, based on friendships established at meetings and encouraged by the considerable fall in communication costs compared with the early days of the 1960s.

Relevant written information is also important but, in a busy world, it needs to be to the point. In the early days of 1959, the Association issued its first *News Summary*, which continued to 1994. Due to more specific needs, IAFMM issued its first *Digest of Statistics* in 1968, which was continued annually. FEO issued more frequent statistics to its members mainly based on fishmeal production and sales. Later both organisations issued statistics on fish oil.

Again encouraged by the need for more specific information, the Association issued *Technical Market Reports* based on a summary of the outcome of the Association's scientific staff visits to users in some of the main markets for fishmeal. *Research Reports* were issued to members based on the latest results from the Association's ongoing research programme. *Technical Bulletins* and *Fishmeal Flyers* were issued to fishmeal users in various languages, and *Fish Oil Bulletins* were issued to members as a means of providing information of use to sellers when discussing market opportunities with the buyers.

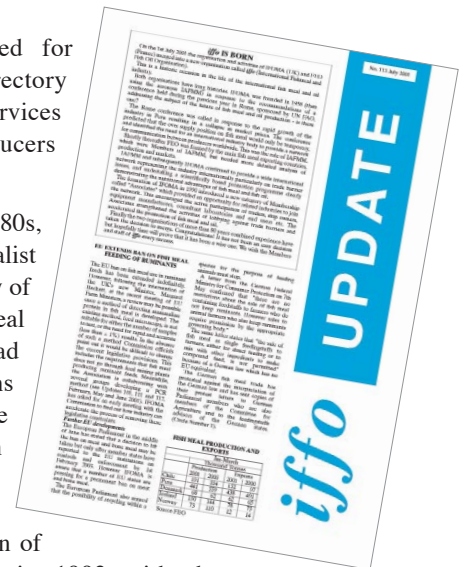
In 1985 under the Presidency of Viggo Mathiasen of Denmark, more emphasis was put on the exchange of information on fishmeal processing. A series of *Processing*

Bulletins was produced for members and a Directory of Equipment and Services available to the Producers was first published.

By the end of the 1980s, the production of specialist information for a variety of interests in the fishmeal and oil industry had reached such proportions that many members were suffering information overload. A successful attempt to overcome this was the introduction of the IAFMM's *Update* in 1992 with the objective of summarising the main events on a monthly basis, with the use of circle numbers for those requiring more information.

In the mid 1990s, media interest in the sustainability of the industry cried out for a scientific publication demonstrating the management in place to ensure the future viability of fish resources. Accordingly the Association issued its first *Resource Review* in 1996.

The late 1990s also enabled IFOMA to issue some of its information by electronic mail. This proved to be simpler, cheaper and quicker with the advantage of being topical. The danger of such electronic mail is that information overload is



even easier. This has partly been addressed by setting up the Association's website whereby members and interested observers can find information relevant to their own requirements. The use of passwords also enables members to have privileged access to information denied to the casual browser.

However, even with the power of the internet, the supply of relevant and timely information remains a challenge. Today IFFO circulates *Weekly Reports* and *Monthly Updates*

as pdf documents in English and Spanish, issues frequent *Datasheets* and *Flash Bulletins* and publishes the *Statistical Yearbook*. In addition the spring members' meetings and Annual Conferences, with contributions from external speakers, provide valued networking opportunities and provide a forum for the exchange of market and technical information.



IAFMM, IFOMA and IFFO conference venues 1960 to 2009



• Paris	1960	France	• New Orleans	1978	USA	• Santiago	1995	Chile
• Lisbon	1961	Portugal	• Venice Lido	1979	Italy	• Cape Town	1996	South Africa
• London	1962	U.K.	• Athens	1980	Greece	• Rome	1997	Italy
• Lima	1963	Peru	• Vina del Mar	1981	Chile	• Puerto Rico	1998	USA
• Vienna	1964	Austria	• Cannes	1982	France	• Hong Kong	1999	China
• Cannes	1966	France	• Boca Raton	1983	USA	• Lima	2000	Peru
• Bergen	1967	Norway	• Budapest	1984	Hungary	• Athens	2001	Greece
• Bremen	1968	Germany	• Munchen	1985	Germany	• Cancun	2002	Mexico
• Cannes	1969	France	• Lisbon	1986	Portugal	• New Orleans	2003	USA
• Cannes	1970	France	• Dubrovnik	1987	Yugoslavia	• Buenos Aires	2004	Argentina
• Estoril	1971	Portugal	• Lima	1988	Peru	• Shanghai	2005	China
• Rome	1972	Italy	• Hong Kong	1989	China	• Barcelona	2006	Spain
• Venice Lido	1973	Italy	• Reyjkavik	1990	Iceland	• Sydney	2007	Australia
• Lima	1974	Peru	• Berlin	1991	Germany	• San Diego	2008	USA
• Copenhagen	1975	Denmark	• Cancun	1992	Mexico	• Vienna	2009	Austria
• Cape Town	1976	South Africa	• New Orleans	1993	USA			
• Oslo	1977	Norway	• Copenhagen	1994	Denmark			



Looking ahead - a challenging future

After 50 years, what does the future hold for IFFO? It's clear that the fishmeal and fish oil industry has had to adapt and change in order to survive and grow. This has meant being open to new opportunities as well as being ready to defend itself against attacks. Sometimes fish oil has been considered a by-product of fishmeal manufacture and then at other times fishmeal has been considered a by-product of fish oil manufacture. The growth of aquaculture and recognising the health benefits of fish oil have in turn helped the industry to grow. On the other hand periodic El Niños have reduced supply and increased prices, encouraging end-users to look for substitute products. At the same time the fishmeal and fish oil industry has been attacked by critics claiming it is unsustainable - often with little or no evidence.

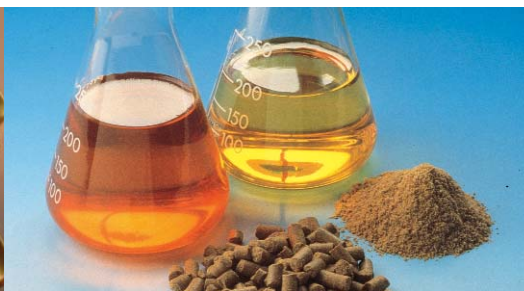
Looking ahead it's clear that the industry will continue to adapt to changing circumstances. Increasingly we have moved from supplying protein and fat as commodities to being a specialist feed ingredient and nutraceutical supplier.

This can mean suppliers forsaking the mature price-sensitive customers in favour of those who rely on the unique benefits

of fishmeal and fish oil. In a wider sense the industry is thus becoming less production-focused and more attuned to market needs. Although IFFO is still governed by producers, the Associate Members, such as traders, brokers, shippers, and feed manufacturers, now play a major role and we see the Organisation as serving the whole value chain.

The increasing focus on value rather than volume explains the trend towards producers attempting to capture more of the added value - an example being fish oils with high concentrations of EPA & DHA. This will continue with the growth of specialist products, such as specific marine peptides. At the same time customers are now becoming more demanding, for example, organic feed suppliers are now demanding fishmeal derived from fish processing trimmings. The IFFO Responsible Supply Standard is a response to the growing need for reassurance on sustainable fishing by the value chain and it's clear that IFFO will need to include whole chain traceability as well as adding new modules on specific concerns.

The fact that China is the number one world producer of farmed fish and pigs explains why it is easily the largest



market for our products and why IFFO now has an active presence there. With their fast-growing consumer wealth, China - and also India - will soon demand human consumer products, such as omega-3 capsules, in addition to the current industrial feed products. Looking further ahead we may face competition from genetically-modified omega-3s and already GM crops, notably soyabeans, are starting to improve yields, which will impact on our markets. The likelihood is that Asia will continue to eclipse Europe as the prime market for our direct customers, even if many of the end-consumers for farmed seafood are based in Europe and North America and rely on imported seafood from Asian farmers.

Reputation Management accounts for the largest part of IFFO's budget today and it is likely to remain a major priority in the future. We will continue to defend the industry against unfair attacks by well-funded environmental NGOs, whether on the grounds of sustainability or on the principle of using wild fish for making feedstuffs for land and aquatic

livestock, by demonstrating responsible practice. We will also publicise the industry's good news by making available the scientific facts on precautionary management of feed fish stocks and their transformation to products promoting health and welfare in both human and livestock nutrition.

Finally IFFO must continue to reflect the industry's changing priorities and where necessary offer strategic leadership on key issues. It is likely that this will mean forging closer relationships with partners further down the value chain, including food processors, retailers and pharmaceutical companies, as well as with specialist organisations, such as other trade associations and even NGOs which share similar aims. In summary we intend to build on the first 50 years by serving our members to meet the challenges of the future.

Forging closer relationships
with value chain partners



IAFMM and IFOMA Presidents

1959-1963	Jim Gardiner
1963-1965	Alex Olney
1966-1968	Don Davidson
1968-1970	Peter Petersen
1970-1973	Pat J.O'Sullivan
1973-1975	Jes Petersen
1975-1977	Carl S. Arnesen
1977-1979	Sigfredo Leo
1979-1981	Carl S. Arnesen
1981-1983	Jon R. Magnusson
1984-1986	Viggo Mathiasen
1987-1989	Halli Gislason
1989-1990	Felipe Zaldivar L.
1991-1994	Vivian Epstein
1995-1996	Fin Anderson
1997-1998	Vivian Epstein
1999-2001	Helge Korsager

FEO Presidents

1970	General Fernando Dianderas
1971-1972	Jorge Camet
1973-1974	Carl S. Arnesen
1975-1976	Alberto Hurtado
1977-1978	EPCHAP
1979-1980	Felipe Zaldivar
1981-1982	Steve Malherbe
1983-1984	Jaime Donoso
1985	Jorge Sarquis
1986	Felipe Zaldivar L.
1987-1989	Juan Rebaza
1990	Manuel Sotomayor
1991-1992	Jorge Sarquis
1993	Salomón Manzur
1994-1995	Steve Malherbe
1996	Carlos De Bracamonte
1997	Jaime Donoso
1998-1999	Javier Reategui
2000	Ricardo Venezian
2001	Eduardo Goycoolea

IFFO Presidents

2nd half of 2001	Helge Korsager & Eduardo Goycoolea
2002-2003	Ivan Orlic
2004-2005	Solveig Samueldottir
2006-2007	Federico Silva
2008-2009	Nils Christian Jensen

IAFMM and IFOMA Directors General

1959-1981 Derick Burton

1981-2001 Stuart Barlow

FEO Secretaries General

1960-1980 Jacques Schwartz

1980-2001 Joseph Bololanik

IFFO Directors General

2001-2004 Stuart Barlow

2004-current Jonathan Shepherd



*IFFO's only lady President,
Solveig Samueldottir (2004-2005),
with Jonathan Shepherd*





International Fishmeal and Fish Oil Organisation

The International Fishmeal and Fish Oil Organisation represents the fishmeal and fish oil industry worldwide. It has almost 200 members in approximately 40 countries. IFFO members account for two-thirds of world production and 80 per cent of fishmeal and fish oil traded internationally.

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IFFO wishes to express its gratitude to those members and friends of the Organisation who have contributed comments and photographs. These are too many to mention, but special thanks are due to Steve Malherbe, Vivian Epstein, Sonia Cruz, Joe Bololanik and Raul Sanchez Sotomayor.

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Published by IFFO 2009





International Fishmeal and Fish Oil Organisation