

The Tuna-Ranching Intelligence Unit ***September 2004***



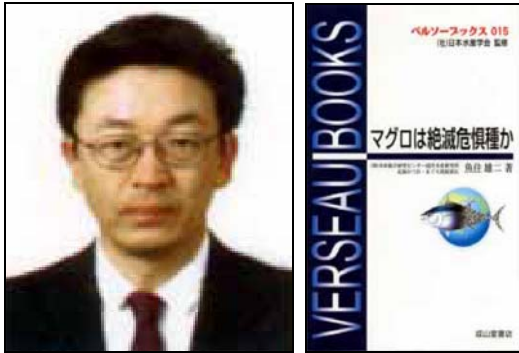
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This report is dedicated to the memory of Henry Ansème, French tuna-fishing captain, who died this year in an airplane collision while spotting tuna schools in the Gulf of Lions. Henri was a personal friend and a strong advocate of sustainable tuna fishing and ranching.

As a matter of courtesy...

Early 2003, a book by Dr. Yuji Uozumi, a scientist at the National Research Institute of Far Seas Fisheries, entitled "Are Tunas Endangered?" was published by Seizando Shoten Publishing Co. in Tokyo, Japan.



Author: Dr. Yuji Uozumi, Director of the Western Pacific Tuna and Skipjack Resources Division, the National Research Institute of Far Seas Fisheries.

The book "deserves the attention of foreign readers", according to its author who claims to be neither an advocate of the fisheries industry nor a green campaigner.

Unfortunately only the Japanese version is available at the moment.

Yet, Dr. Uozumi is keen to point out to whoever wants to listen that "Tunas are not endangered. This obvious fact is debated heatedly at such forums as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). I would like to question the reason for this situation. Why were tunas listed in the Red List as a species threatened with extinction? What is the merit of listing tunas, which are far removed from the risk of extinction? Will it not only confuse the conservationist movement? One of the objectives of this book is to clarify the core of this issue.

Specifically, I address the issue with a central emphasis on the criteria to determine the danger of extinction.

I also point out the errors in the criteria and suggest their improvement in the hope that no species unlikely to be endangered may be listed and the conservation of truly endangered species may not be hampered.

On the other hand, we should not be allowed to indulge in the unlimited use of tunas on the pretext that they are not endangered. Efforts should be made to avoid any situation that can lead to creating serious problems to the sustainable use of tunas. The history of fisheries is a history of overexploitation, and tuna fisheries are no exception. At present the optimum utilization of tunas is faced with diverse problems, and great efforts have been expended for solving them.

This book addresses the issues relating to sustainable use and possible measures to be taken. I would only hope that this book would serve to ensuring that tunas will not be exposed to the risk of extinction in the future, to avoiding excessive exploitation, and to achieving sustainable utilization of the resources."

The question is if Dr. Yuji Uozumi has had the opportunity to tour the Med and see for himself what empirical facts and scientific hard-evidence are telling us all: Bluefin tuna fishing and ranching in the Mediterranean has grown out of proportion.

Such a statement should sound more than obvious to those across the *Mare Nostrum* who love this business and would like to continue making an honest living out of it.

For the past five years, sheer greed and business shortsightedness among all of us; have virtually taken our Bluefin stock to a complete collapse.

Our Japanese customers and some times business partners were only too happy to

pay whatever price for the fish, as long as they could ship it back to Tokyo or Osaka.

Some of the big Sogo Soshas, (Japan's biggest diversified corporations) would even go into multimillion Euro investments, provided we in the Med, would keep on delivering whatever Tsukiji was able to absorb.

The crude reality is that our *Mare Nostrum*, our fish, our know-how and our professional passion for fishing and ranching are nothing else and nothing more than mere financial parameters, indicators or factors in the eyes of those who in Japan dictate fishing and ranching trends throughout the world.

For those of you who know how to read between the lines, and as a matter of courtesy to our Japanese friends, we now reproduce the main aspects of an inspiring lecture by Isao Nakasu, President of the Japan Fisheries Association (JFA) in Tokyo on October 22nd 2003, under the theme "Thinking of Fisheries Industry as Food Supplying Industry."



Isao Nakasu, President of the Japan Fisheries Association (JFA)

Nakasu outlined his views on (1) the supply and demand for food in the world, (2) the supply and demand for food in Japan, and (3) the future outlook of the fisheries industry.

"The world population now exceeds 6 billion, with a prospect to increase to 8.5 billion in 2030.

Essential for human existence is food, and food supports population growth. In other words, the supply of food determines the scale of the population.

The world population doubled during the past 40 years, from 3 billion in 1960 to 6 billion in 2000, and the bulk of the food supply during this period came from agricultural and livestock products. Especially, the supply of meat and dairy products saw a visible increase. Those products are produced by feeding cattle with grass and grains. Grain production in the world stands at 2.1 billion tons, of which Japan produces about 10 million tons. On the other hand, world fishery production is 140 million tons, of which Japanese production accounts for 5-6 million tons. China produces 50 million tons, centring on inland water fisheries.

World grain production, which stood at 90 million tons from 650 million hectares of land in 1960, expanded to 2.1 billion tons from 670 million hectares in 2000. This resulted from improvement in planting and technological development, which boosted grain production per hectare from 1.4 tons to 3.1 tons. Since 1990, the fishery catch has remained level at 95 million tons, with production from aquaculture supporting the population growth.

In any country, as the level of affluence rises, food culture tends to shift from one centred

on starch to one centred on protein (animal-based food), which causes a rapid increase in the production of grains that serve as feed for cattle. In order to consume one kilogram of meat, we have to feed a cow 3 - 4 kilograms of grains. A drastic change is underway in which grains cannot be obtained unless they are imported from other countries.

About 11% of grains produced worldwide move across national borders. About 30% of soybeans are traded internationally, with 18% of wheat and 5.7% of rice. As for fishery products, 37% are internationally traded, with Japan buying the bulk of them. On the other hand, 30% of the gross domestic production (GDP) of Norway comes from fisheries, with the country striving to foster this industry as an export sector.

Two arguments are put forward about the future of the world's food situation. Optimists say that the market mechanism will work, with prices rising as supply decreases. They also point out that food production increases through technological innovations such as genetic modification. Conversely, pessimists view that environmental restraints will increase and global warming will intensify. It is said that a rise of one degree centigrade in temperature would mean a decrease of 500,000 tons in agricultural production.

Japan's food supply and demand

Japan's population in the Heian Period (794-1185) was 6 million with 1 million hectares of arable land. In the Edo Period (1603-1868), the population increased to 12 million with 2 million hectares of arable land, further rising in the Meiji Period (1868-1912) to 34 million with 4 million hectares.

Current arable land stands at 5 million hectares. In the Edo and Meiji Periods, one hectare supported 6-8 persons, meaning that life was very stringent. In 1936, Japan's population exceeded 70 million, prompting the government to give priority to the task of ensuring food. In the post-war years, some millions of Japanese abroad repatriated and mountainous areas were reclaimed. In order to support the present population of Japan of 120 million, 15 million hectares of land would be needed.

After the Second World War, Japan chose the way to support the population by importing food.

Underlying this change were Japan's economic growth and progress in transportation technology. At the same time, higher-level food production in Japan accelerated this trend. Until the Meiji Period, the daily per-capita food consumption had been 350-450 grams, of which rice accounted for about half. At present, rice accounts for one quarter of the per-capita food consumption.

The per-capita rice consumption in 1963 was 315 grams, declining to 170 grams at present. By contrast, the consumption of meat and dairy products rose from 5-10 grams and 6-8 grams, respectively, in the pre-war years to 14 grams and 60 grams in 1960, and to 80 grams and 250 grams at present. The consumption of fish also increased during the same period from 20-30 grams to 90 grams and 100 grams but never played a mainstay role. As a result, Japan's food self-sufficiency rate dropped drastically, with Japan buying a large part of its grains for cattle feed. It can be said that the age of "produce-and-sell" has changed into that of "compete-and-export."

Future outlook of the fisheries industry

In terms of the "supply power" of animal protein, fish can be said to have its strength and superior position vis-à-vis other foods if the resources are used in a sustainable fashion. However, aquaculture could face a

stringent situation like meat. How to supply products meeting consumer needs is crucial. Such products as boneless fish and fish meat sausage not using egg whites seem to be selling well. As a means to boost consumption, the creation of promotional schemes at the stores might be helpful.



It is essential to exert efforts to ensure the safety of food--the top concern among consumers at present. Especially, the issue of mercury and dioxin contamination is crucial and it is important to respond to the concerns of consumers with accurate knowledge and full sincerity. In sum, the greatest task facing us is how we can change the awareness of all those concerned and at the same time strengthen our competitive power from the viewpoint of the fisheries industry as a food supply industry.

I think that, as compared with meat, fish has its strength so that there is no need to be pessimistic about the future of its consumption, and there are quite a number of Japanese people who return to the habit of eating fish. We can open up a bright outlook if we continue our efforts from a viewpoint of how to bring fish to the taste of consumers. What we in the fisheries industry need is the awareness of our mission and the conviction that we can win in the competition."

What Isao Nakasu forgets to mention is that Bluefin tuna over-fishing and over-ranching in the Mediterranean is primarily the direct consequence of a new tuna-market trend in Japan.

According to Harvard University professor Theodore Bestor, the number of wholesalers at the Tsukiji market, the world's biggest with nearly US\$17million in daily sales in 2003, has fallen about 20% since 1990 to around 870 companies.

"Places like Tsukiji are really struggling to find a niche that is not being taken over by large-scale retailers and those niches are becoming harder and harder to find," says Bestor, author of Tsukiji, a book that examines Japan through a study of the market's history, economic structure and internal culture.

Coinciding with the rise of retail giants like Aeon Co Ltd and Ito-Yokado Co Ltd is the

wider availability of sushi, once a meal reserved for only special occasions.



Toshifumi Suzuki, Chairman and CEO
Ito-Yokado Co., Ltd.



Take-away sushi

In order to remain profitable, discount and conveyor belt sushi shops often buy lower grade fish in bulk and ask wholesalers to prepare ready-made cuts of fish to go with machine-made balls of rice. Pre-sliced fish and machine-made balls of rice would have been unthinkable decades ago when sushi chefs could spend up to 20 years learning to prepare the fish and pack the rice into perfect mouthful sizes. But that was before Japan's prolonged economic downturn wiped out extravagant expense budgets that kept most upscale sushi restaurants in business.

"We're being forced to adjust to the changes in our customers' demands," said Shoya Saito, president of Yomosichi, a large wholesaler that buys nearly 20,000 tuna a year. In order to adjust to those changes, Saito's company now prepares sushi toppings like negitoro – mashed fatty tuna with chopped green onions – for large supermarket chains along with traditional large cuts of raw fish.



Sushi-bar in Tokyo

Business from upscale sushi restaurants accounts for less than 10% of Yomosichi's business versus more than 50% nearly 30 years ago. Japan, as in 2003, is flooded with tuna and the oversupply is again depressing prices. Long gone are the days of consistent \$20 a pound prices. Recent prices have ranged from \$2 a pound to \$14.

Tsukiji, nevertheless continues to be largely dominated by "The 7 sisters", the seven largest tuna importers and wholesalers:



Daito Gyorui Co., Ltd
www.daitogyorui.co.jp



Chuogyorui Co., Ltd
www.marunaka-net.co.jp



Tohto Suisan Kabushiki Kaisha
<http://edi.tohsui.co.jp>



Tsukiji Uoichiba Co., Ltd
www.tsukiji-uoichiba.co.jp



Daiichi Suisan Co., Ltd.
www.daiichisuisan.co.jp



Tiyoda Suisan Co., Ltd.
www.marusen.co.jp



Sougou Syokuhin Co., Ltd.

Top of the Sushi-Pops

According to a survey conducted in Japan, the most frequently eaten sushi types are:

1. Maguro (tuna; nigiri),
2. Ikura (salmon eggs; gunkan),
3. Toro (fatty part of tuna; nigiri),
4. Anago (eel; nigiri),
5. Ebi (shrimp; nigiri)
6. Ika (squid; nigiri)
7. Hamachi (yellowtail; nigiri),
8. Sake (salmon; nigiri),
9. Tamagoyaki (fried egg; nigiri)
10. Uni (sea urchin; gunkan)



Ikura Gunkan Negitoro Temaki



Tekka Maki Various Nigri Zushi

The most favourite sushi types are:

1. Toro (nigiri), the fatty, more expensive part of tuna.
2. Uni (sea urchin)
3. Amaebi (raw shrimp; nigiri)
4. Ikura (salmon eggs; gunkan)
5. Maguro/Tuna
6. Anago/Eel

The survey results show minor differences between the genders. Sushi types more popular among women than men are Amaebi (raw shrimp), Ikura (salmon eggs) and Sake (salmon). On the other hand, Toro and Maguro (tuna), Uni (sea urchin) and Anago (eel) are more popular among men than women. Furthermore, many more women responded to dislike certain sushi types than men: Uni, for example, is disliked by as many as 37 percent of the women, while it is unpopular among only 19 percent of men.

Enough is enough

The medium to long-term viability of the Mediterranean Bluefin tuna fishing and ranching industry is condemned to virtual biological and commercial extinction after another "one to much" unsustainable 2004 May-July fishing season.

The entire dependence on wild stocks, the extremely limited experience of tuna juvenile production in captivity and the, by now well known weakness in enforcing international fishing regulations cast huge doubts as to the sustainability of the industry in the Northern Hemisphere.

It is vitally important that all concerned endorse and enforce appropriate

produced outside the framework of resource management. That means some people are operating in violation of the regulations. No accurate stock assessment is possible if such a black box exists. In the worst case, it could be that we are seeing this problem too late and the stock could be irreparably damaged."

Asked about whether production of farmed tuna exerts direct pressures on the tuna resources, Dr. Miyake, who has kept a close eye on the developments in the world's tuna resources has this much to say: "There had been no problem when slim tunas after spawning were farmed on a small scale.

However, as production has increased to the present volume, there won't be sufficient tunas to meet the demand.

Production cannot be continued unless small-size tunas are harvested. Therefore, fishing pressures on small- and medium-size tunas have increased. This creates a serious problem in terms of conservation of the resources. Further, strong concerns have been expressed about the possible impact of tuna farming on the environment, and environmental groups are calling for a total prohibition of tuna farming."

The Issue Isn't Just a Mediterranean one...

U.S. Drs. Barbara Block and Molly Lutcavage have provided unchallenged overwhelming evidence of migrations and mixing of Bluefin tagged in the U.S. to the central Atlantic, northeast Atlantic (e.g. Ireland, Iceland, Norway) and migrations to the Mediterranean Sea (specifically to waters near Sicily and Tunisia).



The total allowable catch of northern Bluefin tuna has been hovering around 30,000 tonnes per annum in the Mediterranean. In 2002, roughly 11,500 tonnes out of the allowable catch was farmed. In 2003, some 25,400 tonnes of live-Bluefin tunas were farmed. According to ATRT, SL estimations, some 25,130 tons of Bluefin are to be farmed this year. The breakdown is as follows:

- **Spain***: 9,000 tonnes
- **Malta**: 4,000 tonnes
- **Italy**: 2,000 tonnes
- **Croatia**: 1,900 tonnes
- **Libya****: 850 tonnes
- **Turkey**: 3,600 tonnes
- **Cyprus*****: 1,300 tonnes
- **Tunisia**: 1,480 tonnes
- **Greece******: 1,000 tonnes
- Total**: 25,130 tonnes

* Includes 2,500 tonnes of transferred live-tuna slaughtered in cages at sea during the fishing season.
 ** All tunas were transferred alive and slaughtered during the fishing season.
 *** Includes tuna farm in TNRC
 **** Unconfirmed data.

Professor Carmelo Agius, a Malta based tuna-farming consultant writes: "Clearly the farming volumes are increasing rapidly with new player countries such as Turkey, Greece and Libya coming onto the scene.



Professor Carmelo Agius

conservation measures to ensure the sustainability of this fledgling industry and above all to preserve this biologically important and exciting species for future generations."

Dr. Miyake has recently expressed his warning against tuna farming, which has been drastically increasing its production during the past few years.



Dr. Makoto Miyake, Former Assistant Executive Secretary of ICCAT

Dr. Peter Makoto Miyake, one of the architects of the present framework of the International Commission for the Conservation of Atlantic Tuna (ICCAT), also expresses his concern about the present situation: "The first problem is that we don't know who caught what amount of those tuna used in farming or where the catches took place. Of course, we know the amount of tuna shipped from farming grounds after they are raised in the cages. But we have little information about what size of tuna was caught and in what amount at the initial stage, as well as how many tuna died in the course of these activities. As a matter of fact, the problem is serious because the actual catch calculated back from the shipment does not match the quotas. In other words, part of farmed tuna is suspected to be



Prof. Barbara Block

Satellite tagging of 800 Atlantic Bluefin has revealed their migratory corridors. "We are recognizing the tunas we see off the coast of the Carolinas in the winter might be at the Flemish Cape off Canada by spring and all the way to the Mediterranean by summer," says Dr. Barbara Block. "And then they'll make the journey back by the end of that year to the western Atlantic." Over a thousand fish have now been tagged with electronic tags at a cost likely in excess of \$US6 million.

The tagging results show that 30% of the U.S. implanted archival-tagged fish cross the management boundary and 24% of these tags have been caught in the Mediterranean Sea. For the first time it has been reported that one tagged fish has visited both known spawning grounds, a strong suggestion of one stock.

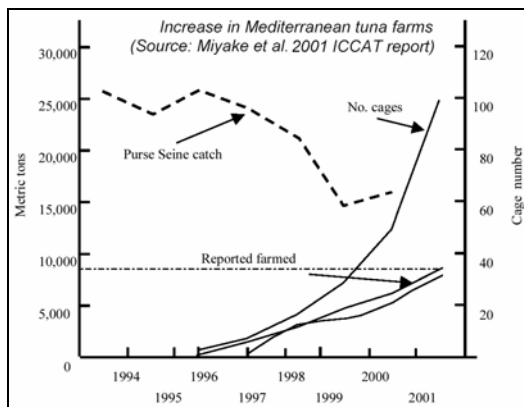
According to Dr. Jean-Marc Fromentin, French IFREMER tuna specialist "the present boundary makes little sense" and does not take into account current fisheries or "homogeneous oceanographic units".

"What is very clear from the scientific evidence is that rebuilding of the western

spawning population is plainly being affected by more than just the fisheries in the west", says Dr. Jean-Marc Fromentin

ICCAT and the EU have nevertheless, failed so far to enforce strict quota policy and legal fishing practices in the Mediterranean.

Calls from FAO, the scientific community and environmental NGOs, to cut down tuna catches by at least 30% have been ignored by the tuna fishing and tuna ranching community around the Mediterranean Sea.



European Union subsidies (\$34 million since 1997) coupled with Japanese and Australian heavy investments in Spain, Turkey, Cyprus, Greece and Croatia, have encouraged greater catches (Some 40% of total catches correspond to illegal catches in Libyan waters) leading to the virtual commercial extinction of the northern Bluefin tuna in the Mediterranean.

On March 8, 2004, a letter was sent by the Chairman of the International Commission for the Conservation of Atlantic Tuna (ICCAT) to Japanese Foreign Minister Yoriko Kawaguchi, requesting Japan to take appropriate measures not to encourage the expansion of Bluefin tuna farming operations in ICCAT non-member countries (Israel, Egypt and other countries).

At the ICCAT meeting held in November 2003, it was noted that such a rapid development of Bluefin tuna farming operations by ICCAT non-members in the Mediterranean Sea was supported by the active cooperation of Japanese importers with local operators, as Japan was a large market for farmed Bluefin tuna for "sashimi" use.

And yet, major catches this year, have taken place inside Libyan territorial waters, around Cyprus and inside the Antalya Gulf -Turkish territorial waters-, where tunas used to find a save-heaven breeding ground.

Unconfirmed reports also state that illegal and unreported tuna fishing has been taking place around Cap Bougarouni (Eastern coast of Algeria)

Catches in the Balearic Island area have also been higher than last year's.

According to reports from the Port of Denia (Spain) over 200,000 kilos of Northern Bluefin from the Mediterranean have been unloaded, since the fishing season started May the 10th. This represents an increase of 30,000 kilos compared to the same period in last year's campaign.

Sources from the Fishery Association of Denia indicate that the vessels unloading at this Spanish port hold Hispano-French licenses. The unit weight of their catch mainly varies between the 30 and 50 kilos.

According to biologist Jose Luis Sanchez, the Northern Bluefin species are being caught before spawning in the Gulf of Lions, the French Mediterranean Coast and between Corsica and Sardinia, which -in his opinion- "once again proves the species is endangered". Given that an adult Northern Bluefin tuna weighs between 100 and 600 kilos and maintained, the indiscriminate capture that this species has endured during the last years has caused an 80% reduction of its population", said Sanchez.

According to sources from the Fishery Association of Denia, captures have continued until mid July and confirmed that all the unloading at the Port of Denia are controlled by the by the Nature Protection Services (SEPRONA) from the Civil Guard. The same type of reports are coming through Palermo, Sicily, one of Europe's tuna landing ports from which chilled Bluefin is distributed throughout the Italian, French, German and British markets.

Not only environmentalist are worried stiff...

Banking institutions in the Murcia Region and Alicante are carefully weighing the pros-and-cons of their future financial involvement in what appears to them as total economic non-sense in an intrinsically volatile and unsustainable fishing and ranching activity.

- 2002 average price for live-tuna at sea was €5,5/kilogram.
- 2003 average price for live-tuna at sea was €7,5/kilogram (Salerno purse-seiners sold their tuna to Korean AJD-Malta partner, Gang Pil Lee, at €9,28/kilogram)

- 2004 average price for live tuna at sea has been €3,75/kilogram though some of the live-tuna caught and transferred by Libyan, Turkish and Tunisian vessels has been sold for less than €2/kilogram.
- Average sale price, both for frozen and fresh tuna in the Japanese market has gone down by as much as 60%.
- Towing & farming production costs have risen some 30% in the past three years.
- Insurances and airfreight costs have also spiralled up ever since September 11th.

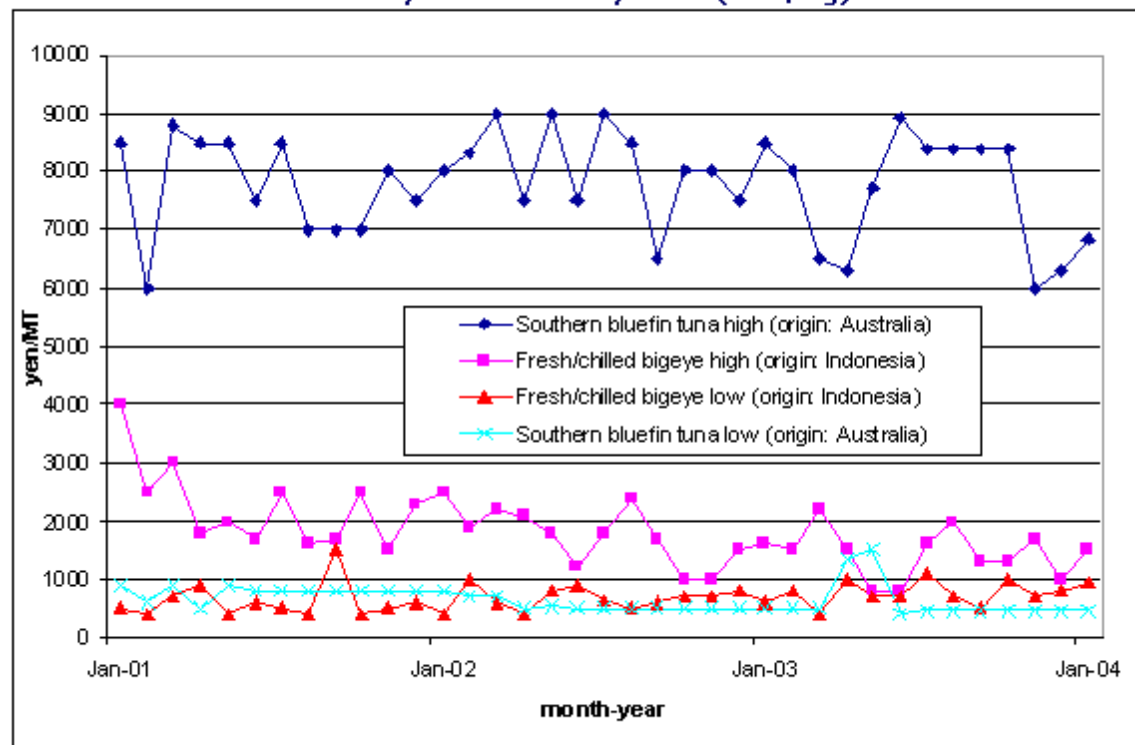


- The Japanese Yen has strengthened against the Euro as much as 28% in the past three years.

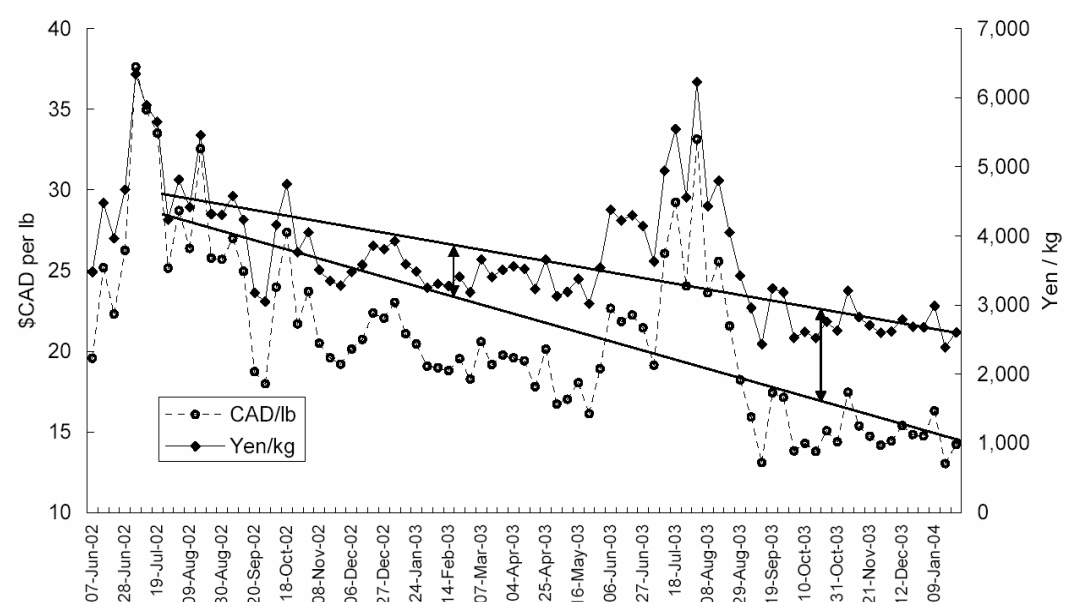
Tuna-ranchers also faced tremendous fish losses during 2003 because of a sheer lack of proper R&D investment and farm management know-how, resulting in poor sea-worthy tuna-farming projects.

- Ricardo Fuentes e Hijos, SA. farm at Castellamare del Golfo, Sicily, lost some 3.000 tunas due to strong NW gales.
- Carthago Bluefin. farm at La-Chebba, Tunisia, lost some 200 tonnes of tunas due to erratic feeding.

Monthly import prices of sashimi-grade tuna, in Japan, January 2001-January 2004 (Yen/Kg)



Source: INFOFISH Trade News



Recent trend in wholesale bluefin tuna prices in Japan (Source: Tokyo wholesale market)

- Tuna Farm Grossa at San Pedro del Pinatar, Spain, lost some 350 tonnes of tunas due to anoxic up-welling phenomena.
- Tuna Farms of Tunisia at Hergla, Gulf of Hammamet, lost some 50 tonnes of tuna due to poorly unfrozen bait.
- AJD at Comino Channel, Malta, lost most of its production, due to weather conditions.
- Tuna Farms of Libya had to sell its livestock to Croatian farmers because of high mortality due to total inadequacy of their Garabouli farm site.

Things don't look better this year...

The tuna fishing season in the Gulf of Lyons started with the collision of two tuna-spotting Cessna 337 over waters some 37 miles away from Perpignan, France. (French F-GFZH belonging to the Sète-based Scannapieco fishing group and EC-HEQ belonging to the Sète-based fishing group) TMM Oaxaca German vessel collided, July 2004, with a fish farm being towed by a tugboat owned by a Malta based tuna farm. Leling Uwe, captain of the vessel, was granted bail after being charged with damaging tuna cages to the detriment of Melita Tuna Ltd through imprudence, carelessness or non-observance of regulations.

Tunisian "Assabah" weekly reported the loss of 15 Sfax tuna fishermen, off the Libyan coast of Zouara, at the beginning of this year tuna fishing season.

Italian ANSA news agency reported the loss of a fisherman and two more injured on board Italian-flag purse-seiner "Atlante", 20 miles south of the Island of Lampedusa. The "Atlante" belongs to Giuseppe Testa from Catania who also owns "Il Tenace".

A red tide appeared July the 21st on the coasts of Ensenada, in the State of Baja California, killing close to 10 tons of Bluefin tuna, which were being fattened in an aquaculture farm.

After this episode, some cages were transported out to open sea to avoid further deaths. According to fishery authorities, the microorganism, which produces red tide, is plankton and is not toxic to human life. However, because of their double flagellate characteristics and their microscopic size they are fatal to fish, as they introduce themselves into fish bronchioles, obstructing air flow and provoking death by asphyxia.

As a defence mechanism, in general, fish living in the area around the coast withdraw to the open sea, something that fish being fattened in cages are unable to do. The fattening of Bluefin tuna in marine cages off the Baja California coast is currently one of the most viable alternatives being developed in Mexican aquaculture.

Malta, March 15th the owner and captain of a tuna boat that trawls the Maltese waters for Bluefin tuna filed a judicial protest against AJD Tuna (Azzopardi Fisheries), the owners of a Bluefin tuna farm, who they are holding responsible for sea pollution after they found hundreds of dead tuna in their nets. In the protest, Martin Cachia and Charles Grech said that on orders of the authorities, they were made to throw away any fish caught among the dead ones. They are holding AJD Tuna responsible for these losses of business and money, as well as for pollution of the waters in which they trawl for tuna.

Current reports stating total catches for farms in the Mediterranean being 60% down or as low as 12,000 tonnes are nothing but a clear indication that tuna ranchers such as

Charlie Azzopardi (AJD Malta) or Leith Whittaker (Kali Tuna Croatia) are worried that their saturated Japanese clients and often "partners" may again lower down prices for frozen tuna as early as the end of August, once all of the tugged-cages are back to the farms.

Should this be the most probable scenario, most of non-vertically integrated tuna-ranching businesses in Spain, Malta and Sicily, will fail to match their financial obligations by the end of December 2004.

It is widely acknowledged that Japanese major tuna buyers had a stock of over 8.000 tonnes of frozen Bluefin before the 2003 fishing season started. Over fishing and over farming in 2003 has led the Japanese Sogo Soshas to control a stock of some 14.500 tonnes before this year fishing season even started. The reader may easily conclude that, with this years total catch exceeding by far a critical mass of 14.000 tonnes of tuna, the Japanese market is over-saturated.

The entire Mediterranean tuna-ranching community is anxiously awaiting to back-to-back endorse tuna-penning insurance contracts to their Japanese frozen-tuna buyers. This will be the time when most influential Sogo Soshas will decide what the starting price for frozen tuna ex-farm will look like...

But as if this wasn't enough, Spain, Malta and Sicily tuna ranchers will have to face not only stiff competition from their Turkish and Tunisian competitors in terms of fish fattening, production and labour costs, they will also have to compete with other emerging tuna-ranching nations such as Malaysia, Oman, New Caledonia and Mexico.

After a decade of the tuna farming industry starting up in Mexico, the fattening potential of the Bluefin species has increased substantially in the Ensenada area.

Bluefin tuna farming was introduced in Mexico in 1994 through the company Nair.

Mexico's burgeoning tuna farm business, which is housed mostly along the Baja Coast, helped increase the country's Bluefin imports by 487% last year. Shipments reached 840 tonnes, up from 143 tonnes in 2002. The value increased to \$8.9 million, up from \$1.6 million.

its fresh Bluefin exports from 11mt to 31mt while Turkey saw a big jump - from 3mt to 46mt. Spain and Canada, on the other hand, actually scaled back exports in 2003.



Partial view of Felipe Charat's tuna ranch, Ensenada Bay, Mexico.

As a whole, fresh and frozen Bluefin imports climbed from 1,339mt to 1,767mt last year, while their value grew from \$12.9 million to \$20.1 million. Price per kilo during 2003 averaged \$11.42, up from \$9.64 in 2002.

There are eight leases for tuna ranches near Baja's Ensenada area, five of which are being used. Maricultura del Norte, one of the largest farms in the area, recently had its biggest harvest ever - of around 1,000mt. The company has 16 pens and the majority of its product is sold to one buyer.

One of the positive effects for this industry is the resurgence of sardine catches in that Mexican region, as this is the main food of tuna.

According to a long article on the Website Ensenada.net, besides buying sardines tuna farms hire fishermen and divers to feed the tuna and when they reach the right size remove and kill the tuna and then sell them.



Other countries' fresh tuna import increases were relatively moderate in comparison. Australia, for instance, boosted exports from 15mt to 26mt while Italy shipped in 30mt, up from 24mt the year before. Japan ramped up

In fact, the farms have reactivated the sardine fleet in Ensenada, which was at a standstill after the closure of the fishmeal plants. Bluefin tuna fattening is currently one of the main alternatives for the Mexican tuna

- ATRT Tuna-Ranching Intelligence Unit -

industry, especially Baja California hit by the decade-long tuna embargo.

Six of these tuna farms are currently operating off the Baja California coast.

In 2004 the production of Bluefin tuna in the tuna farms will be just over 3,000 tons, which is huge growth of 450% compared with the previous season.

Faced with lower prices because of the increased supply from new tuna ranches in Greece, Croatia and Turkey, Spanish and Maltese tuna-ranchers are not content to wait and find out what the future lays ahead while Australian 8.000 tonnes tuna-ranching industry representative Brian Jeffries tours tuna-ranching countries in the Mediterranean on a fact-finding mission.

creation in Tunis, of a trans-Mediterranean association of fisheries organisations is an encouraging development in the search for sustainable fisheries in the region.

“Clearly, Mediterranean stakeholders agree on the need for international co-operation to combat illegal fishing practices” commented Franz Fischler, Commissioner responsible for Agriculture, Rural Development and Fisheries.

The European Commission encouraged the creation of such an association in its 2002 proposal on an action plan for sustainable fisheries in the Mediterranean as part of the drive to increase stakeholders’ involvement in the fisheries management process. This initiative received the support of the

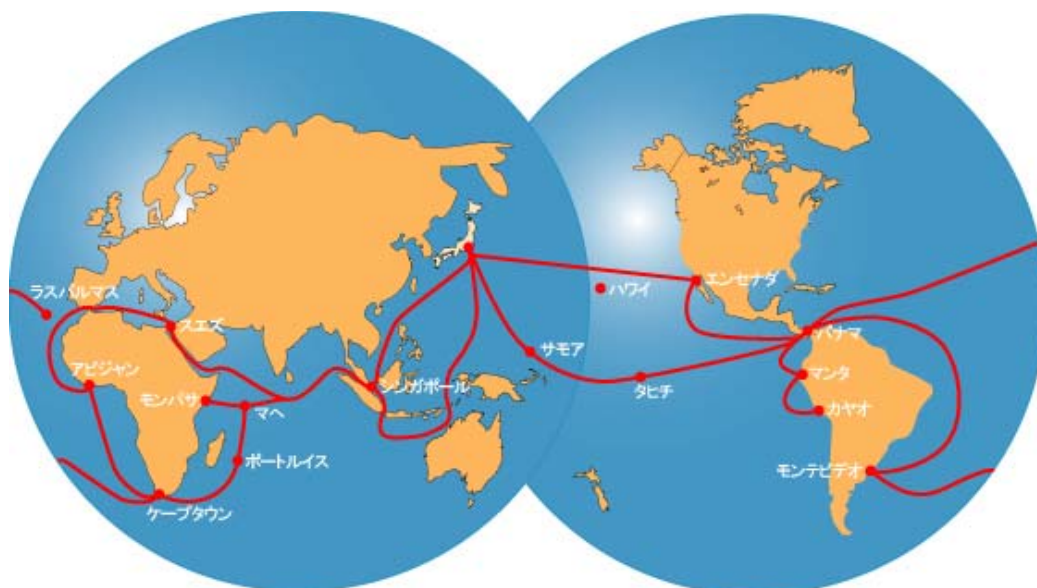
countries, international co-operation is needed now more than ever to ensure the long-term future of the Mediterranean fishing industry.



Franz Fischler, EU former Commissioner responsible for Agriculture, Rural Development & Fisheries and newly appointed EU Fisheries & Maritime Affairs Director, former Malta's Minister for Foreign Affairs Dr. Joe Borg



Newly appointed, ICCAT Executive Secretary, Dr. Driss Meski



According to David Ellis, Australian Tuna Boat Owners Association research manager, “figures should be around 8.000 tons, not too far off last year's total of 8.308 tons or the 2002 figure of 8.223 tons”.

Australian fresh farmed tuna has been selling on the Japanese market at ¥2.000/kilo compared with the ¥3.000/kilo it was worth in 2001.

Australian frozen farmed tuna goes for ¥1,150 to ¥1,250/kilo, compared with the ¥2,350/kilo it got in 2001.

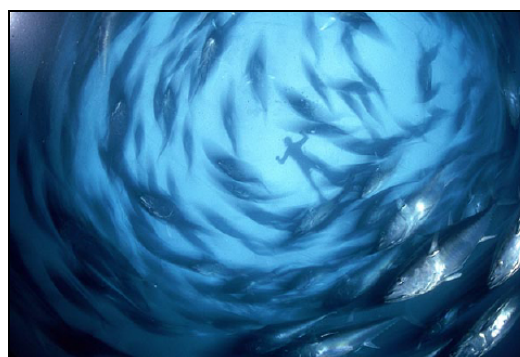
Official earnings estimate from the Australian Bureau of Statistics released in January pegged 2003 earnings at \$195 million, well below the previous year's earnings of \$264 million.

The word is that some tuna operators in the Mediterranean have begun freezing their catches as early as April with a clear objective to cut down on costs. Whether frozen catches will be properly reported to ICCAT and the EU remains to be seen. Unconfirmed information from the fishing community clearly indicates that 1.000 tonnes of tuna caught in Turkish waters will be declared under Korean quota.

EU fishing authorities should be on the lookout for pirate reefer vessels loading unreported tuna on-board. The recent

Ministerial Conference, held in Venice in November 2003.

The new association, Medisamak, which has received financial support from the European Union, currently gathers organisations from 11 Mediterranean coastal states: Albania, Algeria, Egypt, France, Greece, Italy, Libya, Malta, Morocco, Spain and Tunisia.



Bluefin tuna farms in the Mediterranean required to be listed with ICCAT in order to monitor the supply and international trade.

Despite its age-old fishing tradition, the Mediterranean is one of the regions where fisheries management has not yet been fully developed.

Yet, given the specific characteristics of the region's fisheries, which involve fleets from both Mediterranean and non-Mediterranean

Such co-operation will allow for the adoption of a common approach to fisheries management in the Mediterranean.

Two Regional Fisheries Organisations, the General fisheries Commission for the Mediterranean (GFCM) and the International Commission for the Conservation of Atlantic Tuna (ICCAT) are relevant to Mediterranean fisheries.

The Fresh/Frozen Tuna Market



value of US\$ 660.30 million compared to 15 355 MT in 2000. The growth continued during the first quarter of 2004.

Besides, fresh tuna loin imports also increased from 136 MT at a value of US\$ 884 325 in 2002 to 378 MT with an import value of US\$ 2.2 million in 2003.

In the USA fresh tuna is consumed as raw and also used for preparing cooked dishes. Bluefin and sashimi quality Bigeye are used in the growing number of Japanese restaurants for preparing sashimi and sushi products. Tuna sushi is also sold at retail outlets (mainly supermarkets) along with other sushi products, which are getting very popular all over the USA. Imports of Bluefin have increased significantly during the last four years - from 358 MT in 2000 to 1 432 MT in 2003. It even doubled during January - March 2004 against the same period last year.

Supplies of Bluefin tuna come from a number of countries but are dominated by Mexico, Spain and Canada. Higher imports from Spain and Mexico could be linked to increased tuna farming in these two countries. Imported Bluefin is often processed into sashimi quality loins and 'saku bars' (rectangular shaped bars) by importers and distributors for the food service sector. Unlike Japan, the daily requirement of sashimi tuna in most of the Japanese restaurants in the USA is rather small. Hence loins processed from one large sashimi quality Bluefin or Bigeye tuna may be distributed to more than one Japanese restaurant by a re-processor.

better flexibility and opportunity to tuna exporters in this market.

Frozen dressed tuna and tuna loins are also gaining importance in the US market to cater to the growing retail demand.

Due to the longer shelf-life, supermarkets, in particular, find it convenient.

The Japanese Market

Imports of valuable fresh and chilled tuna for the Japanese *sashimi* market totalled 19 818 tonnes in the first four months of 2004, a slight increase compared to the 19 5569 tonnes imported during the same period in 2003.



Tokyo-Tsukiji fish market

Indonesia remains the main supplier of air-flown tuna for *sashimi*, followed by Sri Lanka, Spain and Mexico. Indonesia and Sri Lanka supply the Japanese *sashimi* market with, mainly, Yellowfin and Bigeye; Spain and Mexico supply the same market with, mainly, Bluefin from farming.

The US Market

Even a few years ago, fresh tuna was hardly an important item in US imports of fishery products. It was always frozen tuna (both Yellowfin and skipjack), which had a major share in the country's imports of edible fishery products to feed the large domestic tuna canning industry.

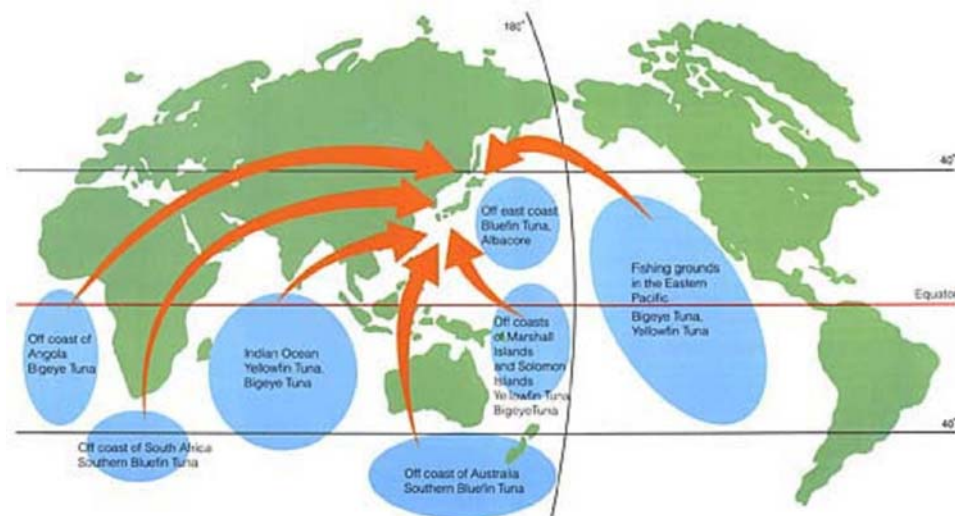
Consumption of fishery products in the USA was 15.6-pounds/edible meat per person in 2002 and canned tuna was the favourite seafood among US consumers for a long period with a quantity that fluctuated from 3- to 3.5-pounds/per capita. Lately shrimp has replaced canned tuna as the number one product in the list of top ten favourite seafood in the US market.

In contrast, sales of non-canned tuna marketed as loins, fillets, steaks, sashimi and sushi are increasing both at the retail and the catering levels, confirming consumer's choice for this product group. Following this market lead, imports of fresh tuna have also grown steadily during the last few years.

It is estimated that annual consumption of fresh tuna in the USA has reached 35 000 MT. The species marketed are Bluefin (*Thunnus thynnus*), Bigeye (*Thunnus obesus*), Yellowfin (*Thunnus albacares*) and Albacore (*Thunnus alalunga*). More than 70% of the total demand is being met by imported tuna.

Most of the imports consist of dressed fish (head-off/ gutted/ tail-off), which are processed further within the USA into loins and steaks, saku bars etc., for supermarkets and restaurants. A small quantity of fresh/chilled loins is also imported specially from Latin America.

In 2003 the market imported 25 262 MT of fresh/ chilled tuna (dressed without tail) at a



Nearly 80% of the market demand for Yellowfin is met by imported fish where Vietnam has overtaken Trinidad and Tobago as the leading supplier. Due to the proximity and lower airfreight, supplies of both Bigeye and Yellowfin tuna are often sourced from Latin American countries. Nonetheless, exports from Sri Lanka and Thailand have increased to the US market during the last three years.

Yellowfin is the most popular and widely consumed tuna in the USA. Fresh tuna is processed into steaks for restaurants and supermarkets. Reprocessing of dressed tuna into loins and steaks is preferred both by the foodservice and retail outlets due to the advantage over portion control which is very important particularly for retailers.

In the global fresh/chilled tuna market, Japan has always been recognized as the main importer. The Japanese market imports slightly over 60 000 MT of fresh/ chilled tuna annually. However, due to the prolonged economic recession, the market has become quite volatile and hardly grew during the recent past. The market preference is mostly for sashimi grade tuna.

On the other hand, the USA market has shown definite growth in fresh tuna imports during the last few years for both sashimi and non-sashimi grade tuna, thus offers

Yellowfin remains the main imported species in fresh form, however its imports are declining due to increasing captures of Yellowfin by the Japanese fleet.



During the first four months of 2004, imports of Atlantic, Pacific and Southern Bluefin tuna increased due to larger availability of farmed fish from the Mediterranean and Australia. At present, 99 percent of imports of Southern Bluefin tuna come from Australia.

Imports of frozen tuna into the Japanese market totalled 111 440 tonnes during the first four months of 2004, compared to the 110 237 tonnes during the same period in 2003. The main suppliers remain Taiwan Province of China and the Republic of Korea.

Bigeye and Yellowfin are still the main species imported in frozen form. Frozen skipjack is used as raw material for canning, to prepare skipjack sashimi (takami), and to prepare dried and smoked products (fushi).

In the first four months of the year, imports of nearly all species in frozen form are increasing compared to the same period in 2003, with the exceptions of Bigeye and, to a lesser extent, albacore.

Over the past year, demand of sashimi-grade tuna has been buoyant. In fact, Japanese consumers still tend to avoid beef and chicken due to the recent food scares.



The tuna auctions start at 5:30 a.m. To qualify for the job, auctioneers must first work for a wholesaler for three years, then pass an exam set by the Tokyo Metropolitan Government

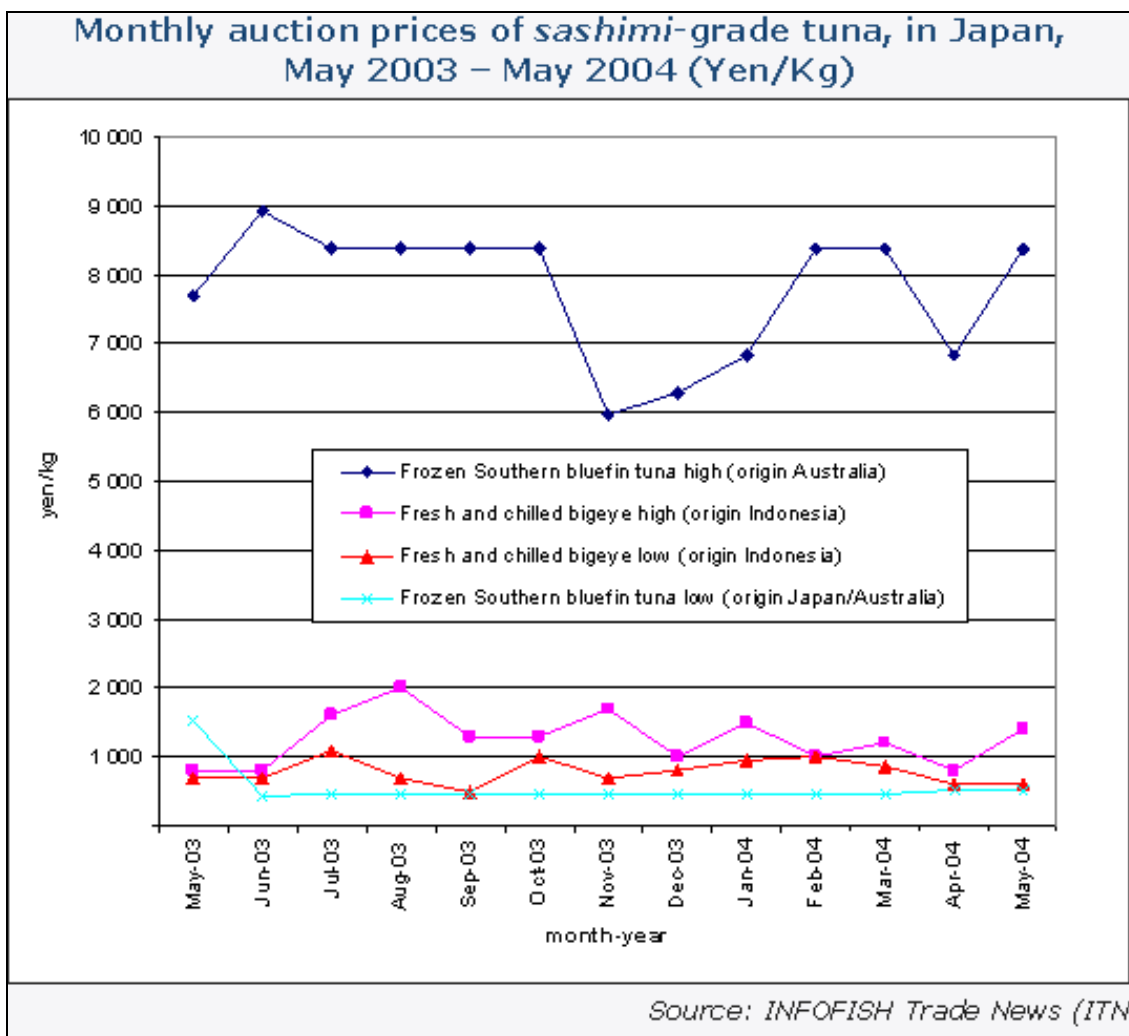
Prices of sashimi-grade tuna

During the past twelve months, the buoyant demand of sashimi-grade tuna was largely reflected in increasing upper range auction prices of Southern Bluefin and Bigeye. Therefore, upper range auction prices of frozen Southern Bluefin tuna (origin: Japan and Australia) increased from a low of ¥5 985/kg in November 2003 to ¥8 400/kg in May 2004 and upper range auction prices of fresh/chilled Bigeye increased from ¥800/kg in May 2003 to ¥1 400/kg in May 2004. Lower range auction prices, in turn, declined slightly over the period considered.



Tuna are cut to sizes specified by the client, probably a retail fish store or restaurant. The middlemen use a variety of knives and leave a minimum of waste.

(Source: Infofish)



Outlook

In the first four months of 2004, demand and prices of sashimi-grade tuna seems to be on a slightly recovering pattern. However it is too early to state whether or not the declining trend of sashimi-grade tuna imports experienced during the first part of the decade will be reversed.

Spot that Tuna!

Tuna aerial spotting is big business during the tuna season in the Mediterranean. Virtually every single fishing group owns and/or charters a couple of Cessna 337 "Push-Pull" or Partenavia P68. This year over 50 aircrafts have flown over the waters from Syria to the Balearic Island. During the month of June, a number of illegal tuna-spotting flights inside Libyan airspace were reported.

Antalya	Antalya	LTAI	11100 ft
Sitia	Sitia	LGST	2300 ft
Rodos	Maritsa	LGRD	7800 ft
Benghazi	Benina	HLLB	11800 ft
Tripoli	Mitiga	HLLM	11811 ft
Misuratah	Al Ghiran		
Malta	Luqa	LMML	11600 ft
Catania	Fontanarossa	LICC	8100 ft
Palermo	Boccadifalco Mil	LICP	4000 ft
Lampedusa	Lampedusa	LICD	5900 ft
Cagliari	Elmas Mil	LIEE	9200 ft
Ibiza	Ibiza	LEIB	9100 ft
Sabadell	Sabadell	LELL	2900 ft
Murcia	San Javier AB	LELC	7500 ft
Reus	Reus AB	LEERS	8000 ft

Airports used by tuna spotting aircrafts



Antalya, Turkey



Larnaca, Cyprus



Paphos, Cyprus.

Antalya and Paphos airports have been used to tuna spot the Gulf of Antalya fishing ground. Larnaca airport was used to tuna spot coastal water of Syria.



Luqa, Malta (Picture by Roberto Benetti)



Misratah, Libya



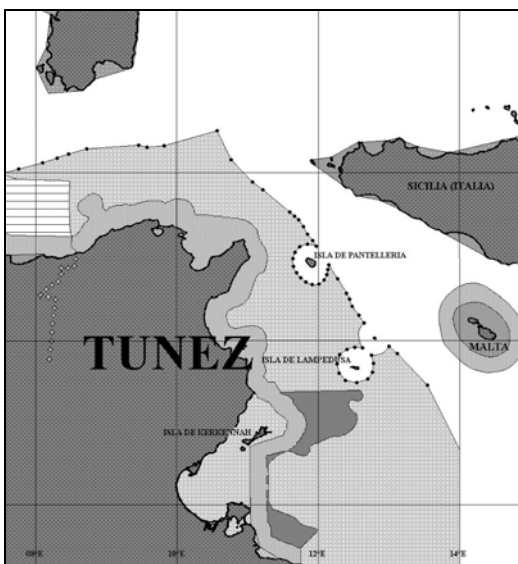
Mitiga, Tripoli, Libya

Luqa, Misratah and Mitiga airports were used to tuna spot the fishing ground between Tripoli, Sirte and Malta.



Lampedusa Island, Italy (Picture by Roberto Benetti)

Lampedusa Island airport was used this year to survey the airspace over Tunisian territorial waters. See map below.



Tunisian territorial waters



Trapani airport, Italy

Trapani and Cagliari airports were used by tuna spotting planes covering the fishing grounds West of Sicily, South of Sardinia and North of Tunisia.

Ibiza, Reus, Sabadell and San Javier airports were used this year to cover the entire Balearic Islands tuna fishing area.



Ibiza airport, Spain



Reus airport, Spain



Sabadell airport, Spain



San Javier airport, Spain

Tuna-Spotters Spotted on the Internet

Aircrafts used for tuna spotting are mainly Cessnas 337 "Push-Pull" and Partenavias P68.



Cessnas 337 "Push-Pull" type aircraft



Partenavia P68 type aircraft

From Ibiza to Paphos, from Malta to Tripoli, most of these aircrafts have been pictured by

airplane-spotters and portrayed on the Internet.

Some aircrafts have been spotted landing and/or taking-off in the middle of June when tuna spotting flights are forbidden by ICCAT and the EU.

You may check the whereabouts of all tuna spotting aircrafts in the Mediterranean at (www.jetphotos.net & www.airliners.net).

You may use the following list of aircraft's registry numbers, sorted by nationality.

- **Spanish Tuna Spotting Aircrafts**

- EC-BVL
- EC-CPG
- EC-CXC
- EC-DKD
- EC-DLS
- EC-EOV
- EC-ETU
- EC-FQA
- EC-GPF
- EC-GPQ
- EC-HEQ
- EC-HTK
- EC-IFL
- EC-IFR
- EC-IMV
- EC-IOD
- EC-IOQ
- EC-IPQ
- EC-ITV

- **French Tuna Spotting Aircrafts**

- F-BURE
- F-GKBV
- F-GMBE
- F-GNHI
- F-GURS

- **Italian Tuna Spotting Aircrafts**

- I-ATAT
- I-EAA
- I-GAUS
- I-OBSR
- I-PARJ
- I-RRPG
- I-VICC

- **US Tuna Spotting Aircrafts**

- N415D
- N4150
- N1284M
- N2514S
- N72140
- N86306
- N86306

Tuna spotters from down-under flying the Med.



Australian tuna-spotters Kiwi and Robyn White back to Australia from the Mediterranean where they worked for Kali Tuna's boats in Croatia and Turkey.

Freeze that Tuna!



Most of the frozen Bluefin tuna caught and farmed in the Mediterranean is frozen and shipped to Japan or other Asian countries, onboard tuna-reefer vessels.

Freezing onboard these vessels takes place during the fishing season itself (May-July) and after the fattening season (October-March)

During the fishing season some of these vessels will follow a given fishing fleet and freeze onboard whatever tuna dies during its transferring into the net-pens. Some times transport cages are not available on site or the catch is smaller than 50 tonnes.

The reefer vessel, along with a RSW vessel will take over and process the tunas. Some B grade specimens will be loaded on board the RSW ship and taken to the nearest port to be unloaded and distributed, the rest is frozen on board the Reefer.



Japanese Panamanian flagged tuna-reefers seen at Barbate, Spain

Other tuna reefers will start their loading operations well before the tuna purse-seining season starts. They will start loading and freezing longline and/or set-net caught tuna and normally complete their cargo with harvested tuna from a farms in the Mediterranean. The Ports of Valletta in Malta and Barbate in Spain are two of the main reefer sites for this kind of operation.

Whatever the origin of processed tuna, the thawing process is fast and effective.



Tuna reefer operated by Takayama Seafood approaching a tuna farm off the coast of Malta.

Freezing times do not extend beyond 12h.

Freezing times of up to 24h or even longer, will result in an inferior product and may even result in spoilage by bacterial action before the middle of the stack is sufficiently reduced in temperature.

Since the temperature just below 0°C is the critical zone for spoilage by protein denaturation, tunas are reduced from a temperature of 0°C to -5°C in 2h or less.



Korean tuna freezer vessel seen at Bolonia, southern coast of Spain.



Japanese Tuna Reefer seen entering the port of Tarifa, where it loaded some 200 tonnes of harvested tunas.

The fish is then further reduced in temperature so that its average temperature at the end of the freezing process is equivalent to a storage temperature of -60°C.

Most of these reefer vessels have a daily freezing capacity of up to 60 tonnes and a maximum cargo capacity of up to 4.500 tonnes.

Freezing tunas offshore allows a certain number of operators not to log or register for quotas because the fish isn't landed in the EU. The cargo is then declared at destination, if so, using forged fishing documentation.

The tuna reefer fleet would traditionally service huge super-low temperature cold storages in Japan such as the one built by Mayekawa Mfg Co Ltd. for Toyo-Reizo Co. Ltd. (10,000 tons super-low temperature cold storage plant, in Shimizu) or the one built for Tokyo Marine Product Terminal Co., Ltd (40,000 tons cold storage Tokyo)



Port of Yokozuka, Japan

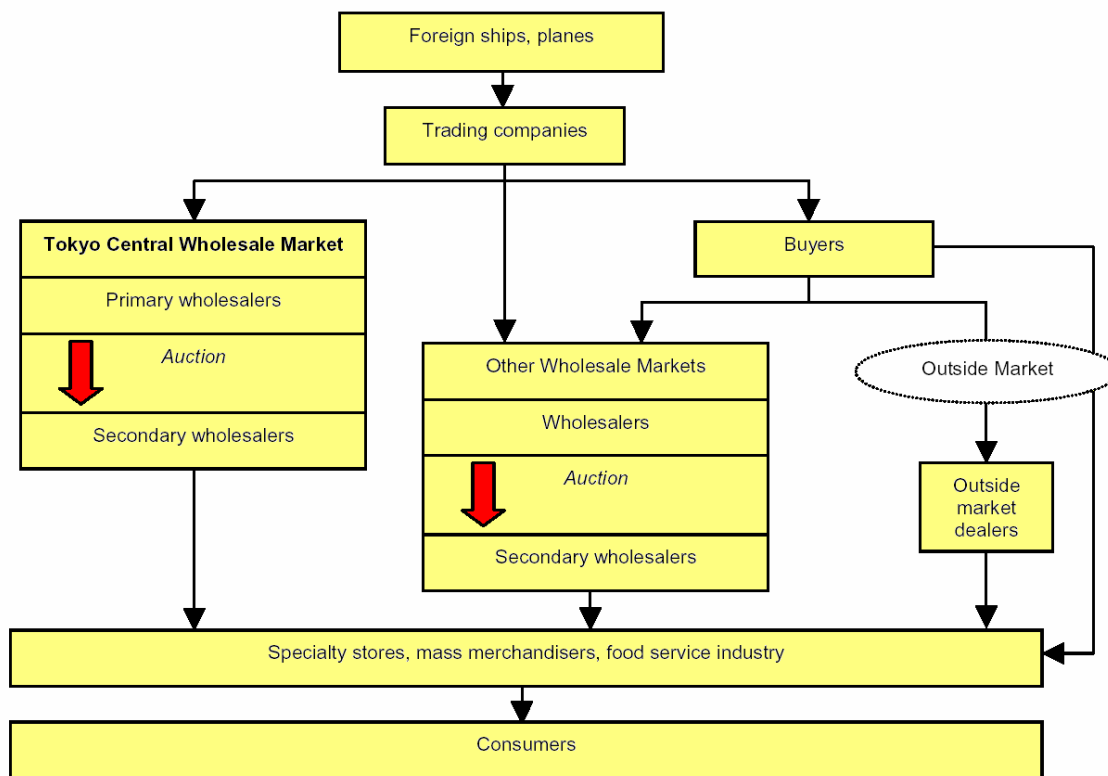
Two other huge cold stores are to be mentioned:

- Nippon Suisan Kaisha, Ltd. Rokko Island Distribution Centre, KOBE-SHI, HYOGO
- Kyowa Reizou Co., Ltd HIROSHIMA-SHI, HIROSHIMA

Japanese high standards for fish traceability forbids IUU captured tuna to be unloaded in Japanese ports. Once the fish has passed all inbound controls, it enters a complex distribution network as shown in the box diagram next page.

Nevertheless it must be said that most of the IUU Bluefin tuna caught in the Mediterranean, enters Japan via "inspection-friendly" fast-growing Chinese and Southeast Asian countries where tuna meat is processed, packed and shipped under a different denomination product such as ready-to-consume frozen sashimi tuna.

Imported tuna distribution channels



As Arata Izawa of WWF Japan puts it: "Japanese consumers have no clues to know whether or not the tuna they are eating is illegally caught," since companies importing and distributing tuna do normally never disclose all related information to the public.



Port of Kaohsiung, Taiwan



Port of Busan, Korea

Strangely enough, most Japanese tuna related Sogo Soshas have developed their own tuna storage and/or tuna processing plants in Asian countries. Some Japanese tuna concerns are heavily financing tuna freezing and processing facilities for ready to eat sashimi in countries like Spain, Panama and Mexico.

Trading house Nissho Iwai Corp (Sojitz Holding) markets frozen tuna in China since Japanese cuisine such as sushi and sashimi has become increasingly popular with consumers in the country.

Nissho Iwai has set up in Dalian (China) Shuang Ri Food Co., Ltd with a local fishery firm.

In Vietnam a centre for tuna purchase, processing and storing will be built in Tuy Hoa Township, southern coastal Phu Yen province, in early 2005. The centre will be equipped with Japanese technology to process and store tuna for export. The centre, the first of its kind in the country, will be built on an area of 10,000 m² with a total investment capital of \$US5 million in non-refundable official development assistance

(ODA) granted by the Japanese Government.



Akio Dobashi, newly appointed President and CEO, Sojitz Corporation (Merger between: Nichimen Corporation and Nissho Iwai Corporation)

In Papua New Guinea, Ludwig Kumoru, tuna manager for PNG's National Fisheries Authority says that negotiations are in progress for investment in more tuna processing factories in addition to a Philippines-owned cannery at Madang, a newly opened loinning plant at Wewak, and another loinning plant under construction at Lae.



Uichiro Niwa, President and CEO, Itochu Corporation

Itochu Corporation has delocalised its own tuna processing and canning activity to Indonesia through its affiliated company P.T. Aneka Tuna Indonesia.

Korean tuna concerns have also foreseen the potential of a fast-growing niche-market for ready-to-consume frozen sashimi tuna.

Dong Won Fisheries Co. Ltd., (Saha-gu, Busan) a privately-held Korean fishing company with annual sales of about US\$92 million, has also established a joint venture seafood processing plant at the Weihai Economic and Technical Development Zone (WETDZ in China).



Jae-chul Kim, Chairman of Dongwon Group

Dong Won Fisheries Co., Ltd. is one of the leading Deep Sea Fisheries companies in Korea operating over 30 fishing vessels of which, 17 long liners fishing Worldwide Oceans targeting "Tuna".

Dong Won Fisheries Co., Ltd. has two plants in Busan, processing the fish caught by its vessels. They produce among others "Frozen Tuna for Sashimi" Dong Won Fisheries Co., Ltd. sells most of its products to Japanese companies and traders, of which Hokushu Shokuhin Co., Ltd and Katokichi Co., Ltd are among its principal clients.

Katokichi is one of the leading producers of frozen food in Japan. Frozen food accounts for 70% of its total net sales of about US\$1.4 billion. Products sold by Katokichi include frozen food for frying, frozen consumer-ready foods as well as food ingredients.

Hokushu is a privately held food company with annual sales of US\$245 million. Fish products comprise almost 85% of total net sales, while the remaining 15% consists of Japanese delicatessen products.

Sajo Industries Co., Ltd., one of the leading Korean fishery companies, which has the largest tuna fleet in the world, with 67 vessels such as tuna purse seiners, pollock trawlers and jiggers, is also involved in fish farming and international & domestic trading.

Oyang Fisheries Co. runs a total of 23 vessels including 6 trawlers, 13 long-liners, 3 round haul netters for tuna and a cargo vessels, as well as five processing factories and freezing/cold storages. It has established a seafood processing plant joint venture, "Kangyang Foods Co., Ltd." in Qingdao, China

Tongyoung Fisheries Co., Ltd., is involved in advanced production of marine products kinds and runs Korea's largest cold storage and refrigeration factory.

Silla Co., Ltd. is one of Korea's leading fishing companies. It was established in 1967 and is listed on the Korea Stock Exchange.

Ocean Gate Trading Co., Ltd. As a trading company based in Seoul, Korea, Ocean Gate is specialized in trading frozen fish & seafood from the North Pacific Ocean & Far Eastern Russian waters. The company provides management services and financing & technical assistances for fishing companies and plants in Far Eastern Russia on a long-term cooperation, which has placed the company as a major seafood trader in East Asia.



Reverend Sun Myung Moon,
Happy World Inc.

Happy World, Inc. A JFTA member, and part of the Unification Church led by Reverend Sun Myung Moon, owns, among other companies, Hana Chain, Inc. This company owns Hana Seafood Restaurant-Fish Market & Sushi Bar, San Diego, CA; World Fisheries of Hawaii, Inc. with an Initial paid in capital of \$100.000 provided by Happy World, Inc. of Japan; New York Fish House, Inc. with a 2003 reported \$15.750.000 gross sales; Senkai Live Fish Liberty Harbour Marina, Jersey City.

The Unification Church has many other business enterprises: Tong Il Co. Ltd manufactures weapons and machine parts in South Korea, Il Hwa Co. Ltd (S. Korea), Il Shin Stoneworks (S. Korea), Hankook Titanium Co. Ltd. (S. Korea), Unification Church Intl, McLean (a holding company including Intl. Oceanic Enterprises Inc., Intl. Seafood Corp Inc, newspapers, tuna fleets, fish-processing plants, and boat-building, television production, One Up Enterprises, News World Communications and the Washington Times and other enterprises in the United States).

It is virtually impossible to ascertain which tuna reefer vessels are involved in this kind of traffic. Some of these reefer vessel operators hide behind Tax-haven country based companies such as Tuna Reefer Ltd., St Helier, Jersey. The real ownership of this company is unknown, and local banking regulations make it impossible to know where the money comes from...

"The problem of Illegal, Unreported and Unregulated Fishing on the high seas has been the subject of much discussion and debate at the regional and global level for the past decade or more. Increasing restrictions have been put into place to attempt to deal with the problem of IUU fishing on the high seas. At the same time, the scope of the restrictions have expanded in recognition of a number of important issues: One, that the infrastructure needed to support IUU fishing on the high seas goes well beyond the IUU fishing fleets themselves; two, unless and until the flag of convenience system is eliminated, port states, market states and countries of beneficial ownership will need to employ a suite of measures to combat IUU fishing; and three, regional fisheries management organizations may, in some cases, need to be reformed to ensure that all parties agree to and effectively implement the conservation and management measures adopted by the regional organization." Source: AGR/FI/IUU(2004)22

Japan rules the waves...

Japan outclasses its rivals by far when it comes to transport frozen tuna. An

enormous fleet of Panamanian or Japanese flagged reefers insure that the fish is delivered both to Japan and/or processing plants serving the Japanese market with sashimi and sushi.

The principal key-players in such traffic are the following Japanese reefer and/or freezing vessel operators:

- Akebono Suisan K.K.
- Ashikagahonten K.K.
- Choei Okado
- Hamako Suisan K.K.
- Hatakeyama Gyogyo K.K.
- Hatakeyama Suisan K.K.
- Hisao Kuroda
- Hokai Suisan Yugen Kaisha
- Hoyo Suisan K.K.
- Ishigaki Gyogyo K.K.
- Iwao Miki
- Junko Gyogyo K.K.
- Kaigata Suisan K.K.
- Kairyu Suisan Yugen Kaisha
- Kanedai K.K.
- Kanefuji Gyogyo K.K.
- Kanzaki Suisan
- Koshin Gyogyo K.K.
- Koyama Gyogyo K.K.
- Koyo Suisan K.K.
- Kumaei Sangyo K.K.
- Marukichi K.K.
- Mastuei Suisan Yugen Kaisha
- Mimasa Suisan K.K.
- Seiichi Ogino
- Shichigahama Gyogyo K.K.
- Shinya Ebisu
- Shotoku Suisan K.K.
- Takebayashi Gyogyo K.K.
- Toei Suisan K.K.
- Tokuei Gyogyo K.K.
- Yugen Kaisha Shoei Suisan

Some of the reefers operated by these companies in the Mediterranean (Corona Reefer, Seiko Maru 16, Astrea...) are old acquaintances of the Bluefin tuna fishing sector.



120m Tuna Queen operated by Toyo Reizo Co., Ltd.



Nagato Reefer



Chikuma Reefer



Daniela



Shinano Reefer



Paloma Reefer IMO: 930968



Unknown Japanese type tuna reefer

By the end of August, most of the Reefer fleets arrive to the Mediterranean tuna ranches. Over 17.000 tonnes of farmed Mediterranean Bluefin tuna will be slaughtered and blast frozen onboard these ships.

The Spanish Cartel

Tuna ranching in the Mediterranean is in the hands of a "select" group of 20 self-made men.

Faced with a changing over-saturated market, some of them have opted for total vertical integration and extra capital investment.

Others have had no other alternative but to resize business and dramatically cut on costs.

Though newcomers to the business have emerged, the sector is still controlled by two Spanish groups of companies: Ricardo Fuentes e Hijos, SA from Cartagena and Grupo Antalba from San Javier, Murcia.

The Tuna King



**RICARDO FUENTES
E HIJOS, S.A.**

Second to none, The Ricardo Fuentes e Hijos, SL group of companies from Cartagena, Spain, comes out as a clear leader of the sector. The Fuentes Group has an annual turnover in excess of €200 million. His Japanese partners, Mitsubishi Corp., Maruha Corp., Kanetomo and Mitsui have backed it with mighty financial support and global logistics.



Francisco Fuentes, General Director of the Grupo Ricardo Fuentes e Hijos, S.A.

The group is clearly vertically integrated in terms of tuna fishing capacity, shipping offshore freezing and tugging, ranching, processing and distribution.

Fuentes's Armada

The Fuentes Group has put together the most impressive fleet of ships, some of them directly owned by the group through subsidiary companies such as Armuelles, SA. (Panama) and Le Vent du Nord, SARL (France).

The aim of these companies is to guarantee regular tuna supplies during the different catching seasons in the Mediterranean Sea.

- *The Vent du Nord fishing group*



The Vent du Nord French company was incorporated three years ago and currently owns and runs the following Purse seiners:



- VENT DU NORD (FPLU)



- GOLFE DU LION 5 (FQAU)
- GOLFE DU LION 6 (FZQK)

Further more, Ricardo Fuentes e Hijos, SA. entertains a long and stable fishing partnership with a number of tuna-fishing fleets. Their entire yearly catches are bought by the group on an exclusivity basis.

- *The fleet from L'Ametlla de Mar (Spain)*



- NUEVO PANCHILLETA (EARY)
-Courtesy from Infomarine, Spain-



- GEPUS (EBZF)
- NUEVO ELORZ (EABQ) (Picture not available)

- *The Avallone Group from Sète (France)*



- JEANMARIE CHRISTIAN3 (FLRC)



- JEANMARIE CHRISTIAN4 (FGGS)



- JEANMARIE CHRISTIAN7 (FIAT)



- JEANMARIE CHRISTIAN5 (FQAO)



- JEANMARIE CHRISTIAN6 (FQBN)

- *The Cisberlande Group from Sète (France)*



- CISBERLANDE IV (FIRM)



- MARCAL (FVOS)



- CISBERLANDE V (FPRE)

- ATRT Tuna-Ranching Intelligence Unit -



- MARCAL II (FPHH)



- PROVENCE COTE D'AZUR (FUWA)

- *The Scannapleco/Di Rocco Group (France-Spain)*



- JEAN LOUIS RAPHAEL 2 (FGTX)



- JANVIER LOUIS RAPHAEL (FSXU)



- ANNE-ANTOINE II (FKZL)



- LEONARDO BRULL SECOND (EAPE)

- *The Viver Atún fleet*



- Viver Atún Uno RSW vessel
- Viver Atún Dos RSW vessel



- Punta La Gaviota support vessel



- Cabo Tifoso Dos
- *The Armuelles, SA Reefer fleet*



- Paloma Reefer (Panama)

The Paloma Reefer is the Fuentes Group latest acquisition. Taylor-built in Japan for tuna freezing purposes, the ship is owned by Fuentes Group shipping subsidiary in Panama, Armuelles, SA. It has a 60 tonnes/day freezing capacity and can hold over 2.500 tonnes of frozen tuna loins. It hoists a Panamanian flag and is not registered on the EU consolidated list of approved or recognised Panamanian factory vessels, processing plants and freezer vessels (Ref. Bruxelles, le 10 juin 2004; E3 D(04)531601 RM/agm)



- Daniela Reefer (Panama)

The Paloma Reefer along with the Daniela, another Panamanian tuna-freezer vessel has been in the Mediterranean Sea from the very beginning of the tuna-fishing season. Both ships have been freezing caught tuna from Turkey, Cyprus, Libya, Malta, Sicily and the Balearic Island. It is thought that both ships are almost fully loaded.

The pictures on this page were taken at the Port of Cartagena, July 16th 2004 at 15:30pm, as the Paloma Reefer was illegally unloading frozen tuna loins onto a Fuentes Group truck. Both ships entered the Port of Cartagena at the beginning of July.

They were on their way back to Shimuzu, Japan through the Suez Canal last week of July.

- *Tuna Supplies, SA.*

The Ricardo Fuentes e Hijos Group is also involved in tugboats and supply vessels that can service the sixty-some tuna pens all over the Mediterranean Sea. Three years ago, the Fuentes Group went into a joint venture with Sant Carles de La Ràpita based Naviera

Ariés, SL, owned at the time by Catalan businessman Florenci Macias.

The result of such joint venture is Tuna Supplies S.A, the largest fleet in the world of tugboats and supply-vessels specialised in offshore tuna-cage's towing formed by:



- SCOTIAN SHORE (Saint Vincent & The Gr. Flag)



- BRITANNIA UNO, (Spanish flag)



- Montornés, (Spanish flag)



- Montgat, (Spanish flag)
- Gargal, (Spanish flag)
- Cataluña, (Spanish flag)
- Montjuic, (Spanish flag)
- Montcabré, (Spanish flag)
- Montroig, (Spanish flag)

- *Other fleets*

The Fuentes Group enjoys a vast network of contacts throughout the Mediterranean Sea.



Kerveros SW 7182

The Fuentes Group will charter tugs (such as Greek Kerveros) in Italy, Greece-Cyprus and Turkey in order to service its fishing and penning operations in the area and inside Libyan waters. Tugging cages inside Libyan territorial waters is dealt by Libyan flagged tugboats.

Fuentes's Catching Season

Fuentes's fishing fleet had an early start this year.

According to Limassol Port Authority, some of Fuentes's vessels were in Cyprus as early as April 19th. (See next table)

This information concurs with unconfirmed reports of "French modern tuna purse seiners fishing close to Turkey's Antalya Gulf 12 mile limit, mid-April 2004."

Mediterranean. First, they are observed by spotter helicopters or planes, then they send in ships to encircle them with kilometres of net and finally, they 'bag' them," he explained.

After its Turkey and Cyprus fishing campaign, (Nobody knows under which ICCAT quota these catches will or have been declared) Fuentes Group fishing fleet started sailing West, catching whatever it could find off the coasts of Crete, Libya, Tunisia, Malta, Sicily, Sardinia, Algeria and the Balearic Islands. Poor quality dead fish was chilled on board RSW ships (ViverAtun 1 & 2) and unloaded at EU ports such as Castellamare

only ready to pay half as much. The so far empty tuna ranch is located in the Charco Azul Bay off the coast of Baru in the province of Chiriqui.



Corelsa type of tuna cages at the faro site of Granjas Atuneras, SA.

VESSEL REPORT						
PERIOD ARRIVALS AT LIMASSOL PORT (CYPRUS)						
Call Sign	Ship Name	Type	Arrival Date	Rotation	Store Name	Situation
FLRC	JEAN MARIE CHRISTIAN III	FISHING BOAT	19/04/2004 14:30	240610		5
FQBN	JEAN MARIE CHRISTIAN VI	FISHING BOAT	19/04/2004 14:30	240609		5
FPLB	JEAN MARIE CHRISTIAN II	FISHING BOAT	19/04/2004 15:30	240608		5
FPLU	VENT DU NORD	FISHING BOAT	19/04/2004 23:30	240611		5
EARY	NUEVO PANCHILLETA	FISHING BOAT	21/04/2004 18:40	240605	SHED NO. 5	5
SV3072	CENTAUROS	TUGBOAT	26/04/2004 19:45	240657		5
ICXR	RICCARDO	TUGBOAT	04/05/2004 11:30			5
IGTN	A.PELUSO(CP905)	TUGBOAT	04/05/2004 19:30			5
IHKT	DENARO	TUGBOAT	04/05/2004 19:25			5
P3UW9	JEAN MARIE CHRISTIAN II	FISHING BOAT	05/05/2004 14:00	240706		5
EALW	VIVER ATUN UNO	RSW VESSEL	05/05/2004 18:36	240700	SHED NO. 5	5
HO2430	PALOMA REEFER	REEFER	19/05/2004 14:30			5
ICXR	RICCARDO	TUGBOAT	19/05/2004 19:30			5
HO2430	PALOMA REEFER	REEFER	03/06/2004 22:44	240914		5
HO2430	PALOMA REEFER	REEFER	07/06/2004 12:20	240936		5
SV3072	CENTAUROS	TUGBOAT	09/06/2004 5:48	240966		5
EAVQ	PUNTA LA GAVIOTA	SUPPORT VESSEL	10/06/2004 10:48			5
ICXR	RICCARDO	TUGBOAT	14/06/2004 10:00	240978		5

Fuentes Group representative office in Istanbul (Bora Donmez, 4.Levent, Phone: 05322540340) does not comment on reports stating that catches by Fuentes's fleet in the Antalya area would have reached some 1.100 tonnes. About 450 tonnes would have been frozen on board the Paloma Reefer. Some 650 tonnes would have been transferred into tuna cages owned by Ak-Tuna, Fuentes Group subsidiary company in Turkey, which runs a tuna-ranch near the city of Gazipasa, East of the Gulf of Antalya.

del Golfo or Mazara del Vallo, to be then distributed through European markets.

High-quality dead tuna was blast frozen onboard the Paloma Reefer during the entire tuna-fishing season. This vessel has an over 50 tonnes per day freezing capacity.

However, according to the director of the National Authority of Environment, Venero Marquinez, Granjas Atuneras is still waiting for the results from a study on the Environmental Impact (EIA) to proceed with the installation, which will have a total investment of \$US 30 million, as well as the construction of a wharf to received the fishing vessels returning from high seas.



David Rodriguez Martinez, operations manager of Granjas Atuneras, SA. and FEXTUN, SA.

The final fishing project should install 10 cages about two kilometres from the Panamanian coast.

Cages will have a 150-tonne capacity for Pacific Bluefin tuna.

Furthermore, the project is encountering a barrier because the Seafood Producer, Processor, and Export Association (APPEXMAR) have opposed its establishment, on the grounds it will negatively affect the work of its own members.

APPEXMAR's representative, Jose Motta, says that there are photographs and videos showing "proof" that the tuna fishers do not respect the fishery law in prohibited waters. According to Motta, such a project "boosts illegal fishing" and "no arrests are being made by the authorities".

He adds that exports of tuna have dropped by 40% since last year because of the presence of these tuna vessels in Panamanian waters.

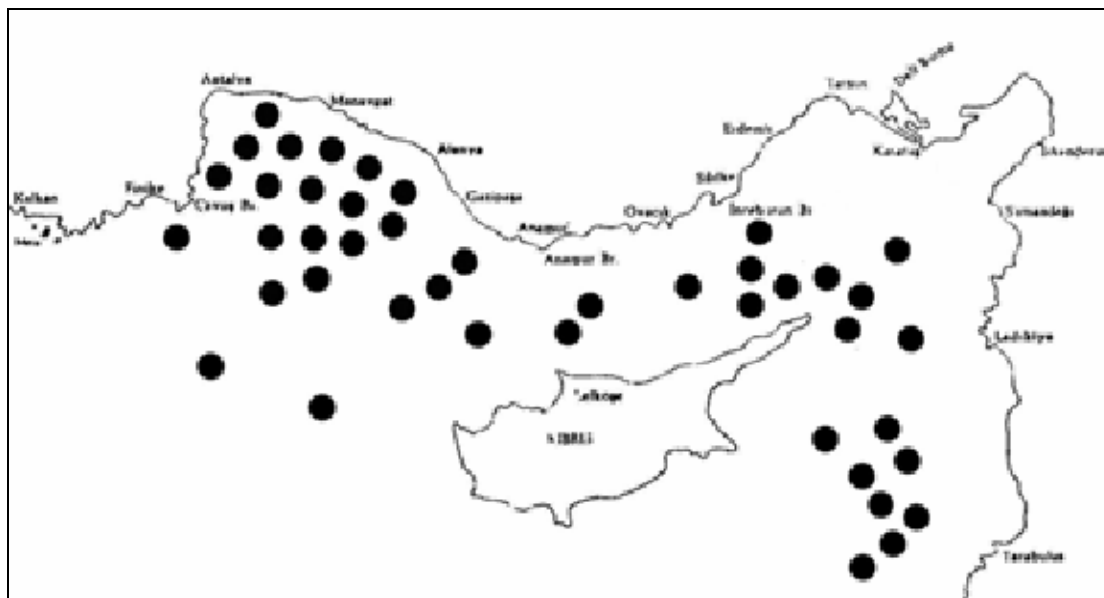
According to sources of information from Corelsa, SA. the entire farm would now be for sale and Grupo Fuentes would not build the intended US\$14 million tuna processing plant (Fábrica de Exquisiteces de Atún S.A. FEXTUN) that would have taken care of all fattened tuna at the ranch.

The facilities would have provided jobs to 600 locals.

The whole story strangely resembles to Fuentes' 2001-2002 tuna ranching venture in the Canary Islands.

Yaizatún, SA, the operating company of the Avila Bay 1.856 tonnes tuna-farm, near Playa Quemada, Yaiza, Lanzarote, ceased its operations after farming some 300 tonnes of live tuna.

The farm, managed by Gregorio Armas, was co-owned by the Fuentes Group and Andrés Cedrés, a local tuna purse seiners operator.



The fishing grounds of Bluefin tuna by Turkish fleets in the Eastern Mediterranean in 2003.

Cyprus press reported early May 2004, that "French and Spanish aircrafts have arrived on the island to trap, fatten or slaughter tuna, despite the fact the tuna farm in Limassol has yet to renew its license. The French and Spanish company working in cooperation with the tuna farm has brought helicopters and airplanes to the island to round up tuna and return them to the farm for slaughter". Greens deputy George Perdakis previously warned that tuna penning posed serious environmental problems and called for closer examination of the environmental impact of fishing, trapping and breeding tuna in Cyprus.

"Tuna farms are a huge problem for the environment and sea life. Tuna move together in the thousands across the

Fuentes's Ranches

- Granjas Atuneras SA. Barú, Panama

Spanish company Granjas Atuneras S.A., a Panamanian subsidiary of Grupo Fuentes formally initiated tuna fishing and ranching operations in the Pacific through a Panamanian fleet belonging to Spanish Panama resident businessman Manuel de La Iglesia.

The Ecuadorian tuna fishing fleet would not transfer its catches to Granjas Atuneras, SA, due to poor overall catches this year (40% less than last year). While Manta was paying \$US1.500/tonne, the Fuentes subsidiary was

- Ak-Tuna Balıkçılık Gazipaşa, Gulf of Antalya, Turkey



The Turkish press reports that Ak-Tuna, located at Pazarcı Mahallasi Uđur, mumcu Caddesi No: 11 -A 07900 Gazipaşa, started production of tuna in Antalya about a year ago. Ak-Tuna ranch has a 1.500 tonnes capacity and was able to ranch 1.200 tonnes in 2003.

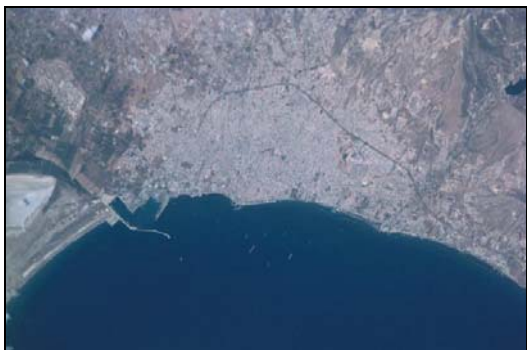
The Fuentes Group has a 50% stake in the Turkish company named Ak-Tuna Shipping and Fisheries that will invest USD 508,000.

The company will receive an incentive certificate from the Under Secretariat of the Treasury. Production for 2004 is 650 tonnes. Ak-Tuna currently employs 10 people.



- KimArgo Fishfarming Ltd. Bay of Limassol, Cyprus

Though Antonis Kimonides, General Manager of Kimagro Fishfarming, Ltd. will not comment on actual penned tuna stock, it is widely accepted within the fishing community, that the Limassol tuna ranch has, at least, 740 tonnes of Bluefin tunas in its cages.



Aerial view of the Bay and Port of Limassol

Tunas were caught by Cyprus re-flagged Jean Marie Christian II (P3UW9), owned by Salamina Fisheries, Ltd., at Iris House John Kennedy 3rd floor, 3106 Limassol; Jean Marie Christian III (Sète, France), Jean Marie Christian IV (Sète France) and Le Vent du Nord, 32 nautical miles off the coast of Syria.

The cages arrived to Limassol Bay on the 16th of June, tugged by Italian tugboat Riccardo and Greek tugboat Centauros (Owned by Piraeus based Centaurus Salvage & Towage Shipping Co.)



According to ICCAT statistical forms the declared average size is around 170 kgs. These figures contradict direct observations of such fish. Many of the caged tunas weigh over 250 kgs, some could exceed 350 kgs. In 2003, reefer vessels Daniella and Astrea landed 412 tonnes belonging to KimAgro's ranch. The mean weight at slaughtering was 260 kgs whereas size varied between 187 and 460 kgs.

Grupo Fuentes presence in newly EU-Cyprus is part of a bold strategic planning decision.

By exporting and re-flagging old French purse seiners and installing a tuna ranch in Cypriot waters, the whole Limassol-based operation will surely benefit from the European Commission Cyprus' operational programme for fisheries for the period 1 May 2004 to 31 December 2006.

Cyprus will receive € 3.4 million from the EU Financial Instrument for Fisheries Guidance (FIG).

Almost half the aid (48%) will help finance a reduction in fleet capacity, through the permanent removal of fishing vessels, so as to achieve a better balance between fishing capacity and available fish resources.

Most of the other half (44%) will support investment in the modernisation of aquaculture, processing and marketing of fisheries products and fishing port facilities.

In aquaculture, priority will be given to enhancing environmental conditions and promote the quality and hygiene of aquaculture products. Landing facilities will be improved and special attention will be given to increasing the productivity and competitiveness of the processing and marketing sectors.

While fisheries only represent 0.3% of Cyprus GDP, the fisheries and aquaculture industry, which provides around 1.350 jobs, play a significant socio-economic role in a number of coastal areas.

- Drvenik Tuna, d.o.o., Croatia.

Drvenik Tuna doo was incorporated in May 1998. The tuna farming Joint-venture Company is participated by Conex Split, Ricardo Fuentes e Hijos, S.A. (30%) and Japan's tuna giant Maruha Group Inc.

Maruha hopes to produce 30,000 Bluefin tuna in the 2006 fiscal year with sales

expected to reach 4 billion yen (US\$36.6 million). This fiscal year, the group expects to produce about 13.000 Bluefin tuna.

Drvenik Tuna doo's General Manager is Mr. Mladen Milaković.



The farm is located by Veliki Island, Drvenik, some 20 miles off the shores of Split.

Most of the equipment and technology has been supplied by Spanish companies such as Corelsa from Vigo.



Drvenik Tuna, doo focuses on Adriatic Sea medium sized Bluefin tuna, especially suited for distribution and commercialisation through Japanese supermarkets and retailers. Trough Conex Split, Drvenik Tuna doo operates the NEPTUN and the RADULA (9A8531).

Unconfirmed reports state that the Drvenik based farm has some 450 tonnes of live tuna in its cages.

- Tunisian Tuna, SL. Mehdia, Tunisia.

The Fuentes Group has a very strong presence both in Tunisia and Libya.

Tunisian Tuna SL. was recently incorporated as a merger between two existing tuna ranching companies: TBFF (Tunisia Bluefin Farm) and CBFF (Cartago Bluefin Farm) previously co-owned by the Fuentes Group.



The tuna ranch is located off the coast of Mehdia, south of the Gulf of Hammamet and can hold 1.500 tonnes of live-tuna in its cages. The sole buyers for such fish are Maruha and Mitsui from Japan.

Tunisian Tuna SL. shareholders are Mourad Trabelsi, Ben Ali's brother-in-law and Abdelwaheb Ben Romdhane, owner of the fishing company Calemba from Sfax.

- ATRT Tuna-Ranching Intelligence Unit -



Calemba's purse seiners at the Port of Sfax

Between the two of them, they control, through ownership or chartering, the second most powerful tuna fishing fleet in Tunisia composed by:

- IMEN SF 2324
- MERIEM SF 1761
- YOSRI II SF 1645
- JAMEL SF 1788
- TIJANI SF 2305
- HASSEN SF 2107
- ABDELWAHEB II SF 2260
- HAJ HEDI SF 2359
- TEBOLBA SF 2000
- MABROUK SF 1819
- TABSYS SF2398
- KHALY SF 1818
- ABOUCHAMM SF 2321
- HORCHANI SF 2121
- JANNET MO 610
- JANNET V SF 1813

According to Tunisian sources of information, Tunisian Tuna, SL will be ranching some 750 tonnes of live-tuna this year.

300 tonnes were caught by the Tunisian fleet, 450 tonnes were caught by Fuentes Group fleet off the coast of Libya.

The relationship between Francisco Fuentes and Mourad Trabelsi goes far beyond their Tunisian tuna ranching partnership.



Seif-al-Islam Kadhafi

Fuentes's strategic alliance with Trabelsi allows Fuentes's fishing fleets to freely operate inside and outside Libyan territorial waters.

It was indeed Mr. Trabelsi who brooked Fuentes Group relationship with Libya-based R.H. Marine Services Co., owned by Seif Al-Islam Kadhafi.



Tripoli-based R.H. Marine Services Co. currently owns and runs an aquaculture

operation at Ras-El-Hilal in the North-eastern coast of Libya.



Partial view of Ras-El-Hilal's aquaculture sea cages

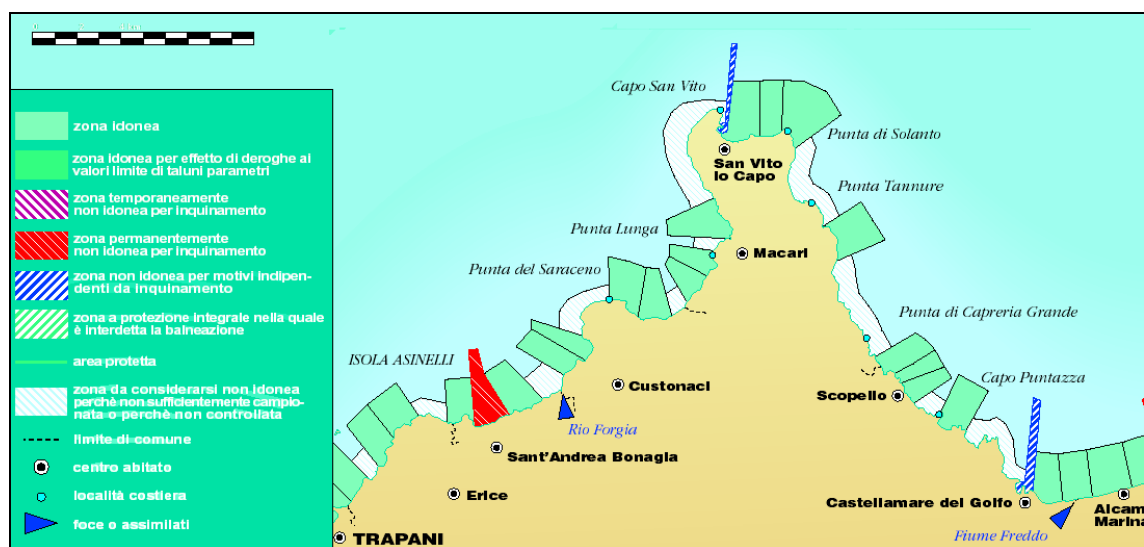
Its sea bream and sea bass operation should have been replaced with a 400 tonnes tuna fattening operation as from July 2003.

It is unclear if the company has managed to transfer some of the tuna caught by Fuentes's fleet, since it started giving logistic support to Fuentes's vessels and tuna spotting aircrafts operating inside Libyan territorial waters.

Cap. Khaled Ouz, Manager of the Fishing & Marine Investment Dept. at R.H. Marine Services Co. would not comment on the issue.

- New Eurofish, Castellamare del Golfo, Sicily.

According to local sources of information, the ranch would be jammed-packed with some 1.200 tonnes of live Bluefin tunas, caught off the southern coast of Sardinia.



View of the New Eurofish tuna farm at Castellamare del Golfo

New Eurofish s.r.l. from Marsala, Trapani was incorporated some four years ago by the Fuentes Group, Mitsui Corp. (Japan) and local businessman Guglielmo Maurizio Maggio.



Shoei Utsuda, President and CEO, Mitsui & Co., Ltd.

Andrea Piccione is the General Manager and Giuseppe Stabile its farm manager.

- Tuna Graso, Cartagena, Spain

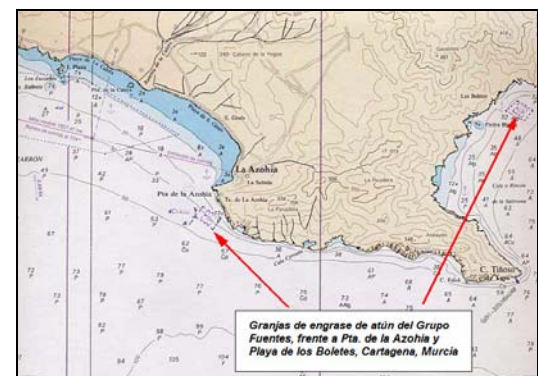


Tuna Graso was established in 1996 by Ricardo Fuentes e Hijos, S.A., Mitsui & Co. Ltd Group, and Kanetomo Co. Ltd.

With a 2002 €16 million turnover, Tuna Graso Spain, incorporated Tuna Graso Japan along with processing and distribution partner Kanetomo Co. Ltd.



Due to the changes in the Japanese Market, Tuna Graso has doubled the capacity of its 304.210m² farm located at Punta de La Azohía (T.M. Cartagena), being able to lodge up to 800 Tonnes of live tuna.



Tuna Graso farm site location

The Tuna Graso farm was authorised January 12th 1998 (BORM de nº8, de 12 de enero de 1998. Fecha de publicación de la Declaración de Impacto Ambiental Favorable en el BORM nº 196, de 26 de agosto de 1997)



Aerial view of Tuna Graso farm located between:

37° 32' 54,92" N; 01° 10' 34,41" W
 37° 32' 50,24" N; 01° 10' 16,73" W
 37° 32' 32,49" N; 01° 10' 16,78" W
 37° 32' 36,76" N; 01° 10' 41,98" W



- *Viver-Atun, Cartagena, Spain*



Incorporated in 1996 by Ricardo Fuentes e Hijos, S.A., Maruha Corporation (39%) and Taiyo A&F Co. Ltd.: a corporate merger between: New Nippo Corporation, Kokai Corporation and Daito Deep-Sea Fishing Company Ltd.



Yuji Igarashi, President Maruha Group, Inc.

Viver Atún Cartagena has a very important fleet to support its fishing and farming activities. Most vessels have been especially designed by Rodman Polyships from Vigo, Spain. They allow fast and efficient feeding of tunas as well as immediate chilling and processing on board before hauling at Cartagena harbour. The company now owns two tuna farms in Spain, with a consolidated maximum capacity of 2.400 tonnes of Bluefin tuna.

- Tuna farm at Piedra Blanca, Los Boletes, Cartagena, authorised December 24th 1997 (BORM nº296, de 24 de diciembre de 1997. Fecha de publicación de la Declaración de Impacto Ambiental Favorable en el BORM nº 126, de 3 de junio de 1997)



Partial sight of the 325.000 m² tuna farm located on the coast of Cartagena, Spain



Partial view of a Ø50m cage at Piedra Blanca tuna farm located between:

37° 33' 56,28" N; 01° 06' 36,41" W
 37° 34' 08,96" N; 01° 06' 28,20" W
 37° 33' 57,97" N; 01° 06' 01,40" W
 37° 33' 45,28" N; 01° 06' 09,61" W

- 640.000 m² Tuna farm between Puerto de San Pedro del Pinatar and Torre Derribada.



Partial view of the San Pedro Viver-Atun tuna farm located between:

37° 49' 59,4" N; 0° 40' 18,7" W
 37° 49' 58,1" N; 0° 40' 02,3" W
 37° 49' 06,2" N; 0° 40' 04,0" W
 37° 49' 06,6" N; 0° 40' 20,3" W

- *Atunes de Levante, SA. San Pedro, Spain*

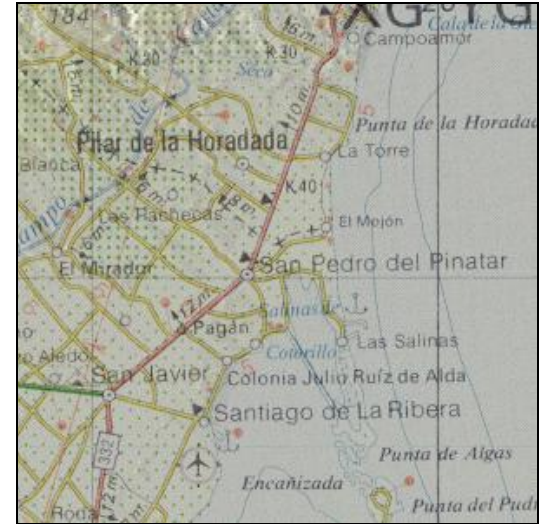
One of Fuentes Group latest incorporations (2003), Atunes de Levante, SA. is shared with Mitsubishi Torei-Toyo Reizo (49%).



Takeshi Inoue, Executive Vice President, Group CEO, Living Essentials Group, Tuna Unit, Mitsubishi Corporation

The new 640.000 m² tuna farm has a maximum capacity of 1.600 tonnes and is also located off the coast of San Pedro, between:

37° 49' 58,0" N; 0° 39' 58,2" W
 37° 49' 57,7" N; 0° 39' 41,9" W
 37° 49' 05,8" N; 0° 39' 43,5" W
 37° 49' 06,2" N; 0° 39' 59,9" W



Farm location map and coordinates

- *Winter tuna farm in Tarragona, Spain*

The Fuentes Group has started works on its latest project: "Projecte d'engreix de tonyines en gàbies flotants al golf de Sant Jordi" near L'Ametlla de Mar. The project has been approved (DOGC núm. 3843 Data Pàg. 5402 N/R: PIS 1011/02) March 14th 2003 by the Direcció General de Pesca i Afers Marítims del Departament d'Agricultura Ramaderia i Pesca (Catalonian Regional Governemnt) and should be fully operational as from September 2004. It is though, the Fuentes Group will use this farm to cage smaller tunas, caught by its fishing fleet, during the winter fishing season in the Gulf of Lyons. Tuna size will vary from 20 to 80 kilograms and maximum capacity of this farm will be 600 tonnes.

Fuentes's Factories

Tuna Graso opened Europe's first raw sashimi processing plant a couple of years ago. The plant, owned by Ricardo Fuentes e Hijos, covers 4,000m² and has created over 40 new jobs, according to local newspaper La Verdad. The plant was established after a total €6,8 million investment and forms part of the company's strategy to diversify production, initially limited to export raw tuna to wholesalers. The plant processes raw Bluefin, Yellowfin and Bigeye tuna.



Standing Carlos Cabezas and José Miguel Pérez, managing directors of Ricardo Fuentes e Hijos, SA.

Yellowfin and Bigeye were only used for canning purposes. Now sashimi grade of these tunas is selected and processed in to raw loins.

Tuna Graso is not aiming solely for the Japanese market, but is also introducing its production into Europe and the United States.



Aerial view of 1.500 tonnes processing capacity plant at La Palma, Murcia

Frigoríficos de Túnidos SA, covers a structural lack of cold storage plants in the Murcia region. This 30,000m³ facility is the largest of its kind in Europe. 4.800 m³ are used to store fish at -60°C.

Moreover, the plant holds twenty "ultra-freezing" nitrogen tunnels at -80°C with a freezing capacity of 60 tons a day.

The Fuentes Group has also three other storage plants in the area, capable of maintaining up to 600 tonnes of frozen sashimi quality tuna at -60°C.

Furthermore, the company uses part of these facilities as "customs public deposit" attracting foreign fishing fleets mainly from Asian countries, operating in the Mediterranean Sea and the North Atlantic Ocean.

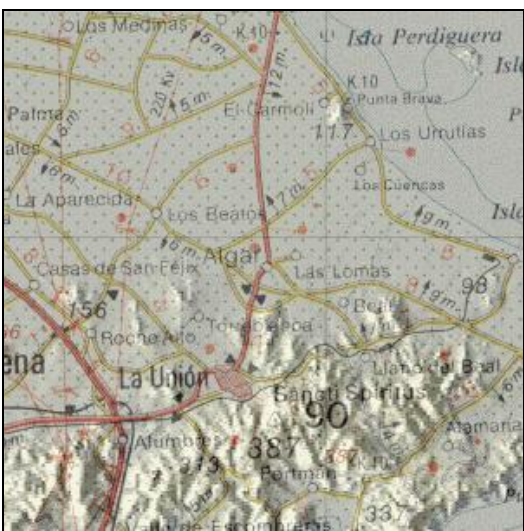
But as if this wasn't enough, the Fuentes Group has also started the works on a 3.000m² state-of-the-art tuna cold storage and processing plant at the port of Cadiz, Spain, capable of processing up to 16.500 tonnes of fish per year.



Bluefin tuna sashimi

Diversification

It is the latest talk in town. Ricardo Fuentes has entered the real estate sector with a 400-unit residential housing project in the El Algar area, near Cartagena.



According to local newspapers, the Fuentes Group has acquired some 400.000m² of land between El Algar and San Ginés de la Jara, near the Mar Menor area.

This is not the first time the Fuentes Group is involved in real estate. It did have a minority share in the Santa Ana residential project a couple of years ago.

Fuentes Group irruption in the real-estate sector comes as a market competitiveness strategic decision.

It is said that the decision was hastily taken at Fuentes's headquarters in La Palma, because of Murcia region real estate mogul,

Alfonso García from Grupo Unión, has heavily invested in two tuna ranches off the coast of San Pedro del Pinatar.

Such "Dynasty-like" scenario is nevertheless rejected by some local analysts who are keen to point out that the Fuentes and the Union Corporations have formed a *de-facto* strategic alliance that could mean the begging of the end for smaller tuna and real-estate players in the Murcia region.

At a time when fuel, airfreight, labour, insurances, farmed tuna stocks and the Euro are up, as opposed to the Yen and average price for Bluefin sashimi hitting record lows, it only makes sense that two vertically integrated corporations should rule the sector.

From Real Estate to Tuna-Ranching

Three years ago the Grupo Unión went into partnership with Sinforoso and Tomás Albaladejo, owners of a tuna processing plant in San Pedro del Pinatar.



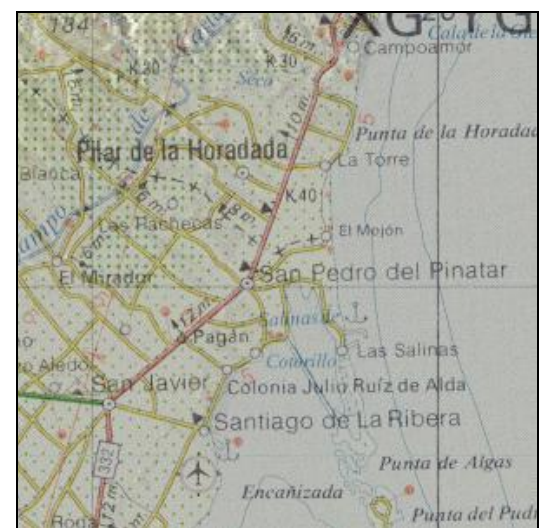
Front view of Pescados Albaladejo at San Pedro del Pinatar, Murcia, Spain

Together, they incorporated Viveros Marinos Hijos de Albaladejo, SL. owner of a 1.600 tonnes capacity 640.000 m² tuna farm off the coast of San Pedro del Pinatar. (BORM nº 116, de 22 de mayo de 2003)



Alfonso García "Pan de Higo", President Grupo Unión (Cartagena)

The farm is located between:



37° 49' 58.8" N; 0° 40' 39.1" W
 37° 49' 58.5" N; 0° 40' 22.8" W
 37° 49' 06.6" N; 0° 40' 24.4" W
 37° 49' 07.0" N; 0° 40' 40.7" W

In its second year of activity, the newly formed tuna ranching group, operated by the Albaladejo brothers, went on an uncontrolled expansion phase characterised by incompetent business planning, sleazy management policy and logistical inconsistencies, all of which were responsible for huge business setbacks that severely hampered the company's financial solvency.

- The Portocolom (Mallorca) Viveros Marinos de Baleares, SL. tuna farm

- ATRT Tuna-Ranching Intelligence Unit -

project (BOIB, Num. 13, 28-01-2003, 771. January 13th 2003) is at a standstill due to lack of funds.

- The sinking of 24m long trawler 'Nuevo Bahía de Málaga' used as a tuna-farm working-ship, and loss of its crew on its way to Tunisia for the tuna fishing season, off the Jijel Algerian coast, April 2003.
- No tuna was transferred into the San Pedro tuna farm in 2003, due to a lack of available tuna fishing vessels in the Balearic Islands fishing ground.
- Incorporation of Viveros Marinos de Túnez, SL. a tuna farm joint-venture located in the Gulf of Hammamet, with Sfax-based Fish Tunisie sarl, owned by local businessman Hamed Sallem.
- Poor results in Tunisia in 2003.
- Ownership transfer of well-vessel Shemara to the Tunisian joint-venture.



- SAINT SOPHIE FRANÇOIS II (FQCB)
- GERALD LUC 4 (FPMC) (Picture N/A)

The Grupo Union has also acquired Piscifactorias de Levante, SL., Ginés Méndez's 300.000m² tuna farm at Punta de Algas, San Pedro del Pinatar, located between:

37° 47'36,47» N; 00° 40'55,06» W
 37° 47'35,98» N; 00° 40'30,55» W
 37° 47'19,77» N; 00° 40'31,06» W
 37° 47'20,26» N; 00° 40'55,57» W

According to local tuna farm workers, divers from the Fuentes Group are helping-out with the re-mooring of cages at the site.

This would be a clear indication of the "de-facto" alliance between Fuentes and Grupo Unión.

This was too much for Alfonso García "Pan de Higo" who took over the Spanish-based business operation in 2004 through a swift buy-out. The company has since managed to transfer some 700 tonnes of live Bluefin tunas caught in the Balearic Islands and Libyan waters with the following vessels:



- SAINT ANTOINE MARIE (FQAV)



- GERALD JEAN III (FKDU)



- GERALD LUC 3 (FUTP)



- SAINT SOPHIE FRANÇOIS 2 (FPCT)

Rise & Fall of a Tuna Prince

2003 was indeed an “*annus horribilis*” for Grupo Antalba from San Javier. The group, incorporated by Joaquín Albaladejo López was directly hit by the Bluefin tuna market crisis and reported losses of up to €18million.

With over 4.000 tonnes of live-tunas inside its cages in the Mediterranean, for the second consecutive year, Antalba found itself selling frozen and fresh tuna to Japan at a loss.



Joaquín Albaladejo López,
President of the Antalba Group of Companies.

The Antalba group of companies found itself in a financial maelstrom, with its 2002 reserves ransacked by non-productive real-estate investments and pending debts both to fishermen and local banks.

Its international expansion projects in Italy, Madeira, Chile, Namibia, Crete and Ecuador were halted due to a sheer lack of funding and total mismanagement.

As if this was not enough, the Antalba Group lost a new state-of-the-art facility, located in San Javier, in an accidental fire, just before the 2003 fishing season started.

Two of Antalba's ships, the “Diosa Josephine” and the “Sea Nostromo Quinto” were arrested at Mazara del Vallo, Italy.

Moreover, some 400 tonnes of caged tunas were lost due to severe weather conditions and anoxic upwelling phenomena at the San Pedro farm site during winter 2003.

With €18 million reported net loss in 2003, Antalba's new management team, headed by newly appointed General Manager Antonio Bernal Bas, former Tuna Graso's General Manager, has had little or no chance to implement business.

It has indeed been fighting for survival for the past year and may come-up with a break-even balance sheet in 2004, thanks to the sale of corporate property and provided the Euro doesn't strengthen to much versus the Japanese Yen.

The Antalba Group has reshaped its business size and will only farm some 2.500 tonnes of tuna this year. According to Japanese sources of information, Antalba would have already sold some 60% of its caged tuna to a Korean fish-processing group through Nihon Marine from Japan.

The deal would indeed give Antalba a financial fresh breath of \$US9-10 million that will allow some early debt repayment. It is still unclear how and under which ICCAT certification Antalba's frozen-tunas are going to be exported to Korea and Japan.

Out of some 2.100 tonnes farmed in Spain, over 1.500 tonnes were caught by an Italian tuna fishing fleet spearheaded by:

- MARIA PIA (04GA00672)

- GIUSEPPE PADRE (IQRL)
- LUIGI PRIMO (IVHD)
- MARIA CARMELA MADRE (IQVI)
- CRISTOFORO PRIMO (IFVD)

It is unclear how tunas transferred by these ships into Antalba's cages will be declared under Salerno Tuna Fishing Cooperative's 2004 quota of 2.809,095 tonnes.

Some 700 tonnes of tunas were caught and transferred into cages off the Balearic Islands by the following French purse seiners:



- ROGER-CHRISTIAN II (FUSE)



- ROSINE ARTHUR (FGPH)



- VILLE D'ARZEW 2 (FKTL)



- LOUIS FRANCOISE 2 (FUSD)

It is still unclear if Grupo Antalba has towed live-tuna cages all the way from Libya to Murcia. No one at Antalba's offices in San Javier would comment on this issue.

The Antalba Group owns through some of its subsidiary companies, a fleet of well-vessels, tailor-built for fishing and farming. All of them have been used during the fishing season mainly for chilled dead tuna transport. Unloading of these vessels took place at San Pedro del Pinatar and Denia.



Well vessel Tuna Farms Primero



Well-vessels Hnos Alba 1 & 2



Well vessel Tuna Farms Segundo



Diosa Josephine, IMO: 8964393 (UK flag)



Sea Nostromo Quinto IMO: 6828909

The Antalba Group, through Sea Nostromo, SL, also owns four tugboats that service cages in the Balearic Island and Tunisian fishing grounds.



Tugboat Sea Nostromo Tercero



Tugboat Sea Nostromo Primero



Tugboat Sea Nostromo Segundo



Tugboat Sea Nostromo Roompot

Most of the cages tugged from Italy, Tunisia and Libya back to Antalba's tuna farms in Murcia are taken care by Rimorchiatori Sardi from Cagliari and Rimorchiatori Riuniti from Naples.



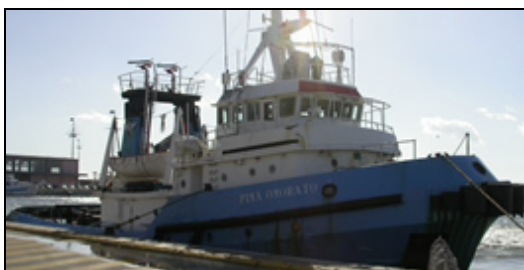
Tugboat Tarentum



Tugboat San Cataldo



Tugboat Maria Onorato



Tugboat Pina Onorato



Tugboat Vincenzo Onorato

The Antalba Group has three tuna farms in the Mediterranean, two in Spain and one in Tunisia. Its plans to set tuna farms in Sardinia (Tuna Farms of Italy), Libya (Tuna Farms of Libya) have failed due to mismanagement and strong opposition by local conservationist groups. Its oldest tuna farm is located in La Cala del Gorguel, Murcia.

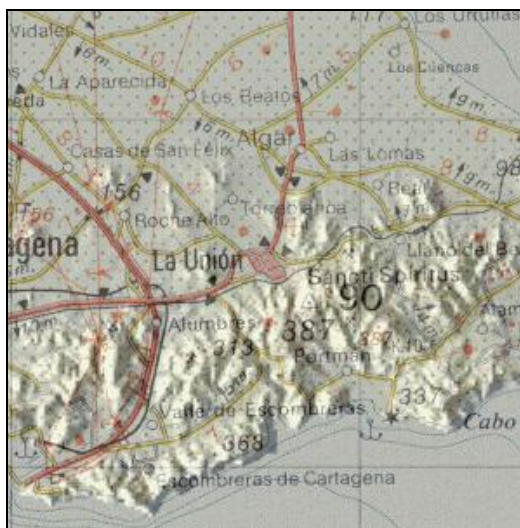
The farm was the first one of its kind in the Mediterranean Sea. It was established by a Japanese/Australian/Spanish joint venture

spearheaded by the late Mr. Yoshinaga and Mr. Francisco Rebollo from Cabo de Palos.

Due to financial difficulties, the business was sold to Tuna Farms of Mediterraneo, SL a company owned by the Antalba Corporation.



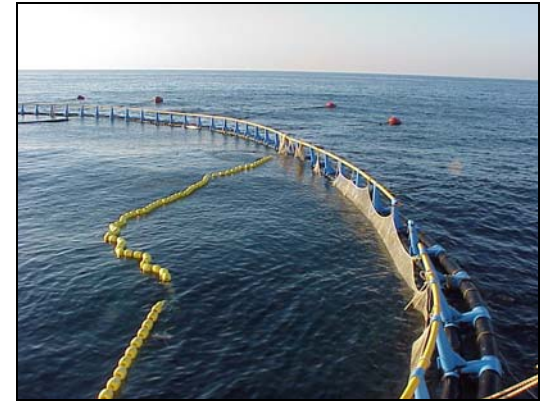
The 900.000m² farm (*Fecha de publicación de la concesión en el BORM nº203, de 2 de septiembre de 1999. Fecha de publicación de la Declaración de Impacto Ambiental Favorable en el BORM nº 269, de 20 de noviembre de 1998*) is located between:



37° 34' 25'' N; 00° 52' 32'' W
 37° 34' 25'' N; 00° 52' 12'' W
 37° 34' 13'' N; 00° 52' 32'' W
 37° 34' 13'' N; 00° 52' 12'' W

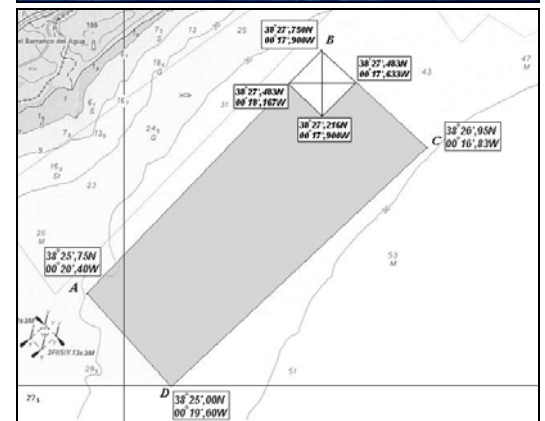


The farm has a maximum capacity of 2.400 tonnes of live-tuna



Through Tuna Farms Grosa, SL., the Antalba Group owns a second tuna farm located off Puerto de San Pedro del Pinatar between:

37° 48' 30» N; 00° 40' 42» W
 37° 48' 30» N; 00° 40' 04» W
 37° 48' 15» N; 00° 40' 42» W
 37° 48' 15» N; 00° 40' 04» W



Situation map and cages layout

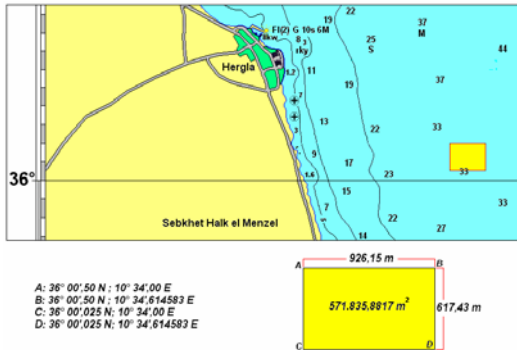
The 412.515m² farm (BORM nº82, de 9 de abril de 2001 a nombre de VIVEROS MARINOS ALBA & HERMANOS LÓPEZ, S.L. *Fecha de publicación Declaración de Impacto Ambiental Favorable en el BORM nº 161, de 13 de julio de 2000*) has a maximum capacity of 1.800 tonnes of live-tuna.



Feeding time at Antalba's tuna farm off San Pedro del Pinatar

The Antalba Group also owns a tuna farm in Tunisia, through its joint venture with Kerkenna-based tuna fishing operator Ridha Sallem.

Tuna Farms of Tunisia, SL., as the company is named, operates its facilities off the Port of Hergla, Gulf of Hammamet.



In its second year of operations, the 571.835m² with a maximum capacity of 1.500 tonnes of live-tuna is thought to have a stock of 500 tonnes of which some 150 tonnes were caught by Italian tuna purse seiners in the Thyrrean Sea. According to Tunisian sources of information, the fish was sold by TFM to TFT at €8/kilogram.

Some 530 tonnes were caught by Ridha Sallem's aging fleet of purse seiners, though 180 tonnes could not be transferred into cages because these were simply not ready before the fishing season started

OWNER/OPERATOR	VESSEL NAME	Reg. Num	Length	TRB
SALLEM RIDHA	MED SALLEM	SF 1566	28,93	127,000
	MED TAHAR II	SF 2146	24,15	90,000
	RAF RAF	SF 2160	24,25	91,000
NIFAR	YOSRI II	SF 1645	25,00	84,000
	IMEN	SF 2324	29,10	168,000
	MERIEEM	SF 1761	30,45	129,000
RAOUINE AHMED	JAMEL	SF 1788	26,29	98,000
	TIJANI	SF 2305	27,20	142,000
CHABCHOUB	CHAFFAR	SF 2186	25,55	95,000
	ELAMINE	SF 2353	39,23	275,000
	ELAZIZ	SF 2352	39,23	275,000
	MOEZ II	SF 2034	27,88	116,000



In 2003, Tuna Farms of Tunisia, SL, surprised Japanese customers for its top quality "A" Grade sashimi tuna. According to several sources of information, TFT, SL tuna was top of the 2003 list for quality, fat and colour in the entire Mediterranean, though last year's low price situation, both for frozen and fresh, did not help the company to fully break-through in Japan.



Toumi Nedji, General Manager
Tuna Farms of Tunisia, SL.

Toumi Nedji, General Manager at Tuna Farms of Tunisia, SL, is nevertheless optimistic about this year's results. His Japanese customers among which Nihon Marine and Daito Gyorui Co. Ltd. have already proposed a fixed cross-the-board price for all of TFT's frozen production in 2004.

With a 2003 annual Turnover of ¥174,700 million, Daito Gyorui Co. Ltd. -founded 1in

1947- is the biggest of five auction houses at Tokyo's Central wholesale market.

Daito also owns five fish markets in the Greater Tokyo area and is one of the leading companies of Maruha Group, which is the world largest group of companies in the fishing industry.

With the support of Maruha Group fish markets and allied fish markets located all over Japan, Daito has established a strong and reliable sales network.



Daito's distribution network in Japan

Daito's affiliated company, Maruto Shokuhin, is running the business of fish wholesale, fish processing and retailing (tenant shops in department stores and supermarkets) in the Greater Tokyo area. Another affiliate, Maruto Reizo, is processing fish and running cold storage at Hachinohe City in Aomori prefecture.

Daito, with the support of Maruha Group's fish markets and allied fish markets, has established a strong and reliable sales network in Japan. Major fish markets in the network are Nagoya, Kyoto, Kobe, Kannonji, Sakai-Minato, Kita-Kyushu, Saga, Kumamoto, Kagoshima (Maruha Group markets) and Sapporo, Aomori, Sendai, Mito, Yokohama, Kawasaki, Osaka, Okayama, Hiroshima, Fukuoka, Nagasaki (Allied markets)

TFT's objective to reach its maximum holding capacity of 1.500 tonnes of live-Bluefin tunas will be reached in 2005.

Prof. Cherif Sammari from the *Salambo Institut National des Sciences et Technologies de la Mer*, will be taking care of the environmental Impact Assessment Report as it is probable that most of the hotels and tourism related businesses around the Gulf of Hammamet will oppose further tuna ranching activities off the port of Hergla.



Prof. Cherif Sammari

With feeding-bait down to US\$240/tonne, live-transferred-tuna down to US\$4.800/tonne, cost cutting, farm personnel layoffs, debt re-financing and corporate restructuring it might be a break-even year for the Antalba Group.



Tuna slaughtering at one of Antalba's tuna farms

Clearly Antalba's new management "dream-team" is carefully monitoring the rising price of fuel and assessing its effects not only on airfreight prices and insurance rates, but also on general running costs at Bluefin Tuna, SL., Antalba's cold-storage, packaging and road transport subsidiary.



Bluefin Tuna refrigerated truck being loaded with chilled tunas at the Port of Cartagena, Spain.

Grupo Fuentes "de facto" alliance with Grupo Union is certainly also being closely monitored by Antalba's management.

Competition between Antalba and Fuentes has always been fierce and the last thing Antalba's management wants is to find itself crushed between Fuentes and Grupo Union.

Now that Antalba's business partnership with French group Sud-Marée is over, it will not have the same type of access to the Sète purse seine fleet it used to enjoy in the past.

Moreover, by ending its long relationship with Sud-Marée, Antalba has lost its best fresh & frozen tuna distributor for France. Sud-Marée is the leading tuna distributor in France with customers such as Auchan and Intermarché.



Tuna grading and packing at Bluefin Tuna, SL facilities in San Javier, Murcia, Spain.

Not surprisingly, the talk at the L'Ametlla de Mar docks turns around how the Antalba "dream-team" will crawl back to the Balfegos, begging for next year's fish.

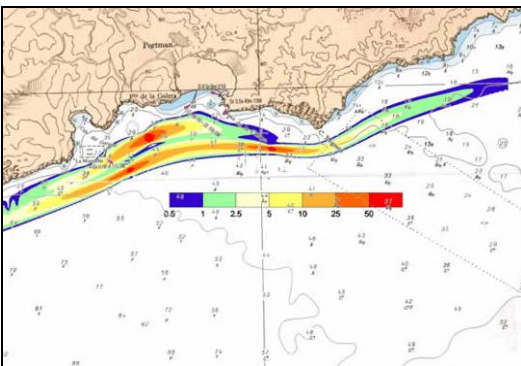
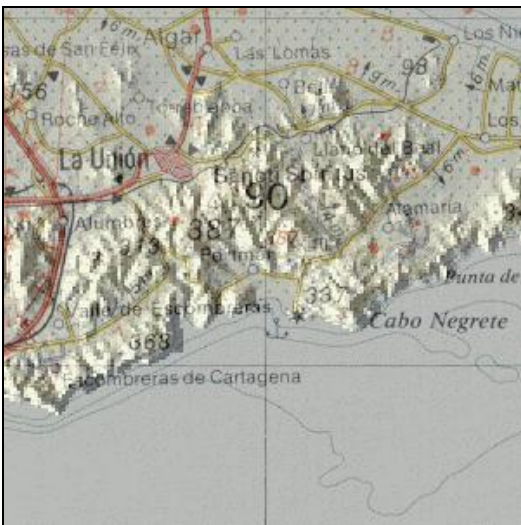
Whatever the outcome, Joaquín Albaladejo, Chairman of the Antalba Group, has clearly proven his willingness to stay in business.

This much cannot be said of other Spanish tuna ranching operators who have fled abroad after a disastrous 2003 season.

The Tuna Barons

Francisco Martinez Rebollo, a local fish trader from Cabo de Palos was the first Spaniard to set-up a tuna ranch in the Mediterranean Sea, along with late Yoshinaga San. The idea was so revolutionary that Spanish tuna purse seiners would not transfer their catches into the old Bridgestone gravity cages. After two years battling with fishing captains, he sold his share of the company to the Albaladejo family and went back to his initial longline tuna selling business.

In 2000, Mr. Rebollo surprisingly enough started a new tuna ranch off the town of Portman, Murcia, along with Pedro Sánchez, owner of Salazones y Pescados Sánchez, La Unión.



Location of the 375.000m² tuna ranch between Punta de la Chapa and Cabo Negrete owned by Caladeros del Mediterráneo, SL. (Fecha de publicación de la concesión en el BORM nº107, de 10 de mayo de 2001. Fecha de publicación de la Declaración de Impacto Ambiental Favorable en el BORM nº 265, de 15 de noviembre de 2000)

- A. 37° 34,310' N; 00° 49,551' W
- B. 37° 34,072' N; 00° 49,712' W
- C. 37° 34,264' N; 00° 50,160' W
- D. 37° 34,502' N; 00° 49,999' W



The financial start-up of this operation was assured by Korean Capital through "The Mediterranean Tuna Foundation" of which Mr. Chul Ho Kim was its President.

The Korean connection was nevertheless over, after the first season and Mr. Rebollo

teamed up with Spanish tuna purse seining group Norcomatun from L'ametlla de Mar, spearheaded by the Balfegó family.



Caladeros's vertical integration has proven to be the best possible solution to 2003 disastrous results due to a market price drop. The company currently owns and runs its fleet of tugboats and support/well vessels.

- The Remolcatuna, SL. fleet



The Remolcatuna fleet seen at the Port of Cartagena



Triton



Antonie



Boa Max



Viking



Dolfijn (Nassau)



Caladeros del Mediterráneo Tres.



Caladeros del Mediterráneo Cinco.

During the 2004 tuna fishing season, Caladeros del Mediterráneo, SL farm was able to transfer some 1.100 tonnes of live-tunas caught by the Norcomatun fleet.



La Frau Second (EATR)



Tio Gel Second (EAXZ)



El Janvier Giordano (FOCL)

Caladeros's farmed tuna will be marketed through Baleartuna, SL. (a 50-50% joint venture between Norcomatun and Mr. Rebollo).

assessment study was not made public for the past eighteen months by the Terres de L'Ebre environmental authorities."

According to Pere Vicent Balfegó, Captain on board the Tio Gel Second and member of Norcomatun's board of Directors, "Tuna will be slaughtered and sold to a variety of foreign buyers such as Sirius, Ocean Explorer, Shiroei and Traspac."



The Balfegó brothers

"Norcomatun has also started its own tuna ranching operation this year. We have transferred some 75 tonnes of live-tuna into our cages off L'Ametlla de Mar (Tarragona). We want to see how the fish reacts to this site and make sure we are ready for next years fishing season" says Pere Vicent Balfegó.

The tuna farm is located between:

- A. 40° 51' 575N., 00° 51' 515E.
- B. 40° 51' 600N., 00° 51' 075E.
- C. 40° 51' 950N., 00° 51' 175E.
- D. 40° 51' 915N., 00° 51' 615E.

According to Hernan Subirats, General Manager for Fishing and Maritime Affairs of the Catalanian Government, "the farm site permit has been issued" to Mollusc Castells, SL. (owned by the Balfegó family) after its environmental impact assessment study (Base sobre engreix de tonyines vermelles (Thunnus thynnus)", promogut per l'empresa Moluscos Castells, SL, i tramitat per la Direcció General de Pesca i Afers Marítims del Departament d'Agricultura, Ramaderia i Pesca, DOGC núm. 3829 Data 24.02.03 Pàg. 3884 NR: PIS 983-01) was cleared and accepted by the Catalan Environmental Authorities."



L'Ametlla de Mar, Tarragona

The final permits were granted to the Balfegos on March 21st 2004.

According to Subirats the farm will have eight Ø50m – 26m deep gravity-type cages, thus allowing a maximum stocking capacity of 1.200 tonnes of live-tuna.

Total investment of such farm could reach some €4 million.

The tuna-farming project is nevertheless facing stiff opposition from local environmentalist organisation L'Escrucó.

According to J.M. Olivella, President of L'Escrucó, "a formal complaint is to be filed at the Tortosa Prosecutor's Office based on the fact that the environmental impact

Turkish Tuna Delights...

Tuna ranching was introduced in Turkey by Niyazi Önen Chairman of the Dardanel Önentaş Food Industry Corporation and Gines Mendez España from Mazarrón, Spain, some five years ago.

Five Bluefin tuna farms (Two in the Eastern Mediterranean Sea and three in the Aegean Sea) were established in 2001.

Strong opposition from local fishermen communities in the Canakkale area forced some tuna ranchers from the Assos-Koruoba-Bademli-Bektas area to move their ranching operations from Ibrahim Amca's beach and Sokakagzi to the Gulf of Antalya and Ildırı where all tuna fish caught between Israel and Cyprus are now fed in four main offshore ranches.



Tuna cages being towed away from the Canakkale area.



Aerial view of Akua-Dem's tuna farm in the Assos-Canakkale area, before the cages were moved to the Izmir area.

In 2002 Turkish tuna farming maximum capacity by farm was:

Dardanel	1450-1600 tonnes
Akua-Dem	1250-1350 tonnes
Ak-tuna	1200-1500 tonnes
TSM	1000-1200 tonnes

Officially reported production by farm for that same year was:

Dardanel:	1405 tonnes
Akua-Dem	982 tonnes
Ak-tuna	635 tonnes
TSM	320 tonnes



Turkish tuna purse seiners

The fish were caught by Turkish purse seiners (28 vessels in 2002) in May and June and sold to Japan after being held 6 to 7 months. Farmed tuna export income that year, reached some \$US50 million.

In 2003 Bluefin from Turkish farms were also exported to the US market. Turkish farms utilized seventeen Ø50m cages and one 65mx35m rectangular cage.



Farmed tuna off-loading at Izmir Akua-Dem facilities.

Farmed tuna now constitutes 60% of Turkish exports to Japan.

This year's prospects also look good for Turkish tuna canners.

The EU 24% guarantee that restricted canned tuna fish imports from Turkey has been recently lifted.

Asked about this year's situation, during a recent interview with TurkishTime, Mr. Önen, said: "This year, the quota given to Turkey by ICCAT is 1.100 tonnes and this quota has been distributed amongst eight firms by the Ministry of Agriculture.

However, there are no definite criteria at this point. The Ministry should consider this matter in a long-term approach and should carry out inspections and distribution of quotas among firms in line with a policy. For instance, in the year 2000, in order to carry this on, the Ministry of Agriculture should refrain from behaving in a populist manner and should bring an order to this situation with the appropriate notifications and circulars."



Niyazi Önen, Chairman of the Board of Directors of Dardanel Önentaş Food Industry Corporation

"Turkey's official quota is around 1,100 tons. However, the farm quota approved by the Ministry of Agriculture is 9,000 tons and the amount that can be produced is twice this amount. Today, there is an investment in farms and boats that is significantly higher than what is necessary.

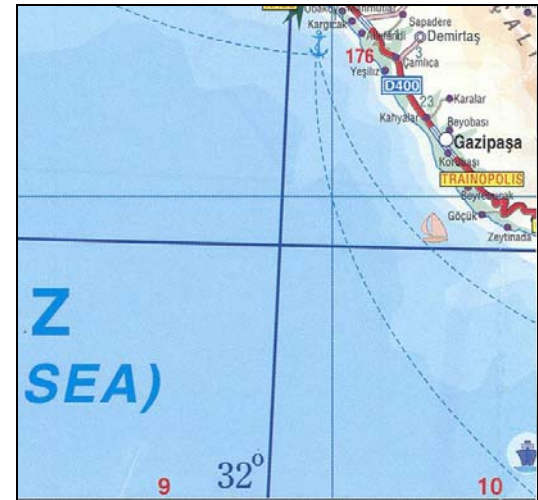
The state's incorrect applications have caused a highly efficient sector to become inefficient. Inspections of the Ministry of Agriculture are too weak; today much larger amounts of fishing is carried out compared to the quota.

These fish will be placed in farms, fed and when the time for exporting comes, they will say "these are national property, allow us to export them". Excessive exporting will be done and as a result, the ICCAT will apply sanctions to Turkey that could go as far as banning us from international trade. Therefore, the capacities of boats and farms should be restricted.

What the Ministry of Agriculture should do is to bring an order by setting the necessary criteria and publishing a notification. Production is about twice the amount permitted by the Ministry; therefore these should be set in order." added Mr. Önen

According to an independent source of information a new tuna farm located at: Gazipaşa, Antalya would have started operations this year.

The farm, operated by Baþaranlar Su Ürünlerý Yetiþtýrýcýlýðý Ltd. has its main office at Uður mumcu caddesi Kýzýltaþ apartmaný No: 3-4 Gazipaşa 07900 Antalya.



We have been unable to ascertain whether this farm is already operational or not.

Dardanel Su Ürünleri Üretim A.S.

Japanese Tohto Suisan Co. Ltd. and at the time cash strapped Turkish canned fish producer Dardanel Dis Ticaret A.S. sealed an alliance in 2001, whereby both companies incorporated Dardanel Su Ürünleri Üretim A.S. The Japanese company acquired a 36% stake in the Turkish firm.



According to Anatolia news agency, the joint venture alliance initially invested \$4.6 million on a 300 acres tuna fish farm in the southern town of Alanya, Gazipaşa-Antalya, on the Mediterranean coast. With an 840 tonnes production in 2001, the tuna farm company partly supplied Dardanel Ton and exported \$US11 million worth of products to Japan in its first year of operations.



With a 2002 production of 1.600 tonnes (1.405 reported) the figure increased to \$US28 million, as Dardanel Su Ürünleri Üretim A.S. benefited from the Japanese firm's sales and marketing power in Japan.



Yukiya Sekimoto, Director and President, Tohto Suisan Co., Ltd

Under the deal the Japanese company financed the tuna fish investment and contributed to Dardanel's capital expansion.



Niyazi Önen, Chairman of Dardanel Su Ürünleri Üretim A.Ş

The Turkish firm also reached an agreement with a U.S. fund to sell 28 percent of Dardanel Food Company shares and expand its capital by 400 percent. "The deal entailed a cash infusion of \$60 million," said Niyazi Önen, Chairman of Dardanel Su Ürünleri Üretim A.Ş at a news conference.

The company further borrowed \$40 million from the same fund for a term of 15 years.

At the time of its joint venture with Tohto Suisan, Dardanel had been suspended from trading on the Istanbul Stock Exchange (IMKB) for some time due to financial difficulties.

The company then managed to reach an agreement with seven banks to extend its debt maturing in March 2001 for a period of six months.

Dardanel's joint venture with Tohto Suisan was implemented in 2002 with the setting-up of another tuna ranching operation at Rizokarpaso, northern coast of Cyprus.

Tou Yialou Famagusta Bay, and has a maximum annual production capacity of 3.000 tonnes and an export capacity of \$US100 million.

The tuna farm is located between:

35° 25' 04N., 34° 09' 13E.
35° 25' 04N., 34° 10' 33E.
35° 24' 24N., 34° 10' 33E.
35° 24' 24N., 34° 09' 13E.

The tuna farm, under the name 'Dardanel Cyprus', started production in 2002 with an initial capacity of 1,000 tons, reported daily newspaper Birlik. The chairman of the company, Niyazi Önen, said that due to teething problems, starting production would only reach 200 tonnes but that he aimed to increase capacity to 3,000 tonnes in the future.



Musashi Seto, representing the Japanese company, said the prevalent view in Japan was of economic and political instability in the occupied north, which was why nobody wanted to invest there.

He expressed the view that this project brought technology and investment money to northern Cyprus, hoping that with the help of the regime it would be successful.

Meanwhile, according to a source in the north, since the farm was set up in the occupied north, the company avoids any obligations to international or Turkish fishing quotas.

The Turkish Cypriot Chamber of Commerce has teamed up with hoteliers in the north and



According to Murashi Seto, Tohto Suisan representative, Dardanel Cyprus Ltd. 500 acres tuna ranch, was relocated at Koma

other organisations to take the Turkish Cypriot authorities to court for giving the company a permit.

The proceedings have already begun, according to the source.



Niyazi Önen, Chairman of Dardanel Su Ürünleri Üretim A.Ş and President Rauf Denktaş of the Turkish Republic of Northern Cyprus (TRNC)

Asked about the tuna farm operating in the occupied north, Cyprus Greens deputy Perdikiş said: "We need to make sure our farms are complying with the regulations before talking about a farm in the occupied north".

"We are the firm that introduced tuna farming to Turkey and to the Ministry of Agriculture. We have made a lot of investment in this area. We partially process the fish. However, for us to be able to fully process it and create an added value, we have to invest more and for this to take place, we have to be able to see ahead. There is great ambiguity in the sector today and our investments will increase when these become clearer. This is, as I mentioned earlier, an issue that will be realized with long-term policies through precautions that the Ministry of Agriculture will take on the issue. When these conditions are met, the added value of tuna fish will augment by 50%" says Niyazi Önen

Akua-Dem

Akua-Dem is just over three years old and growing. The company is owned by 8 shareholders, two of which are Turkey's biggest fishing companies.

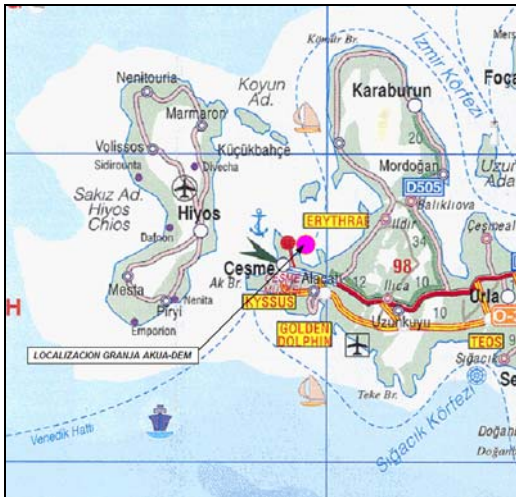
- Öztürk Şerefoğlu
- Abdullah Denizer
- Ahmet Menekşe
- Nedim Ombar
- Hasan Şerefoğlu
- İbrahim Aksoy
- Engin Gürdeniz
- Abidin Gürdeniz

Akua-Dem main areas of operation are Bluefin tuna ranching for the Japanese market. Its 2003 turnover exceeded \$US7,5 million, with a declared tuna ranch maximum capacity of 1.350 tonnes and 60 employees running the show.



Nedim Ombar, Akua-Dem's President & General Manager

Akua-Dem's first tuna-ranch site in the Dardanel area in the North Aegean Sea had to be removed due to fierce opposition by local fishermen and conservationist organisations.



The company now owns a site, which has been fully licensed by the Turkish Ministry of Agriculture.

The site is located about 2.5 km offshore in Izmir Cesme area (Sivriceburnu, Bektas, Ayvacik) in the middle of the Aegean sea and has a final capacity of 1.350 tonnes translating into a catch capacity of about 1.100 tonnes.

The catch season for Akua-Dem is in May-June so the fish is in place in the cages from the end of June to early July.



Akua-Dem's Farm Manager, Hasan Şerefoğlu

According to Akua-Dem's President, "during the last season the fish weighed on average 45-50 kg. when they arrived at the site. This included some fish that were 15-20 kg and others that were 350-400 kg. Six months later when the fish were ready to be harvested the average weight was 65 kg. However, weight is not the factor that determines when the fish should be harvested. Fat content and colour are the more important criteria, as any fish above 25 kg is considered big enough to be harvested."

"The fish are fed on a diet of mackerel, herring and squid. The material is whole frozen fish primarily from Denmark, Holland as well as some small quantities from the US. The quality of the feed is almost as good as that for human consumption. The tuna are not given any synthetic feed as this will affect the quality of the meat. However, in the last phase of the feeding the tuna are fed with squid that has been stuffed with shrimp shells and heads from shrimp processing factories. This imparts a reddish colour to the meat, which is highly desired on the Japanese market. The flesh of tuna which is not fed this diet of shrimp shells and heads remains white and is not as popular amongst the Japanese." says Mr. Ambar

"Once the Bluefin tuna have achieved the desired fat content, they are harvested. A special harvesting net is dropped in to the cage and divers indicate how many fish are in the net. The net is lifted and the fish are brought to a harvesting boat where they are slaughtered by spiking the brain and the gills and guts are removed. About 25 tonnes are harvested a day. The fish are cleaned and then sent to a special processing vessel where they are frozen down to -60 degrees. The frozen fish are sold directly to Japanese buyers. Last year the company's entire production was purchased by Nissho Iwai one of the biggest Japanese buyers of Bluefin tuna." through its Turkish subsidiary Nissho Iwai Corp. Merk. Tokyo Ankara Merk.ve Ist.Şubeleri



NOBUAKI ITO, President, Foods & Consumer Products Company, Nissho Iwai Corporation

"The presence of fish cages tends to attract predators, but this has not been an issue for

Akua Dem. The Aegean Sea is relatively free of predators and neither ourselves nor any of the other farms in the area that are farming seabass and seabream have been bothered by predators” says Akua-Dem’s Farm Manager, Hasan Şerefoğlu.

The company is also a business partner with China’s Chengdu Tongwei Group.



Liu Hanyuan, President & Board Chairman of Tongwei Group Co., Ltd.

China’s Chengdu Tongwei Group is a large-scale private technology enterprise. It mainly deals in feed industry, while rapidly entering IT, biologic engineering, international trade, pet food, construction & real estate, mega-agriculture development, etc... Under Tongwei Co., Ltd. held by the group are more than thirty subsidiaries with annual output of over 3 million tons. Tongwei Co., Ltd. is the largest aquatic feed production enterprise as well as the primary one for poultry and livestock production.

At present, the group has invested to set up Sino-British Joint-Venture Chengdu Care Pet Food Co., Ltd., Chengdu Tongwei Fish Co., Ltd., Chengdu Xinrui Technology Development Co., Ltd., Sichuan Westar Software Co., Ltd., Beijing Haikelinggao Electronic Technology Co., Ltd., Sichuan Tonly Construction Project Co., Ltd., Sichuan T&G Real Estate Development Co., Ltd., China Venture Capital Co., Ltd., etc., besides Tongwei Co., Ltd..

Notes: Claims that Akua-Dem has bought 1.000 tons of 2004 Korean quota have not been substantiated. According to company’s sources, Akua Dem claims to have 400 allocated tons of the ICCAT 1.100 tons allocated to Turkey. Since Turkey has no ICCAT quota it should be understood that those 400 tonnes are to be registered under ICCAT’s quota to “Others”.

TSM Deniz Urunleri As.



The company founded by actual CEO, Mr. Tuncay Sagun on 21/03/2002, specialises in aqua farming and cultivation of Bluefin tuna, export and import of marine products under Group SAGUN.



Tuncay Sagun, Chairman of TSM Deniz-Urunleri As.

The 1.800 tonnes maximum capacity tuna ranch is located at: Kemer, Havuz, Antalia



“Our aim is to deliver second to none service to our valued customers for whom we dedicated our selves in all ways on the entire process, from catch and cultivation till the export. We do spend utmost effort in order to provide reliable service and reach the customer satisfaction in return” says General Manager Adem Colak.



TS1: a ship with length 45m made of sheet iron. Berths 20 persons. Crane for 20tons, tank with 4 cooler systems and freezer. Also the generator and ice machine (providing ice from sea water)



TS2: length 32m made of sheet iron. Feeding boat.

TSM’s technical staff is made of six experienced fish cultivation & processing

seafood engineers, one marine biologist, eighteen divers, three skippers and twelve seamen along with thirty seven other harvesting, cutting, warehouse and administrative executives personnel.

TSM runs its own fleet of vessels.



TS3: length 14m made of sheet iron. Serving boat.

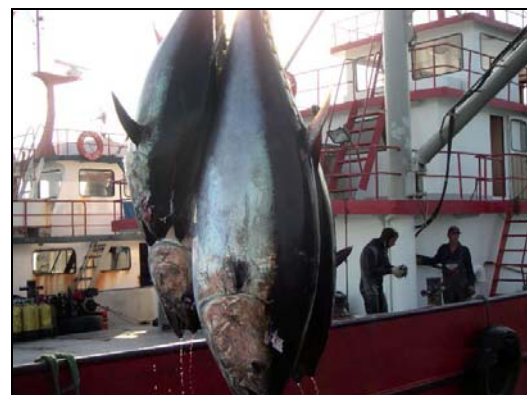


TS4: powerful boat serving as trailer in cage transfer.

TSM also operates a 6.500m² -25°C to -60°C super cooler-freezer facility located on a 16.000m² industrial estate at Büyük Ortadoğu Antalya Yat limanı.



TSM runs a fleet of trucks with thermo-king systems, used both for export purposes and for inland baitfish provision.



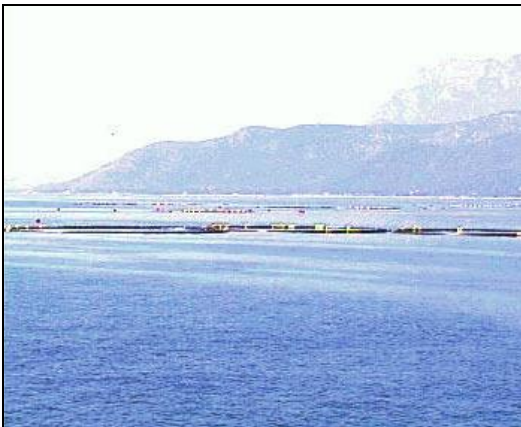
The company enjoys a logistic advantage thanks to its onshore facilities location:

- 5 miles away from the tuna ranch cages.
- 30 minutes away from Antalya airport.
- Being aside of Antalya's seaport facilitates frozen baitfish imports.

This enables TSM to harvest, chill, transport, pack and export fresh tunas worldwide on a client-need basis.



TSM cages are moored on a 120.000m² sea area.



TSM twelve Ø50m cages floating rings are made of Ø500mm HDPE pipe. The company also uses smaller harvesting pools.

Bluefin tunas caught during the May-June fishing season in Turkish waters are fed at TSM for 4-5 months.

"We do feed the tunas, which we put in the cages on mid-may through end may, with bait fishes with high fat ratio like mackerel, herring, sardine and squid. We spend utmost effort while choosing the baitfish; we do require all corresponding reports from providers thus the baitfish that we use fit for human consumption" says General Manager Adem Colak.

2004 farmed tuna production at TSM is believed to amount to over 1.000 tonnes, all of which will be exported to France and Japan through TSM's Japanese partner Torei-Toyo Reizo, 80,82% owned by Mitsubishi Corp.

Croatia

Back to origins

A very small part of the world fish business is done in one of the most promising post-war phenomena in independent Croatia, thanks to Croatian returnees from Port Lincoln, SA, Australia. Tuna farming is the most successful investment in Croatia as the domestically fattened tuna, the best-known Croatian export product, has become world-famous.

The fattening of Bluefin tuna started in Croatia in 1996. In 2002, there were 10 farms in place in the counties of Zadar, Sibenik and Split, worth 65 floating cages in which captured juvenile Bluefin, mostly in May and June, were fattened up to commercial size and weight.

The fish are extremely small, some below the ICCAT minimum of 6,4kgs. Croatian tuna weights vary from 20 to 80 kgs. According to estimates from Japanese trade data, 3.910 tonnes of Bluefin tuna were introduced into Croatian farms in 2002 (a total 2.628 according to Croatian sources).

Though in the first 4 years of farming all live tuna was supplied by the local purse seine tuna fleet, from 2001 onwards farms also rely on the activity of foreign fleets, namely Italian, Tunisian, French and Spanish.

Unlike the other farming sites in the Mediterranean, the duration of the fattening season in Croatia can last up to 20 months, due to the very small size of tuna entered into the cages. As reported to GFCM and ICCAT, part of feed-fish used by farms consists of small pelagic fish locally harvested in the Adriatic Sea.

Some tuna farms benefit from the full-time activity of owned or chartered purse seiners targeting small pelagic fish. One of the owners of Kali Tuna declared that the amount of anchovy needed for one year amounted to 4.500 tonnes that year. All the production is shipped to Japan (40% of it frozen).

Annual production averaged about 2,500 tonnes from 1999 to 2002.

Production in 2003 rose to over 3.500 tonnes.

Second to none, Australian tuna farmer Dinko Lukin is Croatia's biggest operator in terms of fishing fleets, tuna ranches, and stocked live-tuna.



Dinko Lukin

Dinko Lukin, like many local Port Lincoln fishermen, is of Croatian origin.

In 1993 he developed the modern "purse seine" system that enables the tuna to be caught and transferred into underwater cages with a single net.

He now owns Dinko Tuna Farmers Pty Ltd and Lukin Fisheries Pty Ltd in Australia.

Along with Croatian Tankerkomerc d.d Group of companies, Lukin is a major shareholder in three of Croatia's major tuna farms:

- Adriatic Tuna, ddo;
- Brac Tuna, doo;
- Marituna, doo.

Adriatic Tuna, d.d.o.

Tuna farm. NW from Iž Island



Major shareholders* are:

- Tankerkomerc d.d. Zadar
- Dinko Lukin (Australia)

Key Management:

- Željko Zubčić
- Mate Lukin
- Milivoj Braslov.

Adriatic Tuna, ddo, operates its own purse seine fleet:



- BOZO
- CENTAR B
- DINKO
- MOLO
- DENIS (9A3815)

* (Recent changes in ownership have not been made official yet.)

Brac Tuna, d.o.o.

Tuna farm at Smrka Bay, Brač Island.



Major shareholders are:

- Tankerkomerc d.d. Zadar
- Dinko Lukin (Australia).

Mladen Ilić is Brac Tuna doo General Manager



Brac Tuna, doo, operates its own purse seine fleet:

- SKUŠA (9A3059)
- JADRAN I (9A3062)

Marituna, d.o.o.

Tuna farm at Luka Island, Vela-grska. NW from Zverinac Island



Major shareholders are:

- Tankerkomerc d.d. Zadar
- Dinko Lukin (Australia)

Miro Mirković is Marituna, doo's General Manager.

Marituna counts some 60 employees.



Kali Tuna, d.d.o.

In 1995, several well-know Kali fishermen from the Island of Ugljan, backed by Japanese capital, decided to invest their money made abroad into tuna farming.

Tony's Tuna International Pty Ltd., the second largest farmer of Southern Bluefin Tuna in Australia was also a part of the picture.



Tony Santic

With the start-up capital of two million Australian dollars and another five million spend on the purchase of cages, fishing boats and other infrastructure, Tony Santic and Dragan Vidov started up Kali Tuna's first tuna ranch at the Island of Dugi Otok.



A second farm has been projected: Tony Santic's Tony's tuna International, (Australia) and Dragan Vidov are heavily investing on a new site in the Island of Ugljan.

According to officials from the Croat Government, "This farm is not active yet" and presumably won't be operational this year due to poor catches by the Croatian tuna purse seiner fleet. Dragan Vidov, the co-owner of the Kali-tuna tuna farms is nevertheless happy with past years results and expects to farm some 1.000 tons during 2004, all of it to be exported to the Japanese market.



Kali-tuna Company surely expects to go back to its 2000 to 2002 profit figures after disastrous financial results in 2003, mainly due to over-fishing, over-stocking and saturation of the Japanese market.



The Kali-Tuna operation runs its own tuna fishing fleet through a subsidiary company by the name of Hrvatski Uspjeh d.o.o., (Croatian Success) depicting how much success there has been in the business.



- SIN KALI
- FULIJA (9A6440)
- HRVATSKI USPJEH (9A4675)
- KALI DVA (9A3692)
- OŠLJAK DVA (9A7327)
- LUBIN (9A3269)



Jadran Tuna, d.d.o.

Mišo Mandić, a returnee, was the first Croatian operator to realise that tuna farming could be a pot of gold. He was the first to start exporting tuna to the Japanese market some ten years ago.

He now co-owns the Jadran-tuna farming company near the island of Pašman, made of six cages that can hold, according to the company, some 250 tons of live-tuna.



The owners of Jadran-tuna proudly point out that they had set-up the business by putting a lot of their own work into it and using domestic materials. The success achieved by domestic tuna-farmer was nevertheless, heavily subsidised by the state.



SPARTAK and JADRAN DVA (9A3025)

Jadran Tuna Japanese customers have accepted the company's product so well that it paved the way for the opening of a second Jadran Tuna ranch South from Vrgada Island and NW from Murvenjak Island. Some one hundred people are employed in the two tuna-farms. Jadran Tuna, d.d.o. directly operates two tuna purse seiners:

It also buys live tuna from the following Croatian tuna purse seiners:

- BOZO VITLOV (683) operated by: NEKTON
- UŠATA (3606) operated by: DRAGISLAV KUSTURA
- VOLUJA (9A3035) operated by: DRAGISLAV KUSTURA
- MINGO (9A8092) operated by: DRIC d.o.o.
- FORCA operated by: FORCA COMPANY
- JASTREB (731) operated by: KOLEGA COMMERCE d.o.o.
- TRP (732) operated by: KOLEGA COMMERCE d.o.o.
- MARINERO (119A1346) operated by: PROSPERITY d.o.o.
- OPAT operated by: R.O. A. MUDRONJA
- MORMORA operated by: R.O. MORMORA
- ANNA (9A3023) operated by: RADICA ZARKO
- EVA operated by: TESI TUNOLOV d.o.o.
- NAPREDAK (9A4838) operated by: TESI TUNOLOV d.o.o.
- PREKO (3184) operated by: TOMISLAV ARKOVIC
- TULJAN (9A5784) operated by: TULJAN d.o.o.
- GRUG (9A6935) operated by: UGOR d.o.o.
- VIRGINIA I (9A3022) operated by: VLADAN BOJIC

Sardina, d.d.



As part of a Croatian fishing family, Sardina, d.d. was established as a subsidiary of Sardina Postira (1906)



Located in the Croatian region of Dalmatia, on the Island of Brač, near Diocletian town Split, Sardina d.d owns a tuna ranch in the Island of Brač (Mala Grška Bay).



Due to its unique geographical position, Sardina, d.d. owned by Niko Bezmalinović, enjoys an ideal environment for tuna farming.

The Mala Grška Bay tuna farm is managed by Mislav Bezmalinovic. The entire operation is up to HACCP and ISO 9001:2000 standards and its fattened tunas are generally rated at the highest grade, perfect for sashimi due to its large size, colour (deep, translucent red colour), texture (firm and fresh looking) and high fat content.

The farming production is based on self-caught tuna and bait thanks to the

company's fishing fleet of seven purse seine tuna vessels.



- HLAP(9A5712)



- DAVORIN (9A2258)



- JADRAN (9A3062)



- PALAMIDA & HLAP



- PREDVODNIK



- RUDA
- NEMIRNA (9A2777) (Picture not available)

Italy

The Sicilian Tuna-Connection

In late 1990's two experimental farms were developed in Italy and in 2001 a commercial operation was commenced in Trapani on the Tyrrhenian coast with 400 tonnes of medium-size Bluefin tunas.

Pescazzurra, s.r.l.

Since then, other operators have initiated tuna farming in Sicily. This has been the case for Pescazzurra S.r.l. (Via Campo delle Vettovaglie Mercato Ittico, 98100 Messina Tel.090/710134 Fax 090/715799)



The company from Messina has implemented a tuna ranch in the Northeastern coast of Sicily, off the coast of Giammoro-Milazzo (ME).



Giammoro-Milazzo

There is no available recorded official information about Pescazzurra's tuna ranching activities during 2003, though unconfirmed sectorial reports do account some 400 tonnes in 2003 and some 600 tonnes in 2004.

The farm is located between:

36°40'58" N - 014°43'18" E;
36°40'30" N - 014°43'35" E;
36°40'06" N - 014°42'21" E;
36°40'36" N - 014°42'07" E.



According to Italian Coast Guard sources of information, Tuna Fish S.p.A. has paid some €330.065 to the Sicily Region, in terms of public domain occupancy fee.

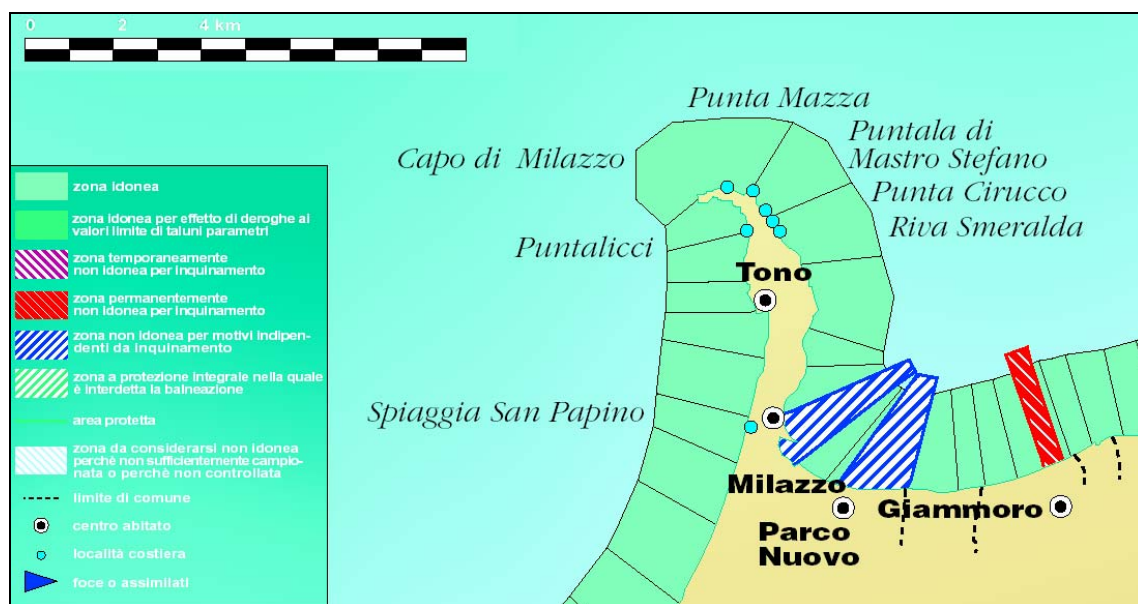
It is still unclear who is behind this operation and if Japanese or Korean concerns are involved in some sort of joint venture with Tuna Fish S.p.A. Sicilian owners.



Every single attempt, on our behalf, to ascertain the real ownership or share-holding composition of the company has been confronted with the typically Sicilian "omerta" style...



Since new ICCAT and EU anti-IUU regulations will be implemented this year, it will be interesting to know how Tuna Fish S.p.A. will be finally logged into the EU tuna farms register...



The tuna farm is located between:

38°15'35".0 N - 015°25'32".5 E;
38°15'12".1 N - 015°25'32".5 E;
38°15'11".5 N - 015°25'53".5 E;
38°15'20".0 N - 015°25'47".0 E.

One would think that tuna farmers across the world would look for clean waters and an eco-friendly coastal environment before even thinking of mooring a tuna ranch.

Pescazzurra, s.r.l. must be the exception to such rule...

The ranch is located in front of an industrial area where one can find an oil refinery, a thermoelectric power plant, a steel plant and as Dott.ssa Alessandra Reale from Gaia Soc. Coop. a r.l kindly puts it: "other industrial and artisan realities"...

Gaia Soc. Coop. A.r.l. are the authors of the environmental impact assessment study for such tuna farm.

In 2002, its first year of operations, the farm managed to export some 4.000 tunas (80 tonnes) to Japan and Korea. The farm, at the time, had three Ø50m cages moored in 50m deep waters.

Tuna Fish S.p.a.

On the southern coast of Sicily off the coast of Marina di Modica, 3,7 nautical miles from Punta Regilione, Pozzallo, lies a 2.000.000m² tuna farm operated by Tuna Fish S.p.A., a company from Palermo.

The operation consists of five Ø50m Corelsa type gravity pens, thus allowing a maximum capacity of over 1.000 tonnes of live stocked tunas.



Malta

Right in the Middle

Malta loads its cages in May-July and markets the fish from October to January.

In 2000 the size of the fish ranged from 80 to 250 kg.

In 2001 about 1,200 mt were exported with size ranging from 50 to 620 kg.

2003 was a record year with an overall production of over 3,500 tonnes.

During the peak month of May 2004 the approximate size of individual fish landed has dropped drastically from 300 kilos to 180-200 kilos.



Parliamentary Secretary responsible for Agriculture and Fisheries Dr. Francis Agius visiting a Tuna Farm 20 minutes off M'Xlokk bay on the closure of the 2004 Tuna season.

According to Maltese official sources of information, the surface long-line Bluefin tuna fishery in 2004 landed in excess of 250 metric tons, a value which is similar to that of 2003.

As usual during the 16 week fishing season, which extends from April to July, the peak month for catches was May during which more than 68% of the total catches were obtained.

The average value per kilo for this species was on average 17% less than that of 2003, obtaining the highest value of Lm2.25 per kilo during the month of May.

However there was an increase in exports of almost 9% in terms of weight during 2004 over that exported in 2003.

About 90% of the total tuna landings were exported.

Moreover, the value for tuna in July was extremely low this year (Lm1.50 per kilo) leading fishermen to move to the swordfish fishery earlier than usual since the latter was obtaining a guaranteed minimum price of Lm3.05 per kilo.

According to Charles Azzopardi, of Azzopardi Fisheries in St Paul's Bay, Malta's tuna landings from long lines are about five per cent higher this year over 2003.

"In spite of this bonanza - when one takes into account that there was a record catch of blue fin tuna last year - but the catch using purse seiners for the replenishment of tuna pens has dropped by 60 per cent."

Asked what could have caused this drop, Mr. Azzopardi put it down to cooler seas. He said that *"at the start of the season, which extends between May 1 and the first week of July, the sea temperature was around 17°C. To rise further to the surface, so that they may be caught by purse seiners, tuna need a temperature of 21°C."*

The low sea temperature also affected the movement of sardines and anchovies on which tuna feed.

"This year the fishermen equipped with long lines landed 1,650 heads of tuna, which amount to about 247,500 kilos. Between 85-90 per cent of these catches were exported to Japan by Azzopardi Fisheries," he added.

Mr. Azzopardi said that the smaller catches would not necessarily mean great financial losses because the price the fish fetches depends very much on demand and supply.

"For example, last year we had to cut the selling prices substantially because of the abundant catch."

These informations nevertheless seem to be in open contradiction with latest developments in the island.

The Malta Environment and Planning Authority (MEPA) granted a full development permit to double the extension of a tuna-penning site and operations at il-Hofra z-Zghira, in Delimara.

The MEPA board's 9-2 vote echoed Planning Directorate's environmental planner's recommendation to approve the application.

The application was for the mooring of a row of four cages adjacent to the existing four. It was approved with nine votes in favour and two against.

The new row of cages will replace a row of eight sea bream cages, which will now be relocated and changed in format to double their capacity.

The proposed tuna cage extension will raise the capacity of the tuna farm to 1,200 tons.

The Planning Directorate said that it received a number of complaints to the proposal. It said that the local councils of Marsaxlokk and Marsaskala expressed their concern about the effects of fish farms in their localities.



Malta's MEPA approves tuna penning extension at il-Hofra z-Zghira site, in Delimara.

Marsaxlokk local council is objecting to the proposal since the area where the extension is proposed is used for fishing by local fisherman.

Marsascala council said the fish farm was polluting the seabed of the bays of Marsascala when the wind blew in their direction. Fishermen were finding fewer seabed fish since the tuna cages had been put in place and swimmers complained about the farm attracting large predatory fish into the bays.

Mepa also received a petition, signed by 10 people, who objected to the proposal saying the health of swimmers and divers who frequented popular bays in the vicinity would be negatively affected since more fish would increase the waste generated by the farm, affecting the water quality.

The Malta Maritime Authority and the Fisheries and Conservation Control Division did not object to the project.

The Planning Directorate pointed out that with two years of monitoring results are at

hand and results have shown that the running of the farm had not led to a severe adverse impact on the seabed.

The Planning Directorate said that in view of the experience gained during the past years of fish farming operations round the island, it was confident that if all the necessary precautions are taken with improved knowledge and technology, the proposal should be favourably considered.

However, the development permission is subject to several conditions.

Mainly, the deployment should follow a phasing schedule with only eight cages to be deployed at first, stocked with tuna up to a limit of 1,200 metric tonnes and an additional four cages will be subject to satisfactory environmental results based on a full year's of monitoring.

It said that since the proposed development is located within the Delimara candidate Marina Conservation Area, the applicant shall submit the annual funding of Lm5,000 for the duration of the operation of the farm.

Malta conservationist organisations and local fishermen communities are hoping that MEPA's eco-friendly aquaculture policies will be swiftly implemented.



General view of the dead fish at il-Hofriet, July 23rd

According to conservation biologist Adriana Vella and members of the Biological Conservation Research Foundation, a half a kilometre stretch of sea off Il-Hofriet (between Delimara and St Thomas Bay) was filled with floating dead fish towards the end of this year's tuna fishing season.



A close up of the dead fish at il-Hofriet, July 23rd

They reported the sighting during scientific marine survey work around the Maltese Islands. *"While the sight of these thousands of dead fish was revolting, their stench was even worse,"* Ms Vella said.

A similar incident at St Thomas Bay was described in Parliament by Labour MP George Vella, who said the scene was disgusting and demanded an explanation from the environment minister.



Bluefin tuna carcass in St. Thomas Bay

"These dead fish may be agents of disease that may spread to different marine organisms with wide reaching impacts on our marine ecosystems and resources. For this reason it is hoped that such a finding will be investigated by the relevant authorities."

MP George Vella is worried by the lack of inspections and effective implementation of

measures to protect Malta's marine environment.

The spread of organic and smelly substances out of the tuna pens for kilometres around, depending on sea current directions, as well as dead and decaying Bluefin tuna strandings along the Maltese coasts have been reported in the past.

Considering all of this, "one wondered if simply moving all aquaculture activities to one corner of the islands would solve these problems and whether environmental impact assessments and the Malta Environment and Planning Authority had ever taken into account the wider side-effects these developments would have on marine life and the people's quality of life," MP Vella said.

George Pullicino, Malta's environment minister said MEPA had not received any reports of a quantity of dead fish as described by Dr George Vella and an investigation had revealed no traces of dead fish at St Thomas Bay.

Mr Pullicino told Parliament that MEPA had not received any reports of a quantity of dead fish having been washed up at St Thomas Bay on, as Dr Vella had said.

Mr Pullicino also stressed that it was important that such instances were reported immediately on the MEPA emergency numbers. Mr Pullicino said the activities of the fish farms, blamed by Dr Vella for the dead fish, were regularly monitored by a company, which was awarded a tender by MEPA. The company was paid for through funds from the fish farm operators as part of their licence conditions. Mr Pullicino said that fish used as feed at the fish farms sank and the fact that the fish noted by Dr Vella were floating indicated they have been fish killed through fishing using explosives near the sewage outfall.



George Pullicino, Malta's environment minister

The minister said fish farms were currently sited some one kilometre off the coast, but it was the government's intention to set up an aquaculture zone some six kilometres off the coast in stronger currents, which would ensure that any waste was washed away from the coast. In this way the coastal environment would be improved. Malta's tuna farms are all currently more than one kilometre away from the coast and the government's proposal for an aquaculture zone six kilometres off the coast would move them further away placing them in currents which would keep them cleaner and improve the quality of the environment and the coast. Minister Pullicino's view does not seem to satisfy the local business and fishing communities.

Business people and fishermen from Marsascala have joined forces to protest against the setting up of the zone for fish farms about six kilometres off Xrobb I-Ghagin, limits of Marsaxlokk. The Ghaqda Bajja ta' San Tumas has also joined the lobby group.

The pressure group is claiming that a conglomeration of fish farms in the southeast of the island would be detrimental to residents and tourists as well as to shop owners and other commercial outlets.

Reuben Buttigieg, president of Assocjazzjoni tal-Hwienet ta' Wied il-Ghajn, has said that the fish farm zone could lead to the contamination of the sea to such a degree that diving tourists, other visitors and summer residents would be put off.

"Polluting the sea around Marsascala and San Tumas would mar the quality of life of residents and tourists and take a heavy toll on the income of most, if not all, of the businesses in the area," Mr Buttigieg noted. He added that fishermen were against the project because the zone being proposed partly juttet onto is-Sikka tan-Nofs, which is a good fishing site.

The application for full development permission was made to the Malta Environment and Planning Authority by Anthony Pirota, director of fisheries, on behalf of the Malta Centre for Fisheries, a government entity.

The consultation process was concluded on August 9. The Assocjazzjoni tal-Hwienet ta' Wied il-Ghajn and Ghaqda Bahhara u Sajjieda u Dilettanti ta' Wied il-Ghajn, which is also part of the lobby group, had registered their objection to the application, Mr Buttigieg said. The next step in the application process will be the commissioning of an environmental impact assessment.

According to the Mepa website, the application is for the development of an aquaculture zone southeast of Malta. The application was received by Mepa on January 7 and validated on August 11. The target date for the approval or otherwise of the full development application by Mepa is February 5.

Whatever the outcome of such controversy, it is clear that Malta's fresh and frozen farmed tuna exports to Japan, could yet take another price blow, should the three Maltese tuna-ranch operators (Azzopardi, Ellul and Caruana) fail to prove that tuna penning, fattening and harvesting procedures meet the required sanitary and hygiene standards in Japan.



Italian tuna purse-seiner fleet at the Gran Harbour

The major issue the Maltese Government will have to solve, now the country is a EU member state, is that of an ICCAT tuna quota in accordance with a future Maltese flagged tuna-purse-seining fleet. So far, Malta is being used by purse seiners from Italy, France, Spain, Greece and Croatia as a "diving-board" that allows them to operate in adjacent Tunisian and Libyan waters. 100% of framed tuna in Malta comes from these fleets.



Italian tuna purse-seiner fleet at the Gran Harbour

"Maltese fishermen have good reason to be angry, Sicilian fishermen are indiscriminate and are over-fishing in our waters and on many occasions they have deliberately damaged fishing sites for local fishermen" says a Malta-based columnist, as he recalls the "Tuna Fiasco" three years ago.

"What we saw at that time was a Government, swooning and guzzling at the feet of the Italians – which was one good reason to say enough is enough. What took place on the high seas and later on, on land was a disgrace not for the fishermen but for the government", says a local fisherman.



Tuna purse-seiners of Gran Harbour, during the "Tuna Fiasco"

The re-flagging of foreign purse seiners could be an initial solution to the lack of proper financial funding by local operators.



French built Cisberlande III was purchased and re-flagged by Tripoli-based Nour Al-Haiat Fishing Co. The purse-seiner appears on the ICCAT list of vessels under EU-Malta and Libyan Flag. Maltese operator is Bugeja Raymond, F/H 1. tower Road. Marsaxlokk.

Some French, Italian, Tunisian and Libyan fishing companies would be more than glad to go into partnership with Maltese fishing concerns as it is the case for other new EU-member states such as Cyprus.

Maltese re-flagged purse seiners could benefit from Maltese ICCAT tuna quota;

The issue will certainly be closely monitored by newly appointed EU Fisheries & Maritime Affairs Commissioner, former Malta's Minister for Foreign Affairs Dr. Joe Borg.

AJD Tuna Limited

AJD's first tuna cages in Malta were sold to Charles Azzopardi and his Korean partner, Lee Gang Pil, by Tuna Farms of Mediterraneo from Spain some five years ago.



Charles Azzopardi, President of Azzopardi Fisheries

Mr. Lee, a former business partner of Joaquin Albaladejo from Grupo Antalba in San Javier, was also involved in a tuna madrague set-net in Morocco.



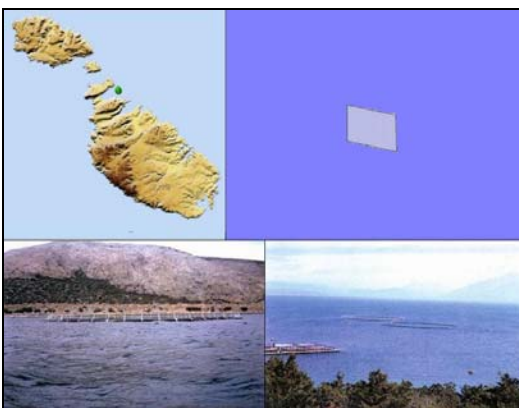
Partial view of madrague operated by Jeong Pil Co. in Morocco.

During the year 2000, the four Ø50m cage farm located at is-Sikka I-Bajda off St. Paul's Bay yielded around 330 tons of Bluefin tuna for export.

The project exported its total production to Asian markets. The fish caught varied in size between 50 and 300 kg with the majority being in the 150–200 kg range.

For the purposes of quota allocations, the fish were assigned to the country of registration of the fishing vessel. The fish were then procured with an ICCAT certificate by the flag state of the encircled vessels. On slaughter, the Department issued an ICCAT Re Export Licence.

Today, AJD Tuna Ltd. still runs the Sikka Il-Bajja ta' San Pawl il-Bahar eight-cage tuna-ranch operation, with a maximum capacity of 1.200 tonnes of live tuna.



The farm is located between:

- A 35° 58'. 57N; 14° 24'.97E
- B 35° 58'. 79N; 14° 24'.95E
- C 35° 58'. 64N; 14° 25'.70E
- D 35° 58'. 42N; 14° 25'.71E

The shareholding structure of AJD is splitted between:

- Jeong Pil Co., Ltd. (Korea)
- Azzopardi Fisheries (Malta)
- Dohsui Co. Ltd., (Japan)



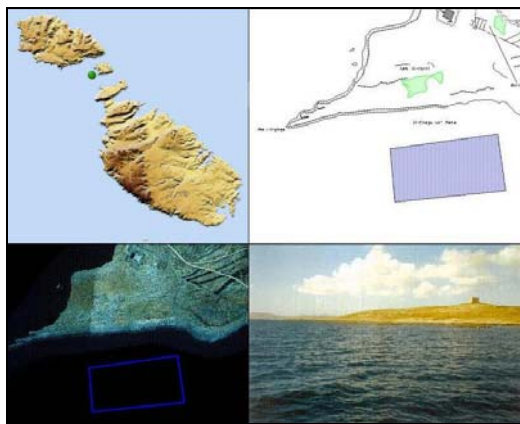
Youzou Takano, Chairman of Dohsui Co., Ltd

Azzopardi Fisheries have contracts with Maltese fishermen to buy most of their catch, but most of the tuna for their two farms (one between Comino and Mtarfa and the other near Sikka I-Bajda, off Qawra) are caught by Italian vessels.



AJD Tuna farm off Qawra, Sikka I-Bajda

A.J.D. Tuna has been a Lufthansa Cargo customer for many years as part of its fresh-farmed tuna is shipped by airfreight, using Lufthansa services to Tokyo via Frankfurt. The season normally concludes on Christmas eve, with the Yuletide period seeing over 200 tons of fresh tuna exported to Japan, most of them under the Fresh/td service package.



AJD's Comino Channel tuna farm location map



AJD's Comino Channel tuna farm



Aerial view of Comino Island

Lufthansa operated in the past the bigger Airbus 300-600 aircraft to Malta, to be able to take 12 tonnes of tuna on each flight.

Surely the rise in oil prices and the downfall of the fresh tuna market in Tokyo this year, will force AJD to consider freezing most of its production on board –60°C reefer vessels.



Preparing a tuna Harvest at AJD's

Last years fish losses at AJD Comino Channel farm (400 tonnes of tunas were lost due to severe weather conditions) coupled with the highest live tuna prices ever (€9,28/kilo of transferred tuna at sea) and the lowest average price ever at Tsukiji Market; will surely force AJD to cut short on production costs.



Harvesting at AJD's Comino Channel tuna farm. Note Japanese tuna reefer in the back.

Quicker reefer-frozen tuna surely doesn't match the quality standards for fresh/chilled tuna. On the other hand, it allows AJD to cash-in most needed payments as it reduces chumming expenses.

For the past three years, the Saint Paul's Bay tuna-ranch operation, as well as the Comino Channel one, have been filled-up thanks to Salerno's *Associazione Produttori Tonnieri del Tirreno, Srl*, of which Mr. Consalvo Natale is the President.



Aerial view of Italian purse seiners operating in the Central Mediterranean Sea.



In 2003, Mr. Lee won the Salerno bid for the 2.000-some tonnes of tuna quota.

This year Salerno has again sold its tuna to AJD at some €4,5/kilo. AJD can afford this kind of pricing because of shorter distances between the fishing grounds and its farm-sites.

According to Mr. Azzopardi it takes 35 days for the pens filled with live tuna to be tugged back to Malta all the way from Sardinia were most of the fish has been caught this year by the Salerno fleet.



Italian tuna purse seiner: FATIMA



Italian tuna purse seiner: GAETANO



Italian tuna purse seiner: PADRE PIO



Italian tuna purse seiner: VALERIA

Malta Fish Farming & Melitta Tuna Ltd.

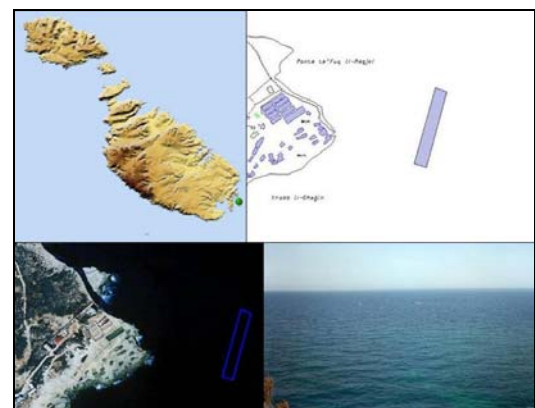
Malta Fishfarming and Melitta Tuna are operated by the Ellul brothers, owners of the Elbros Group of companies. Elbros core business is quarrying and construction.



Saviour Ellul, Chairman of the Elbros Group

Malta Fishfarming and Melitta Tuna run two-in-one tuna farms located at:

- Il-Ponta tal-Munxar North East off Marsaxlokk Harbour.



- A: 35° 50' .76N; 14° 35' .15E
- B: 35° 50' .67N; 14° 35' .31E
- C: 35° 50' .34N; 14° 35' .09E
- D: 35° 50' .40N; 14° 34' .92E

- Il-Hofra z-Zghira North East off Marsaxlokk Harbour

Brothers Salvu and Charles Ellul run Ta' Robba- L/O Kirkop based, Malta Fishfarming Ltd. and Melitta Tuna Ltd. respectively.

The shareholding structure of both companies is unclear though it is believed that Japan-based Takayama Seafood Co. Ltd. will be buying most of the fish this year.

Takayama Seafood was established in 1992 with a \$US157:000 Capital. Takayama's annual imports of fish –mainly fresh and frozen tuna- into Japan, amount to some \$US38.235.000.

According to Malta Fishfarming Ltd. and Melitta Tuna Ltd. spokesman, Mr. Salvu Ellul, "the companies have contracts with a number of tuna fishermen, from whom they purchase tons of live fish" during the 16-week fishing season, which extends from April to July, the peak month for tuna catches being May during which more than 68% of the this year's total catches were obtained.

However, it is interesting to note that during the peak month of May the approximate size of individual fish landed in Malta, has dropped quite drastically from 300 kilos to 180-200 kilos.

"The average price per kilo for Bluefin tuna this year has dropped by 17% when

compared to last year, reaching the highest value during May at Lm2.25 per kilo”, explained Mr. Salvu Ellul at a recent press conference in Valletta. “As much as 90% of the tuna penned locally is exported. In fact, when the fish mature to the desired tonnage, the buyers, usually Japanese, send in special vessels to gut the fish and transport them to their destination.”



A: 35° 50'. 08N; 14° 34'.46E
 B: 35° 49'. 90N; 14° 34'.85E
 C: 35° 49'. 70N; 14° 34'.75E
 D: 35° 49'. 90N; 14° 34'.35E

Yet Mr. Salvu Ellul has other problems in mind than his 1.200 tonnes of stoked tunas.

Melitta Tuna Ltd. is seeking a €3,5million compensation for the loss of two cages transporting some 300 tons of live-tunas.

On July 15th sea vessel TMM Oaxaca steered over two live-tuna transport cages as their were being towed by trawlers off the coast of Delimara, according to different reports from Malta.

“Tunas in one of the cages escaped and tunas in the second cage died” told Mr. Ellul to Magistrate Jacqueline Padovani Grima, as he filed a writ of summons in Valletta’s Civil Court to indict the owner of the vessel and its German captain, Uwe Leling, who pleaded not guilty to causing the damage.

According to unconfirmed reports, lost tunas are believed to have been caught and transferred in June, near Libyan territorial waters by a French purse seine fishing fleet working for Tripoli-based company Nour-Al-Haiat Fishing Co. (NAFCO)

The fish would have been sold to Melitta Tuna Ltd. by NAFCO because it could not handle its ranching at the Garabouli tuna farm site, 80 miles East of Tripoli.

Fish & Fish Ltd.



Spanish tuna farmer Ginés Méndez has moved to Malta after freezing most of his business activity in Mazarrón, SW of Cartagena.



Gines Méndez, President of the GME Group

According to early June 2004 press reports, 55 workers at the 384.874m² Puntas de Calnegre farm were made redundant due to a sheer lack of fish to work with this year. The eight Ø50m cage farm, with an authorised maximum capacity of 924 tonnes, was operated by Atunes de Mazarrón SL, a subsidiary of the Ginés Méndez España Group of companies. Most of its production was sold to Japanese processing and distribution companies Kanetomo and Itochu Corp.

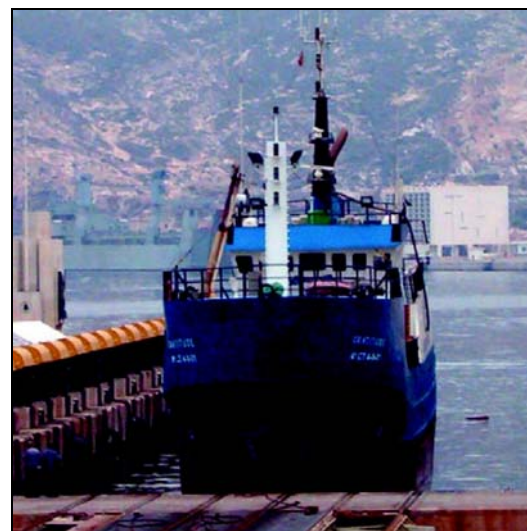


Views of Atunes de Mazarrón tuna farm

According to unconfirmed local reports, the Ginés Méndez Group of companies would be also selling another of its tuna farming operations –Piscifactorías de Levante, SL- in San Pedro del Pinatar, NE of Cartagena.



It is still unclear if Ginés Méndez is putting his fleet of vessels (Hispania II, Gratitude, Cabo Tiñoso Uno, ...) up for sale or if he will transfer their ownerships to his Malta tuna farming operation.

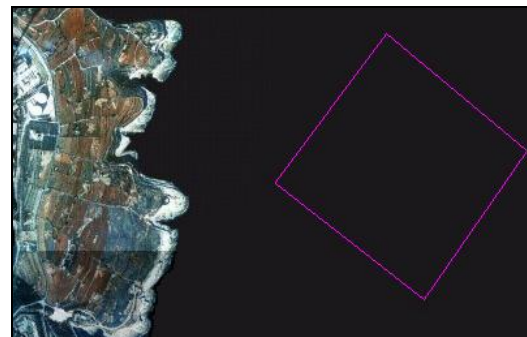


Vessels Gratitude and Cabo Tiñoso Uno

Méndez’s Zurrieq-based Fish & Fish Co. Ltd. runs the eight Ø50m cage tuna farm operation off Il-Hofriet, SE of Malta. The farm has a maximum holding capacity of 1.200 tonnes of live-tuna.



F&F live-tuna transport cage seen before the 2004 fishing season in Malta



F&F tuna farm location othophotography

Fish & Fish Co. Ltd. shareholding structure is unclear, though Méndez has teamed-up with local businessmen: Joe Caruana, Emmanuel Azzopardi and Emmanuel Tabone.

Tunisia

Viver Maritime de Tunisie, SL

A Tunisian proverb said, "Nothing is daffier than selling fish at sea".

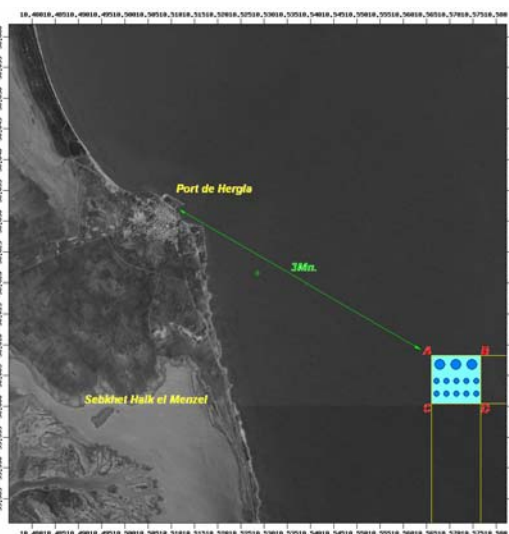
In 2001 Hamed Sallem, Chairman of Sfax-based agribusiness company Fish Tunisie, SL, proved everybody wrong as he managed to catch and transfer some 1.600 tonnes of live-tunas into ten Ø50m gravity cages belonging to Spanish company Tuna Farms of Mediterráneo, SL.

All ten cages were towed back to TFM's farm in Murcia. This was the first time ever that a 90 days live-tuna transport operation was achieved. The crossing of the Sicily Strait took three weeks alone due to strong adverse currents.

Fish mortality was kept as low as 5% due to TFM and Rimorchiatori Sardi's own cage-towing technique.

Such an astounding business success was more than enough to convince former Tunisian Fisheries General Manager, Taoufik Shriah, to issue an up-to 1.300 tonnes tuna farm permit in the name of Tuna Farms of Tunisia, SA (A joint-venture between the Antalba Group of companies, Hamed Sallem and his nephew Ridah Sallem).

The chosen tuna farm site was some three miles SE of the Port of Hergla in the Gulf of Hammamet.



Initial TFM's tuna farm location

Hamed Sallem's close friendship with President Ben Ali's son-in-law and businessman, Slim Chiboub, did the rest.



Slim Chiboub

Unfortunately the project was halted just before the 2002 tuna fishing season even started.

Major corporate differences between Hamed Sallem and his Spanish partners ended up in the company's split. The Sallem's sold their fish to the Fuentes group and TFM moved its cages to Libya where it was able to transfer and tow back to Spain some 1.500 tonnes of live-tunas.

The 2002 experience proved the Sallem's to be less profitable than the previous year and in 2003 the Hergla tuna ranching operation resumed.

The farm site was split in two.

The northern part and the cold storage infrastructure at Hergla were adjudicated to Tuna Farms of Tunisia, SL (A 50/50 joint-venture between the Antalba Group and Ridha Sallem).

The southern part of the farm site went to Viver Maritime de Tunisie, SL. VMT (A joint venture between Hamed Sallem and Sinforsoso Albaladejo former shareholder of Viveros Marinos Hijos de Albaladejo, SL. (Spain).

VMT's 286.440m² (Maximum holding capacity: 1.000 tonnes) tuna ranch is made of:

- One Ø90m tuna fattening cage
- Four Ø50m tuna transport cages
- One Ø25m tuna harvesting cage

VMT's General Manager is Hamed Sallem's youngest son Sahbi Sallem. Tuna ranching operations are supervised by farm captain Jamel Ben Houcine.



Sahbi Sallem, General Manager of Viver Maritime de Tunisie, SL. (VMT)

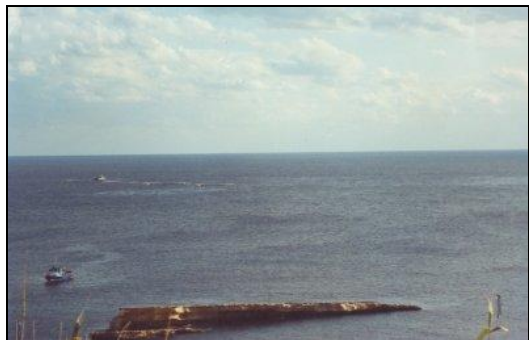
According to Sahbi Sallem, this year's total production will amount to less than 300 tonnes of ranched tunas since all of the fish was only caught by Hamed Sallem's tuna purse seine fleet:

- Raoued (SF 1766)
- Riadh (SF 1720)
- Sallem (SF 2322)
- Zied (SF 1794)



Norwegian built purse seiner Sallem

The harvested tuna will be processed and packed at Fish Tunisie's 4.500m² factory in Sfax, which holds:



F&F tuna farm at Il-Hofriet



French tuna purse seiners at the Gran Harbour, Malta

This year, most of F&F ranched tunas were caught and transferred by French Sète tuna purse seiners, near or inside Libyan territorial waters. F&F 2004 fresh and frozen farmed tuna production will be bought by Matsuoka Co. Ltd. from Japan.



Takao Matsuoka, President, Matsuoka Co., Ltd.

50 million yen capital Shimonoseki based Matsuoka Co. Ltd. was established in February 1950 and employs some 180 people.



Matsuoka Co. Ltd purchases tuna all-over the World and processes it thanks to its new 120.000 metric tonnes capacity cold storage.

- ATRT Tuna-Ranching Intelligence Unit -

- One tunnel with patches:
Capacity: 350 kgs/hour.
- Three -40°C freezing tunnels:
Capacity: 12 Tons/day.
- Two 0°C cold rooms:
Capacity: 20 Tons/day
- Two ice silos:
Capacity: 13 Tons/day
- One -18°C stocking room:
Volume: 3.000 m³

VMT's 2004 production will be sold to Shiroei Ltd and Tokyo Seafoods, Ltd. (Japan)

Established in 1988, Tokyo Seafoods Ltd. imports into Japan yearly some \$US170 million worth of fish.

The company is 40% owned by Meiji Dairies Corp. with reported 2003 net sales of \$US6.092.917.000.



*Shigetaro Asano, President & CEO
Meiji Dairies Corporation*

Libya

Nour-Al-Haiat Fishing Co.

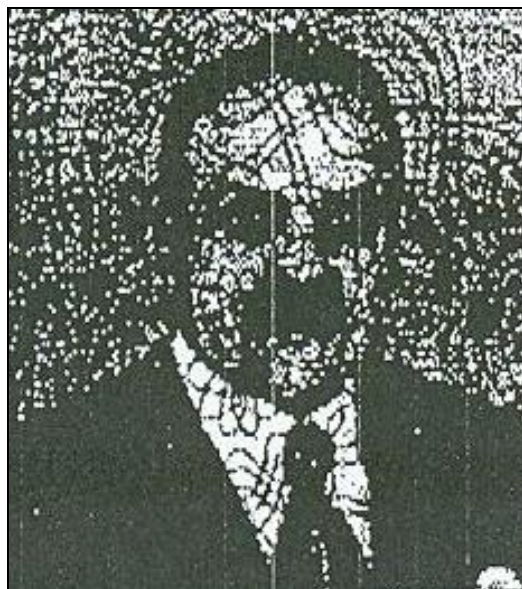
Tripoli-based Nour-Al Haiat Fishing Co. (NAFCO) started as a tuna long-lining business giving logistical support and selling Libyan tuna quota to Japanese long liners at Tripoli, Khoms and Benghazi.

The company's shareholding structure is opaque and little is known about who the real bosses are. What is clear is that Mr. Aladdin Wefati, General Manager and Dr. Abdel Sallem Furjani, Operations Manager, have strong ties to Libyan Fishing and Aviation Authorities.

In just five years, NAFCO has become a "must" for most foreign tuna-fishing companies wanting to do business in Libya.

Through savvy lobbying, NAFCO has managed to weave a logistics network inside Libya that allows its foreign partners and clients to freely operate their vessels and tuna spotting airplanes, even during the month of June.

Aladdin Wefati is the brother of a high ranked Libyan Civil Aviation Authority officer and a close friend to Eng. Bashir Ramadan Abu Genah, former Chairman of the Libyan General Authority for Marine Wealth and Aquaculture.



Aladdin Wefati, NAFCO General Manager

NAFCO owns and runs most of Libyan flagged tuna purse-seiners:

- **UZO 2. (5A-RZ)**
- **TAGREFT, (5A-5A)** The vessel underwent remodelling in 2003 at Piriou shipyard in France.



Tagreft, (5A-5A) undergoing remodelling at Piriou shipyard in France

- **KHALEEJ ETTAHADI (5A-RY)**
- **AL-RABTA (5A-RS)**
- **EL-AGHILE (5A-SB)**
- **NAWRAS (5A-UW)** former French flagged Cisberlande III from Sète.



Nawras (5A-UW)

It is also thought that NAFCO controls most of Libya's long-lining fishing fleet made of:

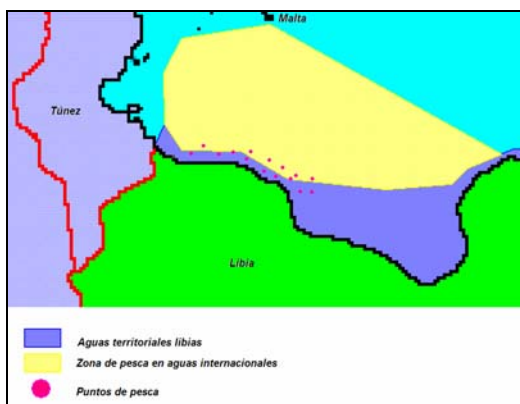
- **AL-JAKADA (92 tonnes in 2002)**
- **AL-SHADQ (40 tonnes in 2002)**
- **AL-NASIM (42 tonnes in 2002)**
- **AL-NAJMA ALBAIDA (46 tonnes in 2002)**
- **AL-BARKA ALJAMAINA (80 tonnes in 2002)**

Almost every single foreign tuna purse-seining vessel operating inside or near to Libya's Territorial Waters uses NAFCO's services.

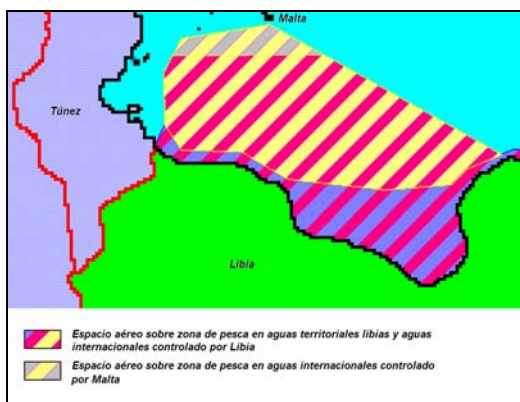
Through 50/50 fishing partnership contracts with French, Italian and Spanish tuna fishing companies, NAFCO establishes a "de facto" fishing calendar and distribution of the different fishing grounds in Libya.

As a host company, NAFCO provides foreign tuna spotting aircraft operators with full logistical and tactical support from land, whichever the landing and take-off Libyan airport for each airplane is.

NAFCO also provides full legal, logistical and tactical coverage/support from within Libyan territory for any situation that may hamper, restrict or impede their normal activities and/or operations during the tuna-fishing seasons inside and in the adjacent Libyan territorial waters.



Libya's tuna fishing grounds and territorial waters



Overlapping of Libya's fishing grounds and controlled airspace

Since all of the tuna fishing grounds inside and outside Libyan territorial waters are inside Libyan controlled airspace, small "Push-Pull" Cessnas and Partenavias P68 tuna spotting aircrafts must land and take-off Libyan airports. (See Spot that tuna!)

Libya's tuna fishing grounds are known to be the last refuge for the over fished Atlantic Bluefin tuna. The Gulf of Sirte happens to be a "protected" spawning area for the fish. It is there that most of the catches and transferrings have taken place for the past three years.

During 2003, some 11.500 tonnes of Bluefin tunas were caught and transferred inside the

Libya fishing ground. This year has been no exception.

NAFCO tuna fishing vessels have been able to work on an exclusivity base inside Libyan territorial waters until June 15th.

Chartered and/or associated foreign purse seine vessels were then allowed inside Libyan territorial waters, where it is thought that 60% of the entire Mediterranean live-tuna catching and transferring activity has taken place this year.

Yet, NAFCO's lucrative fishing and logistics business set-up hasn't translated into a proper tuna ranching operation off the Libyan coast.

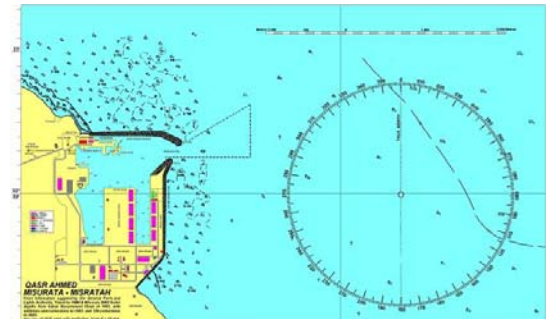
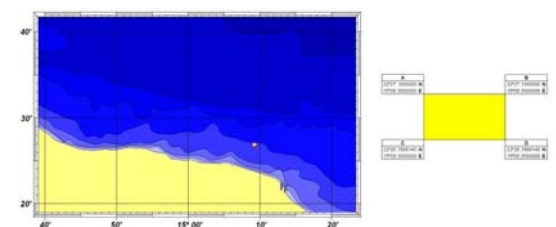


Chart and partial view of the Port of Misratah



Misratah tuna farm project location charts

Its initial joint-venture tuna ranching project in Misratah with Grupo Antalba from Spain, was moved to Garabouli (West of Misratah) in 2003, for unknown reasons.

The decision resulted in a total fiasco.

After three months at the new Garabouli farm site, the surviving 60 tonnes of starving-tunas were sold at a loss to a foreign tuna rancher.

"The poor tunas were just starving to death inside those cages as sea surface water temperature was as high as 33°C, the perfect scenario for bacterial blooming" says a disgusted former NAFCO tuna-diver.

Unconfirmed reports from Tripoli state that some 400 tonnes of live-tunas that were initially transferred into NAFCO's cages this year, were slaughtered at sea and frozen on board Japanese long liners, as early as June. How that fish will be declared or if it will be declared at all, remains to be seen. Mr. Masayuki Yano from Marubeni Corp. with a strong presence in Libya, emphatically denies Marubeni or its sashimi-wholesaler Marukoh's involvement in such an operation.

Greece

Selonda & Nireus go tuna

As one of the pioneers of Mediterranean aquaculture, Selonda constitutes, both for Greek and European aquaculture as a whole, an example of a company with a clear strategy, dedication to fundamental business principles, sound choices and, above all, sustainable growth rates.



Since its establishment, the Group has adopted an integrated approach to planning and has set definite goals that have steadily led a newly established primary production area to its maturity.

The culmination of this approach was the company's listing on the Athens Stock Exchange, which makes Selonda the first aquaculture company on a European level to have gained access to the capital markets and their advantages of transparency, public exposure, and participation.

What lies behind SELONDA Group's success -the hatcheries and on growing units, the commercial, holding companies, and aquaculture consultant companies that comprise the Group, but also the mergers, acquisitions and strategic alliances- is a team of dedicated executives who have managed through their scientific expertise, experience, and professional conduct, to transform the company vision into a successful business reality, operating in the high technology sector of marine biotechnology.



John Stephanis is CEO Selonda Aquaculture S.A., President of FEAP and Board Member of the Federation of Greek Maricultures

Nireus Chios Aquaculture, one of the enterprises that have led Greece's explosive growth in fish farming during the last 15 years, has also decided to go tuna.



NIREUS GROUP OF COMPANIES

Nireus began on the island of Chios in 1988 as a simple fattening unit. Fifteen years later the company reached a production capacity of 9.000 tons and 65 million juveniles of sea bream and sea bass at numerous units throughout Greece. It is Greece's largest

exporter of farmed sea bream and sea bass, the two Mediterranean species that have caught the favour of consumers worldwide. Nireus has expanded through mergers and acquisitions so that today it operates three state-of-the-art hatchery stations, 19 grow-out units, and packaging plants on the islands of Chios, Inousses, Evia, and in Western Greece.

The company was first listed on the parallel market of the Athens Stock Exchange in 1995 and in 1998 moved to the main market, where it is listed today. Its commitment to aquaculture led Nireus to establish Proteus Equipment S.A. and Feedus S.A. Proteus specializes in the production and trade of aquaculture equipment and Feedus in animal and fish feed products. International expansion began in 1998 when Nireus began operations in Abu Dhabi with International Fish Farming Company, which it manages and in which it is a minority shareholder.

Further diversification led to the acquisition of Sarantis Traditional Chios Sweets in 1999 and Alpino, a Northern Greece dairy company. Nireus also founded Eurocaterers, which specialized in filleted, headed, gutted fish, and marinated seafood, which the company marketed under the Sea Delicacies brand. Sea Delicacies earned the international Sial D'Or award. Most recently, the company has entered the fast-food sector by establishing SeaLand, a new seafood restaurant concept that is getting its start in Athens.

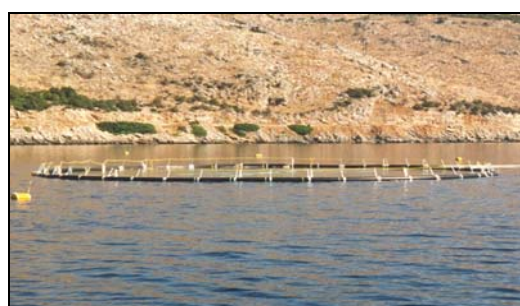
On May 26, 2003, Selonda Aquaculture SA. (25%) Nireus Chios Aquaculture, SA (25%) and Australian Fishing Enterprises Spain SL (50%) (A subsidiary of the company Australian Fishing Enterprises, which is based in Australia and has a long experience in the farming and commerce of tuna fish along with a significant know-how in the tuna ranching sector), established Bluefin Tuna Hellas, SA. with an initial share capital amounting to €1.000.000.

Selonda Aquaculture SA also concluded on 4.2.2003 the purchase of the 100% of the company Diolkos Fish Farming S.A. for €70,700.

Diolkos Fish Farming S.A. is active in Mediterranean fishes aquaculture, through floating production units. It is licensed to ranch 270 tonnes of live-tuna in Omvrios Island, Corinthia, Peloponnesus. This production unit is next to the existing production units of Selonda Aquaculture S.A.



Omvrios Island, off Pefkali, Corinthia, Bluefin Tuna Hellas tuna ranch location



Furthermore, Selonda Aquaculture SA (50%) Nireus Chios Aquaculture, SA (50%) have established Medtuna, SA.

The 50/50 joint-venture company has acquired the appropriate permissions for the location off West Greece's (Grava-Astakos, Kefalonia) coast for the production of 1.500 tonnes of farmed Bluefin Tuna.



Medtuna, SA's tuna farm site at Grava-Astakos, Kefalonia

It is unclear if both Greek tuna farming joint ventures were successful at all this year.

Both Selonda and Nireus are declining to make any comment on whether they have managed to transfer live-tunas into their transport cages, though unconfirmed reports are stating that some 600 tonnes of live tunas caught inside Libyan territorial waters, were indeed sold to Greek tuna farmers by Tripoli based Nour-Al-Haiat Fishing Co.

Though -according to these same unconfirmed reports- these tunas were caught by French purse seiners:...



CHRISDERIC II (FQAT)



VILLE D'AGDE 3 (FUTT)



RAYMOND ELISE III (900271)

...it is still unknown how the fish could be declared to ICCAT: under French or Libyan ICCAT quota.

No way & No goes

The Japanese desire for sushi and sashimi has driven up demand for less expensive farmed tuna a reported 50% in the past year.

"It has basically opened a new market", says fisheries scientist Victor Restrepo (Madrid, Spain) from the GFCM/ICCAT WG on Sustainable Tuna Farming.



ICCAT Assistant Executive Secretary, Victor Restrepo

The GFCM/ICCAT WG on Sustainable Tuna Farming is a joint venture coordinated by the General Fisheries Commission for the Mediterranean (GFCM) and the International Commission for the Conservation of Atlantic Tunas (ICCAT). The working group's is due to produce monitoring guidelines and possible regulation for the Mediterranean tuna farming industry, by the end of 2004.

Although ICCAT tuna fishing quotas in the Mediterranean Sea have not changed for the past years, it is uncertain how much of the catch is now farmed tuna.

"Given the available information, there is no strong evidence yet of a significant overall increase in tuna harvesting", says GFCM Secretary Alain Bonzon (Rome, Italy) noting, however, that there is a shift towards fleets that catch fish to be farmed instead of sold direct-to-market.

"Whether the tons of tuna caught each year go to farming or canned tuna or sashimi, it's all the same in terms of impacts on the wild stock", maintains Restrepo.

Nevertheless, the World Wildlife Fund for Nature (WWF) contends in its June 2004 Tuna farming Report, that "the rapid growth of tuna farming is unsustainable and harming already depleted Mediterranean wild tuna stocks. and is a big threat to the livelihood of fishermen who use sustainable fishing methods."

Sergi Tudela, WWF's Mediterranean Fisheries Officer (Barcelona, Spain), remains convinced that tuna farming is putting more pressure on wild stocks and is not being properly dealt with by the GFCM/ICCAT working group.

"Tuna farming is supporting the development of purse seining for catching tuna in the Mediterranean", he says.

He points out that less regulated countries, such as Algeria and Tunisia, are not reporting their activities and are building new fleets that will further exploit wild stocks.

"Nobody can tell you if the quota is being reached or not", he points out, adding that tuna farming is disrupting the way fisheries biologists collect data.

Although tuna farming is a recent development, it has proven profitable.

Over 36 farms currently exist in the Mediterranean Sea. Bonzon suggests that there are indications of over-investment in this new activity and some farms may not remain economically viable.

Professional unscrupulousness and/or sheer lack of financing capacity have also been of the essence in a number of tuna farm projects that have not seen the light in the Mediterranean Sea.

Most of these projects were spearheaded by greedy promoters with no real linkage to the sector or by Japanese "under-cover" tuna distribution companies.

Other projects had to face fierce opposition from local fishermen, coastal communities and environmental NGOs.

The following "No-way No-go" list is a clear example of how things shouldn't be done.

- Tuna farm project between Puerto de San Pedro del Pinatar and Torre Derribada, Spain.

37° 49' 59.2" N; 0° 40' 59.6" W
37° 49' 58.9" N; 0° 40' 43.2" W
37° 49' 07.0" N; 0° 40' 44.8" W
37° 49' 07.4" N; 0° 41' 01.2" W

Promoter SERVICIOS ATUNEROS DEL MEDITERRÁNEO, S.L.

- Tuna farm project off the coast of La Polacra, Nijar, Almeria, Spain.



Promoter: ACUISLETA, SL.

- Tuna farm project off the coast of Tortolí, Sardinia, Italy.
Promoter: Tuna Farm di Portici.
- Tuna farm project off the coast of Rada dell'Arenella (833.120m²), Siracusa, Sicily, Italy.



Promoter: Sicil Tuna Farm (Gela)

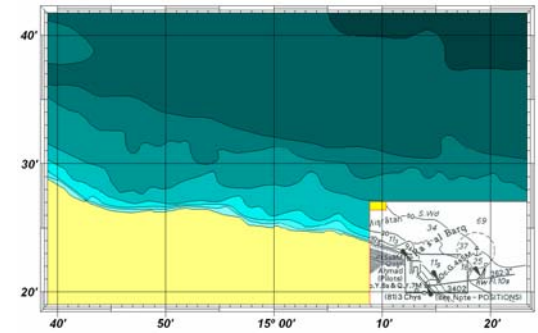
- Tuna farm project off the coast of Rada di Brucoli, Augusta, Italy.
Promoter: Edenfish
- Tuna farm project in the Gulf of Gaeta, (504.100m²), between Formia and Gaeta Italy.
Promoter: MedFish S.p.A. (Gaeta)



- Tuna farm project in the Stubišće cove, Komiza Bay, Island of Vis Palagruza, Croatia.

Promoter: Neptun from Komiža backed by Japanese Group.

- Tuna farm project off the northern coast of Misratah, Libya.



Promoters: Grupo Antalba (Spain)
Nour Al-Haiat (Libya)

- Tuna farm project in Portocolom, Mallorca, Spain.
Promoter: Viveros Marinos Albaladejo.

- Tuna farm project in the Gulf of Rosas, Spain.
Promoter: Grupo Antalba.



Advanced Tuna Ranching Technologies S.L. (ATRT), is the first tuna aqua-culture R&D company in Europe.

Its business is the development, implementation & management of new eco-friendly tuna ranching turnkey projects, technologies and methodologies.

ATRT believes that the decline of conventional bluefin tuna fisheries and the significant changes in national and international regulations governing the fishing industry, provides a unique opportunity to focus on emerging sustainable fisheries and responsible new catching and ranching techniques.

ATRT's tailor-made projects and technology are based on cleaner organic production as well as the total elimination of captured endangered species such as seabirds, dolphins, turtles, sharks and juvenile tuna.



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Promoting responsible tuna fishing & ranching worldwide